



# THE DATASHEET OF T520V227M006ATE012



## T52X/T530 Polymer Electrolytic Capacitors

### Overview

### KOCAP Polymer Capacitors

The KEMET Organic Capacitor (KO-CAP) is a solid electrolytic capacitor with a conductive polymer cathode capable of delivering very low ESR and improved capacitance retention at high frequencies. KO-CAP combines the low ESR of multilayer ceramic, the high capacitance of aluminum electrolytic and the volumetric efficiency of tantalum into a single surface mount package. Unlike liquid electrolyte-based capacitors, KO-CAP has a very long operational life and high ripple current capabilities.

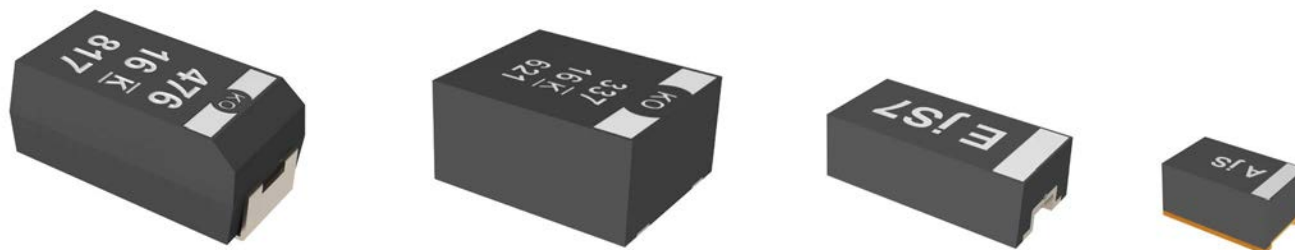
The T52X/T530 provides the widest range of voltages, capacitance and case size options in the KO-CAP family and is suitable for general purpose DC applications for up to 48 volt DC voltage rails.

### Benefits

- ESR values down to 5 mOhms
- Stable capacitance across temperature and voltage
- No aging effects
- High ripple handling
- Volumetrically efficient
- High frequency capacitance retention
- 100% accelerated steady state aging
- 100% surge current tested
- Halogen-free epoxy/RoHS compliant

### Applications

Typical applications include DC/DC converters, audio/sound circuits (mobile phone and base stations, smart phones, MP3 players), power supply inputs, portable electronics (notebook PCs, displays, SSDs, HDDs and USBs, digital cameras, GPS navigation systems, WiFi modules), telecommunications, consumer electronics (analytical and test equipment, high speed servers), high voltage applications such as 12 V to 48 V power input rails, densely populated circuits with space restrictions, microprocessor decoupling and high ripple current applications.



## Environmental Compliance

- RoHS Compliant (6/6) according to Directive 2002/95/EC when ordered with 100% Sn, Ni-Pd-Au or non-magnetic 100% Sn solder
- Halogen-free
- Epoxy compliant with UL94 V-0

## K-SIM

For a detailed analysis of specific part numbers, please visit [ksim.kemet.com](http://ksim.kemet.com) to access KEMET's K-SIM software. KEMET K-SIM is designed to simulate behavior of components with respect to frequency, ambient temperature, and DC bias levels.

## Series Reference Selection

| Series |                      | Voltage Range             |                           | Temperature Rating |             |             | Special Features |         |
|--------|----------------------|---------------------------|---------------------------|--------------------|-------------|-------------|------------------|---------|
|        |                      | < 1 V to 9 V Applications | 12 V to 48 V Applications | 85°C Rated         | 105°C Rated | 125°C Rated | Miniature Size   | Low ESL |
| T520   | Standard             | X                         | *                         | X**                | X           |             |                  |         |
| T521   | High Voltage         |                           | X                         |                    | X           | X           |                  |         |
| T523   | Facedown Terminal    | X                         | X**                       | X                  | X**         |             |                  | X       |
| T525   | High Temperature     | X                         | *                         |                    |             | X           |                  |         |
| T527   | Small Size           | X                         |                           |                    | X           |             | X                |         |
| T529   | Miniature            | X                         | X                         |                    | X           |             | X                |         |
| T530   | High Cap/<br>Low ESR | X                         | X                         |                    | X           | X           |                  |         |

\* Not recommended for new design.

\*\* Selected values.

## Ordering Information

| T               | 520                                                                                                                                                                        | V                                                                                 | 157                                                                                    | M                     | 006                                                                                                                                                                                          | A                   | T                                                                                                                                                                                          | E045                                                      |                                        |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|----------------------------------------|
| Capacitor Class | Series                                                                                                                                                                     | Case Size <sup>1</sup>                                                            | Capacitance Code (pF)                                                                  | Capacitance Tolerance | Rated Voltage (VDC)                                                                                                                                                                          | Failure Rate/Design | Termination Finish                                                                                                                                                                         | ESR Code                                                  | Packaging (C-Spec)                     |
| T = Tantalum    | 520 = Polymer<br>521 = High voltage<br>523 = Facedown terminal<br>525 = 125°C rated<br>527 = Facedown terminal<br>529 = Substrate terminal<br>530 = 125°C High capacitance | A<br>B<br>C<br>D<br>H<br>I<br>J<br>L<br>M<br>P<br>Q<br>T<br>U<br>V<br>W<br>X<br>Y | First two digits represent significant figures. Third digit specifies number of zeros. | K = ±10%<br>M = ±20%  | 002 = 2<br>2R5 = 2.5<br>003 = 3<br>004 = 4<br>006 = 6.3<br>008 = 8<br>010 = 10<br>011 = 11<br>12R = 12.5<br>016 = 16<br>020 = 20<br>025 = 25<br>035 = 35<br>050 = 50<br>063 = 63<br>075 = 75 | A = N/A             | T = 100% Matte tin (Sn) plated<br>H*** = Tin/lead (SnPb) solder coated (5% Pb minimum)<br>P* = Ni-Pd-Au plated<br>N = Non-magnetic 100% Tin (Sn)<br>M = Non-magnetic (SnPb)<br>A** = Ni-Au | E = ESR last three digits specify ESR in mΩ (045 = 45 mΩ) | Blank = 7" reel<br>7280**** = 13" reel |

Gold termination available upon request

\* P termination only available on select part numbers

\*\* A termination only available on T529 part numbers

\*\*\* H termination not available for T527/T529 part numbers

\*\*\*\* 13" reel not available for T520A case part numbers

## Performance Characteristics

| Item                    | Performance Characteristics                                                     |
|-------------------------|---------------------------------------------------------------------------------|
| Operating Temperature   | -55°C to 85°C/105°C/125°C (refer to part number for maximum temperature rating) |
| Rated Capacitance Range | 4.7 – 1,500 µF at 120 Hz/25°C                                                   |
| Capacitance Tolerance   | K tolerance (10%), M tolerance (20%)                                            |
| Rated Voltage Range     | 2 – 75 V                                                                        |
| DF (120 Hz)             | Refer to Part Number Electrical Specification Table*                            |
| ESR (100 kHz)           | Refer to Part Number Electrical Specification Table                             |
| Leakage Current         | Refer to Part Number Electrical Specification Table                             |

\* For T529 Series DF measurement apply 1.5 V DC

## Qualification

| Test                       | Condition                                                                                                                                                          | Characteristics |                                                                                                                                                                                             |                                        |          |                                      |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------|--------------------------------------|
| Endurance                  | Temperature: 85°C, 105°C, 125°C **<br>Voltage: 1.0 Rated Voltage<br>2/3 Rated Voltage for 125°C rating PN<br>Time: 2,000 Hours<br>1,000 Hours for T527/T529 Series | Δ C/C           | Within -20%/+10% of initial value<br>T527 and T529 Series: Within initial DC/C limits                                                                                                       |                                        |          |                                      |
|                            |                                                                                                                                                                    | DF              | Within initial limits<br>T527 and T529: Within 1.5 x initial limits                                                                                                                         |                                        |          |                                      |
|                            |                                                                                                                                                                    | DCL             | 85°C and 105°C rated parts: Within 1.25 x initial limit<br>125°C rated parts: Within 2.0 x initial limits<br>T527 Series: Within initial limits<br>T529 Series: Within 3.0 x initial limits |                                        |          |                                      |
|                            |                                                                                                                                                                    | ESR             | Within 2.0 x initial limit<br>(N/A for T527 & T529)                                                                                                                                         |                                        |          |                                      |
| Storage Life               | Temperature: 105°C, 125°C **<br>Voltage: 0 Voltage<br>Time: 2,000 Hours<br>(N/A for T527 and T529 Series)                                                          | Δ C/C           | Within -20%/+10% of initial value                                                                                                                                                           |                                        |          |                                      |
|                            |                                                                                                                                                                    | DF              | Within initial limits                                                                                                                                                                       |                                        |          |                                      |
|                            |                                                                                                                                                                    | DCL             | Within 1.25 x initial limit<br>T521 Series: 1.25 x IL at 105°C, 2x IL at 125°C<br>T525/T530 Series: Within 2.0 x initial limit                                                              |                                        |          |                                      |
|                            |                                                                                                                                                                    | ESR             | Within 2.0 x initial limit                                                                                                                                                                  |                                        |          |                                      |
| Humidity                   | Temperature: 60°C<br>Voltage: No Load<br>Humidity: 90% RH<br>Time: 500 Hours, 1,000 Hours (T525, T530)                                                             | Δ C/C           | Within -5%/+35% of initial value<br>T527/T529 Series: -20%/+30% of initial DC/C limit                                                                                                       |                                        |          |                                      |
|                            |                                                                                                                                                                    | DF              | Within initial limits<br>T527/T529 Series: Within 1.5 x initial limits                                                                                                                      |                                        |          |                                      |
|                            |                                                                                                                                                                    | DCL             | Within 5.0 x initial limit<br>T521/T525/T529/T530 Series: Within 3.0 x initial limit<br>T527 Series: Within initial limits                                                                  |                                        |          |                                      |
|                            |                                                                                                                                                                    | ESR             | Within 2.0 x initial limit<br>T525/T527/T529/T530: N/A                                                                                                                                      |                                        |          |                                      |
| Temperature Stability      | Extreme temperature exposure at a succession of continuous steps at +25°C, -55°C, +25°C, +85°C, +105°/125°C, +25°C                                                 |                 | +25°C                                                                                                                                                                                       | -55°C                                  | +85°C    | +105°/125°C                          |
|                            |                                                                                                                                                                    | Δ C/C           | IL*                                                                                                                                                                                         | +/-20%<br>-20% to 0% of DC/C (T527/29) | ±20%     | +/-30%<br>+50% -0% of DC/C (T527/29) |
|                            |                                                                                                                                                                    | DF              | IL                                                                                                                                                                                          | IL                                     | 1.2 x IL | 1.5 x IL<br>IL (T529)                |
|                            |                                                                                                                                                                    | DCL             | IL                                                                                                                                                                                          | N/A<br>IL (T529)                       | 10 x IL  | 10 x IL<br>1.25 CV (T529)            |
| Surge Voltage              | Temperature: 105°C, 85°C (T527/T529)<br>Voltage: 1.32 x Rated voltage<br>Time: 1,000 cycles                                                                        | Δ C/C           | Within -20%/+10% of initial value<br>T527/T529 Series: Within initial DC/C limits                                                                                                           |                                        |          |                                      |
|                            |                                                                                                                                                                    | DF              | Within initial limits                                                                                                                                                                       |                                        |          |                                      |
|                            |                                                                                                                                                                    | DCL             | Within initial limits                                                                                                                                                                       |                                        |          |                                      |
|                            |                                                                                                                                                                    | ESR             | Within initial limits<br>T527/T529 Series: N/A                                                                                                                                              |                                        |          |                                      |
| Mechanical Shock/Vibration | MIL-STD-202, Method 213, Condition I, 100 G Peak.<br><br>MIL-STD-202, Method 204, Condition D, 10 Hz to 2,000 Hz, 20 G peak                                        | Δ C/C           | Within ±10% of initial value<br>Within initial DC/C limits                                                                                                                                  |                                        |          |                                      |
|                            |                                                                                                                                                                    | DF              | Within initial limits                                                                                                                                                                       |                                        |          |                                      |
|                            |                                                                                                                                                                    | DCL             | Within initial limits                                                                                                                                                                       |                                        |          |                                      |

\*IL = Initial limit

\*\*Refer to part number specifications for individual temperature classification.

## Reliability

KO-CAP capacitors have an average failure rate of 0.5 %/1,000 hours at category voltage,  $U_C$ , and category temperature,  $T_C$ . These capacitors are qualified using industry test standards at  $U_C$  and  $T_C$ . The minimum test time (1,000 hours or 2,000 hours) is dependent on the product series.

The actual life expectancy of KO-CAP capacitors increases when application voltage,  $U_A$ , and application temperature,  $T_A$ , are lower than  $U_C$  and  $T_C$ . As a general guideline, when  $U_A < 0.9 * U_C$  and  $T_A < 85^\circ\text{C}$ , the life expectancy will typically exceed the useful lifetime of most hardware (> 10 years).

The lifetime of a KO-CAP capacitor at a specific application voltage and temperature can be modeled using the equations below. A failure is defined as passing enough current to blow a 1-amp fuse. The calculation is an estimation based on empirical results and is not a guarantee.

$$VAF = \left( \frac{U_C}{U_A} \right)^n$$

where:

VAF = acceleration factor due to voltage, unitless

$U_C$  = category voltage, volt

$U_A$  = application voltage, volt

n = exponent, 16

$$TAF = e^{\left[ \frac{E_a}{k} \left( \frac{1}{273+T_A} - \frac{1}{273+T_C} \right) \right]}$$

where:

TAF = acceleration factor due to temperature, unitless

$E_a$  = activation energy, 1.4 eV

k = Boltzmann's constant, 8.617E-5 eV/K

$T_A$  = application temperature, °C

$T_C$  = category temperature, °C

$$AF = VAF * TAF$$

where:

AF = acceleration factor, unitless

TAF = acceleration factor due to temperature, unitless

VAF = acceleration factor due to voltage, unitless

$$Life_{U_A, T_A} = Life_{U_C, T_C} * AF$$

where:

$Life_{U_A, T_A}$  = guaranteed life application voltage and temperature, years

$Life_{U_C, T_C}$  = guaranteed life category voltage and temperature, years

AF = acceleration factor, unitless

### Terms:

Category voltage,  $U_C$ : maximum recommended peak DC operating voltage for continuous operation at the category temperature,  $T_C$

Rated voltage,  $U_R$ : maximum recommended peak DC operating voltage for continuous operation up to the rated temperature,  $T_R$

Category temperature,  $T_C$ : maximum recommended operating temperature. Voltage derating may be required at  $T_C$

Rated temperature,  $T_R$ : maximum recommended operating temperature without voltage derating.  $T_R$  is equal to or lower than  $T_C$

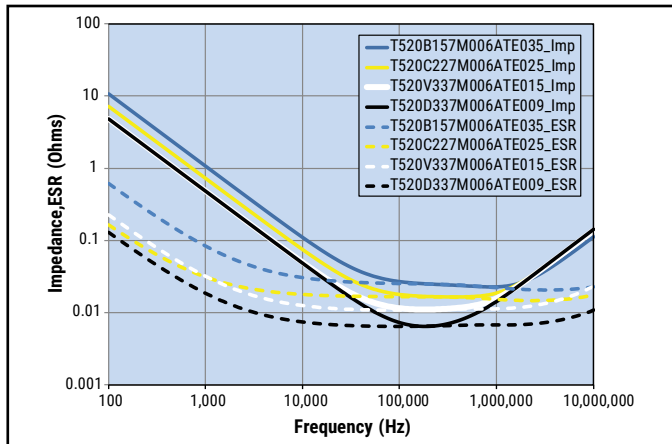
**Reliability Table 1 – Common temperature range classifications**

| 85°C ( $T_R$ ) /<br>85°C ( $T_C$ )   | Rated Voltage ( $U_R$ )    | 2.5 | 4.0 | 6.3 | 8.0 | 10.0 | 12.5 | 16.0 | 20.0 | 25.0 | 35.0 | 50.0 | 63.0 | 75.0 |
|--------------------------------------|----------------------------|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|
|                                      | Category Voltage ( $U_C$ ) | 2.5 | 4.0 | 6.3 | 8.0 | 10.0 | 12.5 | 16.0 | 20.0 | 25.0 | 35.0 | 50.0 | 63.0 | 75.0 |
| 105°C ( $T_R$ ) /<br>105°C ( $T_C$ ) | Rated Voltage ( $T_R$ )    | 2.5 | 4.0 | 6.3 | 8.0 | 10.0 | 12.5 | 16.0 | 20.0 | 25.0 | 35.0 | 50.0 | 63.0 | 75.0 |
|                                      | Category Voltage ( $U_C$ ) | 2.5 | 4.0 | 6.3 | 8.0 | 10.0 | 12.5 | 16.0 | 20.0 | 25.0 | 35.0 | 50.0 | 63.0 | 75.0 |
| 105°C ( $T_R$ ) /<br>125°C ( $T_C$ ) | Rated Voltage ( $T_R$ )    | 2.5 | 4.0 | 6.3 | 8.0 | 10.0 | 12.5 | 16.0 | 20.0 | 25.0 | 35.0 | 50.0 | 63.0 | 75.0 |
|                                      | Category Voltage ( $U_C$ ) | 1.7 | 2.7 | 4.2 | 5.4 | 6.7  | 8.4  | 10.7 | 13.4 | 16.8 | 23.5 | 33.5 | 42.2 | 50.3 |

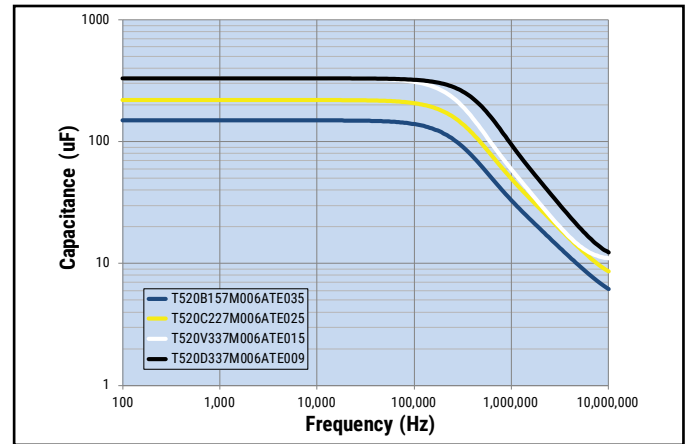
## Electrical Characteristics

### T520 Standard (2 V – 10 V)

ESR vs. Frequency

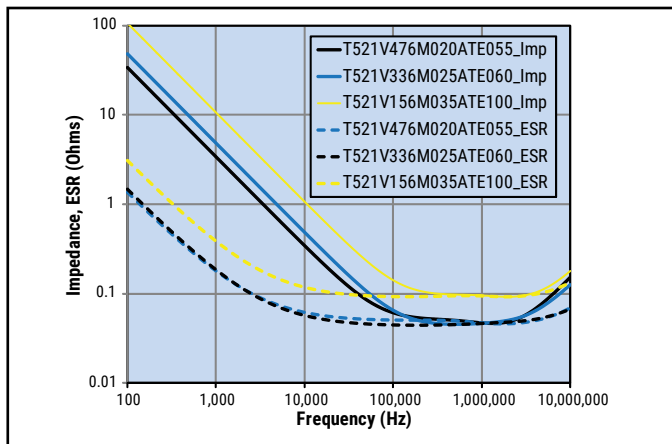


Capacitance vs. Frequency

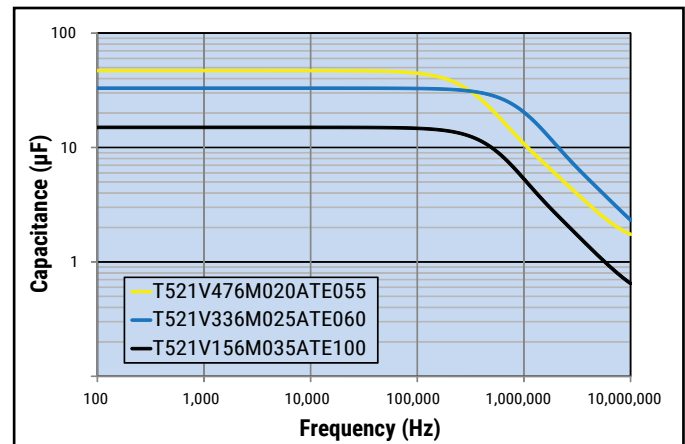


### T521 High Voltage (12 V – 75 V)

ESR vs. Frequency

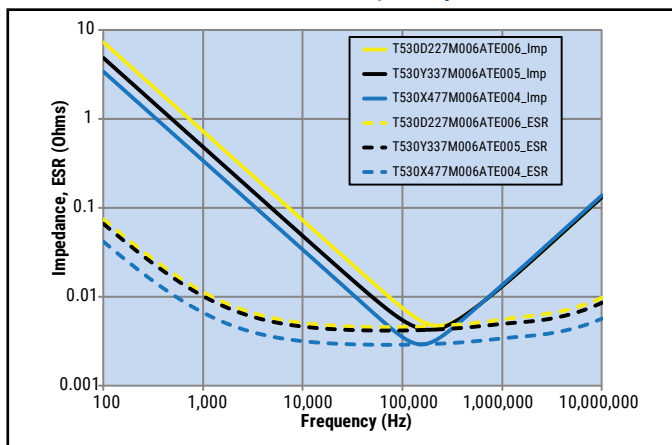


Capacitance vs. Frequency

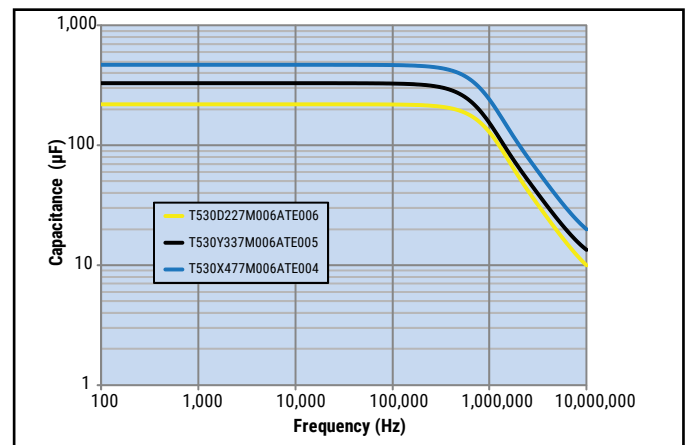


### T530 High Cap/Low ESR (2 V – 10 V)

ESR vs. Frequency



Capacitance vs. Frequency

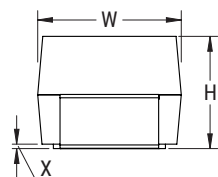


## Dimensions – Millimeters (Inches)

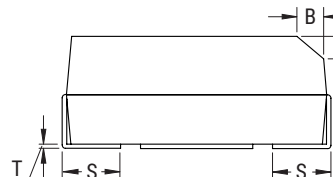
Metric will govern

### T520/T521/T525/T530

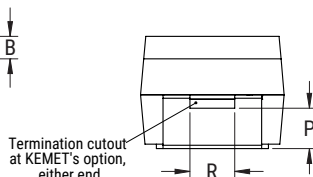
CATHODE (-) END VIEW



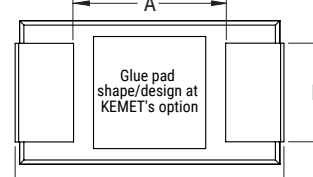
SIDE VIEW



ANODE (+) END VIEW



BOTTOM VIEW



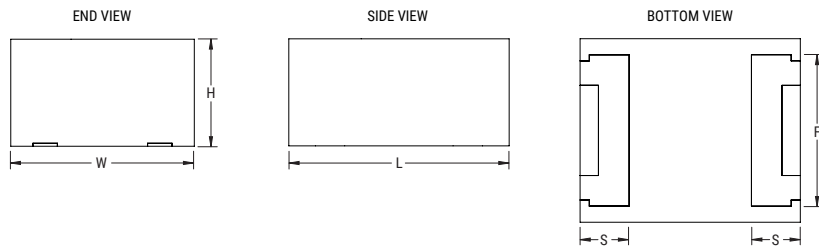
| Case Size |         | Component Dimensions     |                          |                            |                                            |                                                            |                         |                            |                |                |                 |             |                      |
|-----------|---------|--------------------------|--------------------------|----------------------------|--------------------------------------------|------------------------------------------------------------|-------------------------|----------------------------|----------------|----------------|-----------------|-------------|----------------------|
| KEMET     | EIA     | L                        | W                        | H                          | F<br>±0.1 ±(0.004)                         | S<br>±0.3 ±(0.012)<br>S1 ±0.4 (0.0157)<br>S2 ±0.2 (0.00)   | B ±0.15<br>(Ref) ±0.006 | X<br>(Ref)                 | P<br>(Ref)     | R<br>(Ref)     | T<br>(Ref)      | A<br>(Min)  | Total Weight<br>(mg) |
| A         | 3216-18 | 3.2±0.2<br>(0.126±0.008) | 1.6±0.2<br>(0.063±0.008) | 1.6±0.2<br>(0.063±0.008)   | 1.2<br>(0.047)                             | 0.80<br>(0.032)                                            | N/A                     | 0.10±0.10<br>(0.004±0.004) | 0.4<br>(0.016) | 0.4<br>(0.016) | 0.13<br>(0.005) | 1.2 (0.047) | 53                   |
| B         | 3528-21 | 3.5±0.2<br>(0.138±0.008) | 2.8±0.2<br>(0.110±0.008) | 1.9±0.2<br>(0.075±0.008)   | 2.2<br>(0.087)                             | 0.80<br>(0.032)                                            | 0.4<br>(0.016)          | 0.10±0.10<br>(0.004±0.004) | 0.5<br>(0.020) | 1.0<br>(0.039) | 0.13<br>(0.005) | 1.9 (0.075) | 95                   |
| C         | 6032-28 | 6.0±0.3<br>(0.236±0.012) | 3.2±0.3<br>(0.126±0.012) | 2.5±0.3<br>(0.098±0.012)   | 2.2<br>(0.087)                             | 1.30<br>(0.051)                                            | 0.5<br>(0.020)          | 0.10±0.10<br>(0.004±0.004) | 0.9<br>(0.035) | 1.0<br>(0.039) | 0.13<br>(0.005) | 2.9 (0.114) | 184                  |
| D         | 7343-31 | 7.3±0.3<br>(0.287±0.012) | 4.3±0.3<br>(0.169±0.012) | 2.8±0.3<br>(0.110±0.012)   | 2.4<br>(0.094)                             | 1.30<br>(0.051)                                            | 0.5<br>(0.020)          | 0.10±0.10<br>(0.004±0.004) | 0.9<br>(0.035) | 1.0<br>(0.039) | 0.13<br>(0.005) | 3.6 (0.142) | 435                  |
| H         | 7360-20 | 7.3±0.3<br>(0.287±0.012) | 6.0±0.3<br>(0.236±0.012) | 1.9±0.1<br>(0.075±0.004)   | 4.1<br>(0.161)                             | 1.3<br>(0.051)                                             | N/A                     | 0.10±0.10<br>(0.004±0.004) | N/A            | N/A            | 0.13<br>(0.005) | 3.3 (0.130) | 385                  |
| J         | 7360-15 | 7.3±0.3<br>(0.287±0.012) | 6.0±0.3<br>(0.236±0.012) | 1.5 (0.059)<br>Maximum     | 4.1<br>(0.161)                             | 1.3<br>(0.051)                                             | N/A                     | 0.10±0.10<br>(0.004±0.004) | N/A            | N/A            | N/A             | 3.3 (0.130) | 263                  |
| L         | 6032-19 | 6.0±0.3<br>(0.236±0.012) | 3.2±0.2<br>(0.110±0.008) | 1.8±0.1<br>(0.071±0.004)   | 2.2<br>(0.087)                             | 1.3<br>(0.051)                                             | N/A                     | 0.05<br>(0.002)            | N/A            | N/A            | 0.13<br>(0.005) | 2.5 (0.098) | 187                  |
| M         | 3528-15 | 3.5±0.2<br>(0.138±0.008) | 2.8±0.2<br>(0.110±0.008) | 1.4±0.1<br>(0.055±0.004)   | 2.2<br>(0.087)                             | 0.8<br>(0.031)                                             | N/A                     | 0.05<br>(0.002)            | N/A            | N/A            | 0.13<br>(0.005) | 1.1 (0.043) | 98                   |
| Q         | 7343-12 | 7.3±0.3<br>(0.287±0.012) | 4.3±0.3<br>(0.169±0.012) | 1.1±0.1<br>(0.043±0.004)   | 2.4<br>(0.094)                             | 1.3<br>(0.051)                                             | N/A                     | 0.05<br>(0.002)            | N/A            | N/A            | 0.13<br>(0.005) | 3.8 (0.150) | 170                  |
| T         | 3528-12 | 3.5±0.2<br>(0.138±0.008) | 2.8±0.2<br>(0.110±0.008) | 1.1±0.1<br>(0.043±0.004)   | 2.2<br>(0.087)                             | 0.80<br>(0.032)                                            | N/A                     | 0.05<br>(0.002)            | N/A            | N/A            | 0.13<br>(0.005) | 1.9 (0.075) | 55                   |
| U         | 6032-15 | 6.0±0.3<br>(0.236±0.012) | 3.2±0.3<br>(0.126±0.012) | 1.4±0.1<br>(0.055±0.004)   | 2.2<br>(0.087)                             | 1.30<br>(0.051)                                            | N/A                     | 0.05<br>(0.002)            | N/A            | N/A            | 0.13<br>(0.005) | 2.9 (0.114) | 117                  |
| V         | 7343-19 | 7.3±0.3<br>(0.287±0.012) | 4.3±0.3<br>(0.169±0.012) | 1.8±0.1 *<br>(0.071±0.004) | 2.4<br>(0.094)                             | 1.30<br>(0.051)                                            | N/A                     | 0.05<br>(0.002)            | N/A            | N/A            | 0.13<br>(0.005) | 3.6 (0.142) | 274                  |
| W         | 7343-15 | 7.3±0.3<br>(0.287±0.012) | 4.3±0.3<br>(0.169±0.012) | 1.4±0.1<br>(0.055±0.004)   | 2.4 (0.094)<br>2.8±0.2<br>(0.110±0.0079)** | 1.30 (0.051)<br>S1 = 5.0 (0.197) **<br>S2 = 1.3 (0.051) ** | N/A                     | 0.05<br>(0.002)            | N/A            | N/A            | 0.13<br>(0.005) | 3.6 (0.142) | 223                  |
| X         | 7343-43 | 7.3±0.3<br>(0.287±0.012) | 4.3±0.3<br>(0.169±0.012) | 4.0±0.3<br>(0.157±0.012)   | 2.4<br>(0.094)                             | 1.30<br>(0.051)                                            | 0.5<br>(0.020)          | 0.10±0.10<br>(0.004±0.004) | 1.7<br>(0.067) | 1.0 (0.039)    | 0.13<br>(0.005) | 3.6 (0.142) | 554                  |
| Y         | 7343-40 | 7.3±0.3<br>(0.287±0.012) | 4.3±0.3<br>(0.169±0.012) | 3.8±0.2<br>(0.150±0.008)   | 2.4<br>(0.094)                             | 1.3<br>(0.051)                                             | 0.5<br>(0.020)          | 0.10±0.10<br>(0.004±0.004) | 1.7<br>(0.067) | 1.0<br>(0.039) | 0.13<br>(0.005) | 3.8 (0.150) | 494                  |

\* Height tolerance is ±0.2 for V case T521 only

\*\* S1 and S2 is for T528 series only

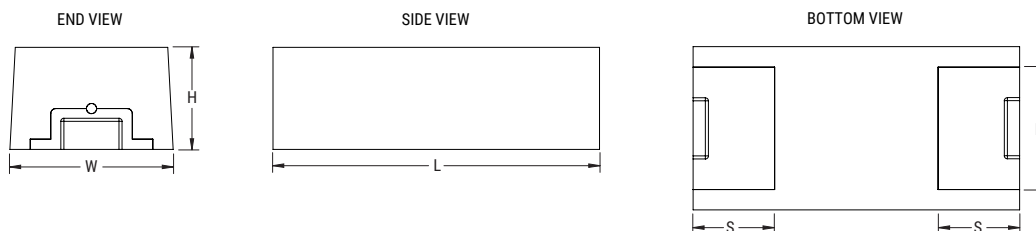
## Dimensions – Millimeters cont'd

### T523



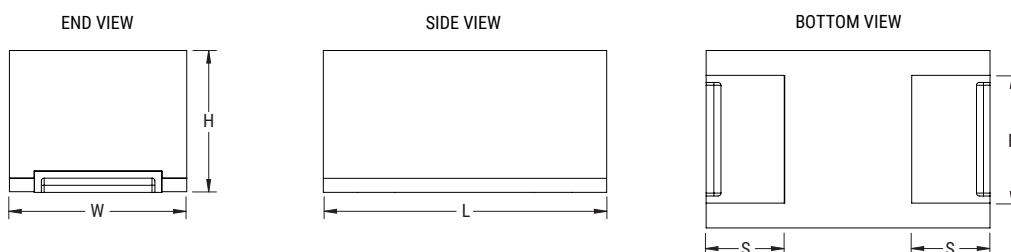
| KEMET | EIA     | L                        | W                        | H                        | F ±0.1<br>(±0.004) | S ±0.3<br>(±0.012) | Total Weight<br>(mg) |
|-------|---------|--------------------------|--------------------------|--------------------------|--------------------|--------------------|----------------------|
| W     | 7343-15 | 7.3±0.3<br>(0.287±0.012) | 4.3±0.3<br>(0.169±0.012) | 1.4±0.1<br>(0.055±0.004) | 2.4<br>(0.094)     | 1.3<br>(0.051)     | 223                  |
| J     | 7360-15 | 7.3±0.3<br>(0.287±0.012) | 6.0±0.3<br>(0.236±0.012) | 1.4±0.1<br>(0.055±0.004) | 4.45<br>(0.175)    | 1.6<br>(0.063)     | 263                  |
| V     | 7343-20 | 7.3±0.3<br>(0.287±0.012) | 4.3±0.3<br>(0.169±0.012) | 1.9±0.1<br>(0.075±0.004) | 2.4<br>(0.094)     | 1.3<br>(0.051)     | 274                  |
| H     | 7360-20 | 7.3±0.3<br>(0.287±0.012) | 6.0±0.3<br>(0.236±0.012) | 1.9±0.1<br>(0.075±0.004) | 4.45<br>(0.175)    | 1.6<br>(0.063)     | 385                  |

### T527



| Case Size |         | Component Dimensions |         |         |         |         | Weight |
|-----------|---------|----------------------|---------|---------|---------|---------|--------|
| KEMET     | EIA     | L                    | W       | H       | F       | S       | (mg)   |
| I         | 3216-10 | 3.2±0.2              | 1.6±0.2 | 0.9±0.1 | 1.2±0.1 | 0.8±0.2 | 70     |

### T529



| Case Size |         | Component Dimensions |          |             |         |          | Weight |
|-----------|---------|----------------------|----------|-------------|---------|----------|--------|
| KEMET     | EIA     | L                    | W        | H           | F       | S        | (mg)   |
| P         | 2012-10 | 2.0±0.1              | 1.25±0.1 | 1.0 maximum | 0.9±0.1 | 0.55±0.1 | 11.4   |
| I         | 3216-10 | 3.2±0.2              | 1.6±0.2  | 1.0 maximum | 1.2±0.1 | 0.8±0.1  | 70     |

**Table 1 – Ratings & Part Number Reference**

| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |
|---------------|-------------------|-------------------------|------------------------------|----------------------------------|--------------------------|----------------------------|----------------------------------|---------------------|------------------------|
| VDC at 105°C  | μF                | KEMET/EIA               | (See below for part options) | μA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| 2             | 470               | V/7343-19               | T520V477M002A(1)E040         | 94                               | 10                       | 40                         | 2200                             | 3                   | 105                    |
| 2.5           | 47                | A/3216-18               | T520A476M2R5A(1)E090         | 11.75                            | 8                        | 90                         | 1100                             | 3                   | 105                    |
| 2.5           | 68                | A/3216-18               | T520A686M2R5A(1)E070         | 17                               | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 2.5           | 68                | A/3216-18               | T520A686M2R5A(1)E080         | 17                               | 8                        | 80                         | 1200                             | 3                   | 105                    |
| 2.5           | 100               | T/3528-12               | T520T107M2R5A(1)E040         | 25                               | 8                        | 40                         | 1600                             | 3                   | 105                    |
| 2.5           | 100               | T/3528-12               | T520T107M2R5A(1)E070         | 25                               | 8                        | 70                         | 1200                             | 3                   | 105                    |
| 2.5           | 100               | T/3528-12               | T525T107M2R5A(1)E080         | 25                               | 10                       | 80                         | 1100                             | 3                   | 125                    |
| 2.5           | 100               | B/3528-21               | T520B107M2R5A(1)E025         | 25                               | 8                        | 25                         | 2300                             | 3                   | 105                    |
| 2.5           | 100               | B/3528-21               | T520B107M2R5A(1)E035         | 25                               | 8                        | 35                         | 1900                             | 3                   | 105                    |
| 2.5           | 100               | B/3528-21               | T520B107M2R5A(1)E040         | 25                               | 8                        | 40                         | 1800                             | 3                   | 105                    |
| 2.5           | 100               | B/3528-21               | T520B107M2R5A(1)E070         | 25                               | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 2.5           | 150               | U/6032-15               | T520U157M2R5A(1)E055         | 37.5                             | 8                        | 55                         | 1600                             | 3                   | 105                    |
| 2.5           | 220               | A/3216-18               | T520A227M2R5A(1)E025         | 55                               | 8                        | 25                         | 1732                             | 3                   | 105                    |
| 2.5           | 220               | A/3216-18               | T520A227M2R5A(1)E035         | 55                               | 8                        | 35                         | 1500                             | 3                   | 105                    |
| 2.5           | 220               | B/3528-21               | T520B227M2R5A(1)E015         | 55                               | 8                        | 15                         | 2900                             | 3                   | 105                    |
| 2.5           | 220               | B/3528-21               | T520B227M2R5A(1)E018         | 55                               | 8                        | 18                         | 2700                             | 3                   | 105                    |
| 2.5           | 220               | B/3528-21               | T520B227M2R5A(1)E021         | 55                               | 8                        | 21                         | 2500                             | 3                   | 105                    |
| 2.5           | 220               | B/3528-21               | T520B227M2R5A(1)E025         | 55                               | 8                        | 25                         | 2300                             | 3                   | 105                    |
| 2.5           | 220               | B/3528-21               | T520B227M2R5A(1)E030         | 55                               | 8                        | 30                         | 2100                             | 3                   | 105                    |
| 2.5           | 220               | B/3528-21               | T520B227M2R5A(1)E035         | 55                               | 8                        | 35                         | 1900                             | 3                   | 105                    |
| 2.5           | 220               | B/3528-21               | T520B227M2R5A(1)E055         | 55                               | 8                        | 55                         | 1500                             | 3                   | 105                    |
| 2.5           | 220               | B/3528-21               | T520B227M2R5A(1)E070         | 55                               | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 2.5           | 220               | T/3528-12               | T520T227M2R5A(1)E070         | 55                               | 10                       | 70                         | 1200                             | 3                   | 105                    |
| 2.5           | 220               | U/6032-15               | T520U227M2R5A(1)E055         | 55                               | 8                        | 55                         | 1600                             | 3                   | 105                    |
| 2.5           | 220               | C/6032-28               | T520C227M2R5A(1)E025         | 55                               | 8                        | 25                         | 2600                             | 3                   | 105                    |
| 2.5           | 220               | C/6032-28               | T520C227M2R5A(1)E045         | 55                               | 8                        | 45                         | 1900                             | 3                   | 105                    |
| 2.5           | 220               | W/7343-15               | T520W227M2R5A(1)E025         | 55                               | 10                       | 25                         | 2700                             | 3                   | 105                    |
| 2.5           | 220               | V/7343-19               | T520V227M2R5A(1)E006         | 55                               | 10                       | 6                          | 5600                             | 3                   | 105                    |
| 2.5           | 220               | V/7343-19               | T520V227M2R5A(1)E007         | 55                               | 10                       | 7                          | 5200                             | 3                   | 105                    |
| 2.5           | 220               | V/7343-19               | T520V227M2R5A(1)E009         | 55                               | 10                       | 9                          | 4600                             | 3                   | 105                    |
| 2.5           | 220               | V/7343-19               | T520V227M2R5A(1)E012         | 55                               | 10                       | 12                         | 3900                             | 3                   | 105                    |
| 2.5           | 220               | V/7343-19               | T520V227M2R5A(1)E015         | 55                               | 10                       | 15                         | 3500                             | 3                   | 105                    |
| 2.5           | 220               | V/7343-19               | T520V227M2R5A(1)E025         | 55                               | 10                       | 25                         | 2700                             | 3                   | 105                    |
| 2.5           | 220               | V/7343-19               | T520V227M2R5A(1)E045         | 55                               | 10                       | 45                         | 2000                             | 3                   | 105                    |
| 2.5           | 220               | D/7343-31               | T520D227M2R5A(1)E007         | 55                               | 10                       | 7                          | 5700                             | 3                   | 105                    |
| 2.5           | 220               | D/7343-31               | T520D227M2R5A(1)E040         | 55                               | 10                       | 40                         | 2400                             | 3                   | 105                    |
| 2.5           | 330               | B/3528-21               | T520B337M2R5A(1)E009         | 82.5                             | 8                        | 9                          | 3073                             | 3                   | 105                    |
| 2.5           | 330               | B/3528-21               | T520B337M2R5A(1)E012         | 83                               | 8                        | 12                         | 2700                             | 3                   | 105                    |
| 2.5           | 330               | B/3528-21               | T520B337M2R5A(1)E015         | 82.5                             | 8                        | 15                         | 2900                             | 3                   | 105                    |
| 2.5           | 330               | B/3528-21               | T520B337M2R5A(1)E018         | 82.5                             | 8                        | 18                         | 2700                             | 3                   | 105                    |
| 2.5           | 330               | B/3528-21               | T520B337M2R5A(1)E035         | 82.5                             | 8                        | 35                         | 1900                             | 3                   | 105                    |
| 2.5           | 330               | B/3528-21               | T520B337M2R5A(1)E045         | 82.5                             | 8                        | 45                         | 1700                             | 3                   | 105                    |
| 2.5           | 330               | B/3528-21               | T520B337M2R5A(1)E070         | 82.5                             | 8                        | 70                         | 1300                             | 3                   | 105                    |
| VDC at 105°C  | μF                | KEMET/EIA               | (See below for part options) | μA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |

(1) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, H = Standard Solder coated (SnPb 5% Pb minimum), N = Non-Magnetic 100% Tin (Sn), M = Non-Magnetic (SnPb). Refer to Ordering Information for additional detail.

(2) To complete KEMET part number, insert M for ± 20% or K for ± 10%. Designates Capacitance tolerance.

Higher voltage ratings and tighter ESR may be substituted within the same size at KEMET's option. Voltage substitutions will be marked with the higher voltage rating. Substitutions can include better than series.

**Part numbers marked in blue font are not recommended for new designs. Please use the T521 series instead.**

**Part numbers marked in orange font are not recommended for new designs. Please contact your KEMET representative for a replacement part.**

^ Denotes the large reel (13") is not available.

Refer to Ordering Information for additional detail.

**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |
|---------------|-------------------|-------------------------|------------------------------|----------------------------------|--------------------------|----------------------------|----------------------------------|---------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| 2.5           | 330               | C/6032-28               | T520C337M2R5A(1)E015         | 82.5                             | 8                        | 15                         | 3300                             | 3                   | 105                    |
| 2.5           | 330               | C/6032-28               | T520C337M2R5A(1)E018         | 82.5                             | 8                        | 18                         | 3000                             | 3                   | 105                    |
| 2.5           | 330               | C/6032-28               | T520C337M2R5A(1)E025         | 82.5                             | 8                        | 25                         | 2600                             | 3                   | 105                    |
| 2.5           | 330               | C/6032-28               | T520C337M2R5A(1)E045         | 82.5                             | 8                        | 45                         | 1900                             | 3                   | 105                    |
| 2.5           | 330               | L/6032-19               | T520L337M2R5A(1)E009         | 82.5                             | 8                        | 9                          | 4100                             | 3                   | 105                    |
| 2.5           | 330               | L/6032-19               | T520L337M2R5A(1)E012         | 82.5                             | 8                        | 12                         | 3500                             | 3                   | 105                    |
| 2.5           | 330               | L/6032-19               | T520L337M2R5A(1)E025         | 82.5                             | 8                        | 25                         | 2400                             | 3                   | 105                    |
| 2.5           | 330               | W/7343-15               | T520W337M2R5A(1)E015         | 82.5                             | 10                       | 15                         | 3500                             | 3                   | 105                    |
| 2.5           | 330               | W/7343-15               | T520W337M2R5A(1)E025         | 82.5                             | 10                       | 25                         | 2700                             | 3                   | 105                    |
| 2.5           | 330               | W/7343-15               | T520W337M2R5A(1)E040         | 82.5                             | 10                       | 40                         | 2100                             | 3                   | 105                    |
| 2.5           | 330               | V/7343-19               | T520V337M2R5A(1)E006         | 82.5                             | 10                       | 6                          | 5600                             | 3                   | 105                    |
| 2.5           | 330               | V/7343-19               | T520V337M2R5A(1)E007         | 82.5                             | 10                       | 7                          | 5200                             | 3                   | 105                    |
| 2.5           | 330               | V/7343-19               | T520V337M2R5A(1)E009         | 82.5                             | 10                       | 9                          | 4600                             | 3                   | 105                    |
| 2.5           | 330               | V/7343-19               | T520V337M2R5A(1)E012         | 82.5                             | 10                       | 12                         | 3900                             | 3                   | 105                    |
| 2.5           | 330               | V/7343-19               | T520V337M2R5A(1)E015         | 82.5                             | 10                       | 15                         | 3500                             | 3                   | 105                    |
| 2.5           | 330               | V/7343-19               | T520V337M2R5A(1)E018         | 82.5                             | 10                       | 18                         | 3200                             | 3                   | 105                    |
| 2.5           | 330               | V/7343-19               | T520V337M2R5A(1)E025         | 82.5                             | 10                       | 25                         | 2700                             | 3                   | 105                    |
| 2.5           | 330               | V/7343-19               | T520V337M2R5A(1)E040         | 82.5                             | 10                       | 40                         | 2200                             | 3                   | 105                    |
| 2.5           | 330               | D/7343-31               | T520D337M2R5A(1)E006         | 82.5                             | 10                       | 6                          | 6100                             | 3                   | 105                    |
| 2.5           | 330               | D/7343-31               | T520D337M2R5A(1)E007         | 82.5                             | 10                       | 7                          | 5700                             | 3                   | 105                    |
| 2.5           | 330               | D/7343-31               | T525D337M2R5A(1)E025         | 82.5                             | 10                       | 25                         | 3000                             | 3                   | 125                    |
| 2.5           | 470               | V/7343-19               | T520V477M2R5A(1)E006         | 117.5                            | 10                       | 6                          | 5600                             | 3                   | 105                    |
| 2.5           | 470               | V/7343-19               | T520V477M2R5A(1)E007         | 117.5                            | 10                       | 7                          | 5200                             | 3                   | 105                    |
| 2.5           | 470               | V/7343-19               | T520V477M2R5A(1)E009         | 117.5                            | 10                       | 9                          | 4600                             | 3                   | 105                    |
| 2.5           | 470               | V/7343-19               | T520V477M2R5A(1)E012         | 117.5                            | 10                       | 12                         | 3900                             | 3                   | 105                    |
| 2.5           | 470               | V/7343-19               | T520V477M2R5A(1)E015         | 117.5                            | 10                       | 15                         | 3500                             | 3                   | 105                    |
| 2.5           | 470               | V/7343-19               | T520V477M2R5A(1)E018         | 117.5                            | 10                       | 18                         | 3200                             | 3                   | 105                    |
| 2.5           | 470               | C/6032-28               | T520C477M2R5A(1)E025         | 117.5                            | 8                        | 25                         | 2600                             | 3                   | 105                    |
| 2.5           | 470               | C/6032-28               | T520C477M2R5A(1)E045         | 117.5                            | 8                        | 45                         | 1900                             | 3                   | 105                    |
| 2.5           | 470               | D/7343-31               | T530D477M2R5A(1)E005         | 117.5                            | 8                        | 5                          | 7100                             | 3                   | 125                    |
| 2.5           | 470               | D/7343-31               | T520D477M2R5A(1)E006         | 117.5                            | 10                       | 6                          | 6100                             | 3                   | 105                    |
| 2.5           | 470               | D/7343-31               | T530D477M2R5A(1)E006         | 117.5                            | 8                        | 6                          | 6500                             | 3                   | 125                    |
| 2.5           | 470               | D/7343-31               | T520D477M2R5A(1)E007         | 117.5                            | 10                       | 7                          | 5700                             | 3                   | 105                    |
| 2.5           | 470               | D/7343-31               | T520D477M2R5A(1)E009         | 117.5                            | 10                       | 9                          | 5000                             | 3                   | 105                    |
| 2.5           | 470               | D/7343-31               | T530D477M2R5A(1)E010         | 117.5                            | 8                        | 10                         | 5000                             | 3                   | 125                    |
| 2.5           | 470               | D/7343-31               | T525D477M2R5A(1)E025         | 117.5                            | 10                       | 25                         | 3000                             | 3                   | 125                    |
| 2.5           | 560               | D/7343-31               | T530D567M2R5A(1)E005         | 140                              | 8                        | 5                          | 7100                             | 3                   | 125                    |
| 2.5           | 680               | D/7343-31               | T530D687M2R5A(1)E006         | 170                              | 8                        | 6                          | 6500                             | 3                   | 125                    |
| 2.5           | 680               | D/7343-31               | T530D687M2R5A(1)E007         | 170                              | 8                        | 7                          | 6000                             | 3                   | 125                    |
| 2.5           | 680               | D/7343-31               | T520D687M2R5A(1)E010         | 170                              | 10                       | 10                         | 4700                             | 3                   | 105                    |
| 2.5           | 680               | D/7343-31               | T530D687M2R5A(1)E010         | 170                              | 8                        | 10                         | 5000                             | 3                   | 125                    |
| 2.5           | 680               | D/7343-31               | T520D687M2R5A(1)E015         | 170                              | 10                       | 15                         | 3900                             | 3                   | 105                    |
| 2.5           | 680               | D/7343-31               | T525D687M2R5A(1)E025         | 170                              | 10                       | 25                         | 3000                             | 3                   | 125                    |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |

(1) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, H = Standard Solder coated (SnPb 5% Pb minimum), N = Non-Magnetic 100% Tin (Sn), M = Non-Magnetic (SnPb). Refer to Ordering Information for additional detail.

(2) To complete KEMET part number, insert M for ± 20% or K for ± 10%. Designates Capacitance tolerance.

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^ Denotes the large reel (13") is not available.

Refer to Ordering Information for additional detail.

**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |
|---------------|-------------------|-------------------------|------------------------------|----------------------------------|--------------------------|----------------------------|----------------------------------|---------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| 2.5           | 680               | D/7343-31               | T520D687M2R5A(1)E040         | 170                              | 10                       | 40                         | 2400                             | 3                   | 105                    |
| 2.5           | 680               | Y/7343-40               | T530Y687M2R5A(1)E005         | 170                              | 8                        | 5                          | 7300                             | 3                   | 125                    |
| 2.5           | 680               | Y/7343-40               | T530Y687M2R5A(1)E006         | 170                              | 8                        | 6                          | 6600                             | 3                   | 125                    |
| 2.5           | 680               | Y/7343-40               | T530Y687M2R5A(1)E007         | 170                              | 8                        | 7                          | 6100                             | 3                   | 125                    |
| 2.5           | 680               | Y/7343-40               | T520Y687M2R5A(1)E015         | 170                              | 10                       | 15                         | 4000                             | 3                   | 105                    |
| 2.5           | 680               | Y/7343-40               | T520Y687M2R5A(1)E025         | 170                              | 10                       | 25                         | 3100                             | 3                   | 105                    |
| 2.5           | 680               | X/7343-43               | T530X687M2R5A(1)E006         | 170                              | 8                        | 6                          | 6700                             | 3                   | 125                    |
| 2.5           | 1000              | D/7343-31               | T520D108M2R5A(1)E4R5         | 250                              | 10                       | 4.5                        | 7100                             | 3                   | 105                    |
| 2.5           | 1000              | D/7343-31               | T520D108M2R5A(1)E006         | 250                              | 10                       | 6                          | 6100                             | 3                   | 105                    |
| 2.5           | 1000              | D/7343-31               | T520D108M2R5A(1)E007         | 250                              | 10                       | 7                          | 5700                             | 3                   | 105                    |
| 2.5           | 1000              | D/7343-31               | T520D108M2R5A(1)E009         | 250                              | 10                       | 9                          | 5000                             | 3                   | 105                    |
| 2.5           | 1000              | D/7343-31               | T520D108M2R5A(1)E010         | 250                              | 10                       | 10                         | 4700                             | 3                   | 105                    |
| 2.5           | 1000              | D/7343-31               | T520D108M2R5A(1)E015         | 250                              | 10                       | 15                         | 3900                             | 3                   | 105                    |
| 2.5           | 1000              | D/7343-31               | T520D108M2R5A(1)E030         | 250                              | 10                       | 30                         | 2700                             | 3                   | 105                    |
| 2.5           | 1000              | Y/7343-40               | T530Y108M2R5A(1)E005         | 250                              | 8                        | 5                          | 7300                             | 3                   | 125                    |
| 2.5           | 1000              | Y/7343-40               | T530Y108M2R5A(1)E006         | 250                              | 8                        | 6                          | 6600                             | 3                   | 125                    |
| 2.5           | 1000              | Y/7343-40               | T520Y108M2R5A(1)E010         | 250                              | 10                       | 10                         | 4900                             | 3                   | 105                    |
| 2.5           | 1000              | Y/7343-40               | T520Y108M2R5A(1)E015         | 250                              | 10                       | 15                         | 4000                             | 3                   | 105                    |
| 2.5           | 1000              | Y/7343-40               | T520Y108M2R5A(1)E025         | 250                              | 10                       | 25                         | 3100                             | 3                   | 105                    |
| 2.5           | 1000              | X/7343-43               | T530X108M2R5A(1)E004         | 250                              | 8                        | 4                          | 8200                             | 3                   | 125                    |
| 2.5           | 1000              | X/7343-43               | T530X108M2R5A(1)E005         | 250                              | 8                        | 5                          | 7300                             | 3                   | 125                    |
| 2.5           | 1000              | X/7343-43               | T530X108M2R5A(1)E006         | 250                              | 8                        | 6                          | 6700                             | 3                   | 125                    |
| 2.5           | 1000              | X/7343-43               | T520X108M2R5A(1)E010         | 250                              | 10                       | 10                         | 5000                             | 3                   | 105                    |
| 2.5           | 1500              | X/7343-43               | T530X158M2R5A(1)E005         | 375                              | 8                        | 5                          | 7300                             | 3                   | 125                    |
| 2.5           | 1500              | X/7343-43               | T520X158M2R5A(1)E015         | 375                              | 10                       | 15                         | 4100                             | 3                   | 105                    |
| 3             | 100               | B/3528-21               | T525B107M003A(1)E080         | 30                               | 8                        | 80                         | 1300                             | 3                   | 125                    |
| 3             | 100               | B/3528-21               | T520B107M003A(1)E025         | 30                               | 8                        | 25                         | 2300                             | 3                   | 105                    |
| 3             | 100               | B/3528-21               | T520B107M003A(1)E035         | 30                               | 8                        | 35                         | 1900                             | 3                   | 105                    |
| 3             | 100               | B/3528-21               | T520B107M003A(1)E040         | 30                               | 8                        | 40                         | 1800                             | 3                   | 105                    |
| 3             | 100               | B/3528-21               | T520B107M003A(1)E070         | 30                               | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 3             | 150               | B/3528-21               | T520B157M003A(1)E025         | 45                               | 8                        | 25                         | 2300                             | 3                   | 105                    |
| 3             | 150               | B/3528-21               | T520B157M003A(1)E035         | 45                               | 8                        | 35                         | 1900                             | 3                   | 105                    |
| 3             | 150               | B/3528-21               | T520B157M003A(1)E040         | 45                               | 8                        | 40                         | 1800                             | 3                   | 105                    |
| 3             | 150               | B/3528-21               | T520B157M003A(1)E070         | 45                               | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 3             | 150               | B/3528-21               | T525B157M003A(1)E080         | 45                               | 8                        | 80                         | 1300                             | 3                   | 125                    |
| 3             | 330               | V/7343-19               | T520V337M003A(1)E009         | 99                               | 10                       | 9                          | 4600                             | 3                   | 105                    |
| 3             | 330               | V/7343-19               | T520V337M003A(1)E012         | 99                               | 10                       | 12                         | 3900                             | 3                   | 105                    |
| 3             | 330               | V/7343-19               | T520V337M003A(1)E015         | 99                               | 10                       | 15                         | 3500                             | 3                   | 105                    |
| 3             | 330               | V/7343-19               | T520V337M003A(1)E025         | 99                               | 10                       | 25                         | 2700                             | 3                   | 105                    |
| 3             | 330               | D/7343-31               | T525D337M003A(1)E025         | 99                               | 10                       | 25                         | 3000                             | 3                   | 125                    |
| 3             | 470               | D/7343-31               | T530D477M003A(1)E010         | 141                              | 8                        | 10                         | 5000                             | 3                   | 125                    |
| 3             | 470               | D/7343-31               | T525D477M003A(1)E025         | 141                              | 10                       | 25                         | 3000                             | 3                   | 125                    |
| 3             | 680               | D/7343-31               | T530D687M003A(1)E010         | 204                              | 8                        | 10                         | 5000                             | 3                   | 125                    |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |

(1) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, H = Standard Solder coated (SnPb 5% Pb minimum), N = Non-Magnetic 100% Tin (Sn), M = Non-Magnetic (SnPb). Refer to Ordering Information for additional detail.

(2) To complete KEMET part number, insert M for ± 20% or K for ± 10%. Designates Capacitance tolerance.

Higher voltage ratings and tighter ESR may be substituted within the same size at KEMET's option. Voltage substitutions will be marked with the higher voltage rating. Substitutions can include better than series.

**Part numbers marked in blue font are not recommended for new designs. Please use the T521 series instead.**

**Part numbers marked in orange font are not recommended for new designs. Please contact your KEMET representative for a replacement part.**

^ Denotes the large reel (13") is not available.

Refer to Ordering Information for additional detail.

**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |
|---------------|-------------------|-------------------------|------------------------------|----------------------------------|--------------------------|----------------------------|----------------------------------|---------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| 3             | 680               | D/7343-31               | T520D687M003A(1)E015         | 204                              | 10                       | 15                         | 3900                             | 3                   | 105                    |
| 3             | 680               | D/7343-31               | T525D687M003A(1)E025         | 204                              | 10                       | 25                         | 3000                             | 3                   | 125                    |
| 3             | 680               | D/7343-31               | T520D687M003A(1)E040         | 204                              | 10                       | 40                         | 2400                             | 3                   | 105                    |
| 3             | 1000              | X/7343-43               | T530X108M003A(1)E010         | 300                              | 8                        | 10                         | 5200                             | 3                   | 125                    |
| 3             | 1000              | X/7343-43               | T520X108M003A(1)E015         | 300                              | 10                       | 15                         | 4100                             | 3                   | 105                    |
| 3             | 1000              | X/7343-43               | T520X108M003A(1)E030         | 300                              | 10                       | 30                         | 2900                             | 3                   | 105                    |
| 3             | 1500              | X/7343-43               | T530X158M003A(1)E008         | 450                              | 8                        | 8                          | 5800                             | 3                   | 125                    |
| 4             | 15                | T/3528-12               | T520T156M004A(1)E100         | 6                                | 8                        | 100                        | 1000                             | 3                   | 105                    |
| 4             | 33                | A/3216-18               | T520A336M004A(1)E070         | 13.2                             | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 4             | 33                | A/3216-18               | T520A336M004A(1)E080         | 13.2                             | 8                        | 80                         | 1200                             | 3                   | 105                    |
| 4             | 47                | A/3216-18               | T520A476M004A(1)E070         | 18.8                             | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 4             | 47                | A/3216-18               | T520A476M004A(1)E080         | 18.8                             | 8                        | 80                         | 1200                             | 3                   | 105                    |
| 4             | 47                | T/3528-12               | T520T476M004A(1)E070         | 18.8                             | 8                        | 70                         | 1200                             | 3                   | 105                    |
| 4             | 68                | A/3216-18               | T520A686M004A(1)E180         | 27                               | 8                        | 180                        | 800                              | 3                   | 105                    |
| 4             | 68                | T/3528-12               | T520T686M004A(1)E070         | 27.2                             | 8                        | 70                         | 1200                             | 3                   | 105                    |
| 4             | 68                | B/3528-21               | T520B686M004A(1)E025         | 27.2                             | 8                        | 25                         | 2300                             | 3                   | 105                    |
| 4             | 68                | B/3528-21               | T520B686M004A(1)E035         | 27.2                             | 8                        | 35                         | 1900                             | 3                   | 105                    |
| 4             | 68                | B/3528-21               | T520B686M004A(1)E040         | 27.2                             | 8                        | 40                         | 1800                             | 3                   | 105                    |
| 4             | 68                | B/3528-21               | T520B686M004A(1)E070         | 27.2                             | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 4             | 68                | B/3528-21               | T525B686M004A(1)E080         | 27.2                             | 8                        | 80                         | 1300                             | 3                   | 125                    |
| 4             | 68                | U/6032-15               | T520U686M004A(1)E055         | 27.2                             | 8                        | 55                         | 1600                             | 3                   | 105                    |
| 4             | 100               | I/3216-10               | T527I107M004ATE200           | 40                               | 8                        | 200                        | 775                              | 3                   | 105                    |
| 4             | 100               | A/3216-18               | T520A107M004A(1)E150         | 40                               | 8                        | 150                        | 900                              | 3                   | 105                    |
| 4             | 100               | A/3216-18               | T520A107M004A(1)E200         | 40                               | 8                        | 200                        | 700                              | 3                   | 105                    |
| 4             | 100               | T/3528-12               | T520T107M004A(1)E070         | 40                               | 8                        | 70                         | 1200                             | 3                   | 105                    |
| 4             | 100               | T/3528-12               | T520T107M004A(1)E150         | 40                               | 8                        | 150                        | 800                              | 3                   | 105                    |
| 4             | 100               | B/3528-21               | T520B107M004A(1)E025         | 40                               | 8                        | 25                         | 2300                             | 3                   | 105                    |
| 4             | 100               | B/3528-21               | T520B107M004A(1)E035         | 40                               | 8                        | 35                         | 1900                             | 3                   | 105                    |
| 4             | 100               | B/3528-21               | T520B107M004A(1)E040         | 40                               | 8                        | 40                         | 1800                             | 3                   | 105                    |
| 4             | 100               | B/3528-21               | T520B107M004A(1)E070         | 40                               | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 4             | 100               | B/3528-21               | T525B107M004A(1)E080         | 40                               | 8                        | 80                         | 1300                             | 3                   | 125                    |
| 4             | 100               | U/6032-15               | T520U107M004A(1)E055         | 40                               | 8                        | 55                         | 1600                             | 3                   | 105                    |
| 4             | 150               | B/3528-21               | T520B157M004A(1)E015         | 60                               | 8                        | 15                         | 2900                             | 3                   | 105                    |
| 4             | 150               | B/3528-21               | T520B157M004A(1)E018         | 60                               | 8                        | 18                         | 2700                             | 3                   | 105                    |
| 4             | 150               | B/3528-21               | T520B157M004A(1)E025         | 60                               | 8                        | 25                         | 2300                             | 3                   | 105                    |
| 4             | 150               | B/3528-21               | T520B157M004A(1)E030         | 60                               | 8                        | 30                         | 2100                             | 3                   | 105                    |
| 4             | 150               | B/3528-21               | T520B157M004A(1)E035         | 60                               | 8                        | 35                         | 1900                             | 3                   | 105                    |
| 4             | 150               | B/3528-21               | T520B157M004A(1)E040         | 60                               | 8                        | 40                         | 1800                             | 3                   | 105                    |
| 4             | 150               | B/3528-21               | T520B157M004A(1)E070         | 60                               | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 4             | 150               | U/6032-15               | T520U157M004A(1)E055         | 60                               | 8                        | 55                         | 1600                             | 3                   | 105                    |
| 4             | 150               | C/6032-28               | T520C157M004A(1)E015         | 60                               | 8                        | 15                         | 3300                             | 3                   | 105                    |
| 4             | 150               | C/6032-28               | T520C157M004A(1)E025         | 60                               | 8                        | 25                         | 2600                             | 3                   | 105                    |
| 4             | 150               | C/6032-28               | T520C157M004A(1)E045         | 60                               | 8                        | 45                         | 1900                             | 3                   | 105                    |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |

(1) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, H = Standard Solder coated (SnPb 5% Pb minimum), N = Non-Magnetic 100% Tin (Sn), M = Non-Magnetic (SnPb). Refer to Ordering Information for additional detail.

(2) To complete KEMET part number, insert M for ± 20% or K for ± 10%. Designates Capacitance tolerance.

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^ Denotes the large reel (13") is not available.

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**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |
|---------------|-------------------|-------------------------|------------------------------|----------------------------------|--------------------------|----------------------------|----------------------------------|---------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| 4             | 150               | C/6032-28               | T520C157M004A(1)E100         | 60                               | 8                        | 100                        | 1300                             | 3                   | 105                    |
| 4             | 150               | V/7343-19               | T520V157M004A(1)E007         | 60                               | 10                       | 7                          | 5200                             | 3                   | 105                    |
| 4             | 150               | V/7343-19               | T520V157M004A(1)E009         | 60                               | 10                       | 9                          | 4600                             | 3                   | 105                    |
| 4             | 150               | V/7343-19               | T520V157M004A(1)E012         | 60                               | 10                       | 12                         | 3900                             | 3                   | 105                    |
| 4             | 150               | V/7343-19               | T520V157M004A(1)E015         | 60                               | 10                       | 15                         | 3500                             | 3                   | 105                    |
| 4             | 150               | V/7343-19               | T520V157M004A(1)E025         | 60                               | 10                       | 25                         | 2700                             | 3                   | 105                    |
| 4             | 150               | D/7343-31               | T520D157M004A(1)E007         | 60                               | 10                       | 7                          | 5700                             | 3                   | 105                    |
| 4             | 220               | B/3528-21               | T520B227M004A(1)E035         | 88                               | 8                        | 35                         | 1900                             | 3                   | 105                    |
| 4             | 220               | B/3528-21               | T520B227M004A(1)E045         | 88                               | 8                        | 45                         | 1700                             | 3                   | 105                    |
| 4             | 220               | B/3528-21               | T520B227M004A(1)E070         | 88                               | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 4             | 220               | C/6032-28               | T520C227M004A(1)E015         | 88                               | 8                        | 15                         | 3300                             | 3                   | 105                    |
| 4             | 220               | C/6032-28               | T520C227M004A(1)E018         | 88                               | 8                        | 18                         | 3000                             | 3                   | 105                    |
| 4             | 220               | C/6032-28               | T520C227M004A(1)E025         | 88                               | 8                        | 25                         | 2600                             | 3                   | 105                    |
| 4             | 220               | C/6032-28               | T520C227M004A(1)E045         | 88                               | 8                        | 45                         | 1900                             | 3                   | 105                    |
| 4             | 220               | C/6032-28               | T520C227M004A(1)E055         | 88                               | 8                        | 55                         | 1700                             | 3                   | 105                    |
| 4             | 220               | L/6032-19               | T520L227M004A(1)E012         | 88                               | 8                        | 12                         | 3500                             | 3                   | 105                    |
| 4             | 220               | L/6032-19               | T520L227M004A(1)E025         | 88                               | 8                        | 25                         | 2400                             | 3                   | 105                    |
| 4             | 220               | W/7343-15               | T520W227M004A(1)E025         | 88                               | 10                       | 25                         | 2700                             | 3                   | 105                    |
| 4             | 220               | W/7343-15               | T520W227M004A(1)E040         | 88                               | 10                       | 40                         | 2100                             | 3                   | 105                    |
| 4             | 220               | V/7343-19               | T520V227M004A(1)E006         | 88                               | 10                       | 6                          | 5600                             | 3                   | 105                    |
| 4             | 220               | V/7343-19               | T520V227M004A(1)E007         | 88                               | 10                       | 7                          | 5200                             | 3                   | 105                    |
| 4             | 220               | V/7343-19               | T520V227M004A(1)E009         | 88                               | 10                       | 9                          | 4600                             | 3                   | 105                    |
| 4             | 220               | V/7343-19               | T520V227M004A(1)E012         | 88                               | 10                       | 12                         | 3900                             | 3                   | 105                    |
| 4             | 220               | V/7343-19               | T520V227M004A(1)E015         | 88                               | 10                       | 15                         | 3500                             | 3                   | 105                    |
| 4             | 220               | V/7343-19               | T520V227M004A(1)E018         | 88                               | 10                       | 18                         | 3200                             | 3                   | 105                    |
| 4             | 220               | V/7343-19               | T520V227M004A(1)E025         | 88                               | 10                       | 25                         | 2700                             | 3                   | 105                    |
| 4             | 220               | V/7343-19               | T520V227M004A(1)E040         | 88                               | 10                       | 40                         | 2200                             | 3                   | 105                    |
| 4             | 220               | V/7343-19               | T520V227M004A(1)E045         | 88                               | 10                       | 45                         | 2000                             | 3                   | 105                    |
| 4             | 220               | D/7343-31               | T520D227M004A(1)E006         | 88                               | 10                       | 6                          | 6100                             | 3                   | 105                    |
| 4             | 220               | D/7343-31               | T520D227M004A(1)E007         | 88                               | 10                       | 7                          | 5700                             | 3                   | 105                    |
| 4             | 220               | D/7343-31               | T520D227M004A(1)E012         | 88                               | 10                       | 12                         | 4300                             | 3                   | 105                    |
| 4             | 220               | D/7343-31               | T525D227M004A(1)E025         | 88                               | 10                       | 25                         | 3000                             | 3                   | 125                    |
| 4             | 220               | D/7343-31               | T520D227M004A(1)E065         | 88                               | 10                       | 65                         | 1900                             | 3                   | 105                    |
| 4             | 330               | C/6032-28               | T520C337M004A(1)E025         | 132                              | 8                        | 25                         | 2600                             | 3                   | 105                    |
| 4             | 330               | C/6032-28               | T520C337M004A(1)E045         | 132                              | 8                        | 45                         | 1900                             | 3                   | 105                    |
| 4             | 330               | V/7343-19               | T520V337M004A(1)E007         | 132                              | 10                       | 7                          | 5200                             | 3                   | 105                    |
| 4             | 330               | V/7343-19               | T520V337M004A(1)E009         | 132                              | 10                       | 9                          | 4600                             | 3                   | 105                    |
| 4             | 330               | V/7343-19               | T520V337M004A(1)E012         | 132                              | 10                       | 12                         | 3900                             | 3                   | 105                    |
| 4             | 330               | V/7343-19               | T520V337M004A(1)E018         | 132                              | 10                       | 18                         | 3200                             | 3                   | 105                    |
| 4             | 330               | V/7343-19               | T520V337M004A(1)E025         | 132                              | 10                       | 25                         | 2700                             | 3                   | 105                    |
| 4             | 330               | V/7343-19               | T520V337M004A(1)E040         | 132                              | 10                       | 40                         | 2200                             | 3                   | 105                    |
| 4             | 330               | D/7343-31               | T530D337M004A(1)E005         | 132                              | 8                        | 5                          | 7100                             | 3                   | 125                    |
| 4             | 330               | D/7343-31               | T520D337M004A(1)E006         | 132                              | 10                       | 6                          | 6100                             | 3                   | 105                    |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |

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(2) To complete KEMET part number, insert M for ± 20% or K for ± 10%. Designates Capacitance tolerance.

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Refer to Ordering Information for additional detail.

**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |
|---------------|-------------------|-------------------------|------------------------------|----------------------------------|--------------------------|----------------------------|----------------------------------|---------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| 4             | 330               | D/7343-31               | T530D337M004A(1)E006         | 132                              | 8                        | 6                          | 6500                             | 3                   | 125                    |
| 4             | 330               | D/7343-31               | T520D337M004A(1)E007         | 132                              | 10                       | 7                          | 5700                             | 3                   | 105                    |
| 4             | 330               | D/7343-31               | T520D337M004A(1)E009         | 132                              | 10                       | 9                          | 5000                             | 3                   | 105                    |
| 4             | 330               | D/7343-31               | T520D337M004A(1)E012         | 132                              | 10                       | 12                         | 4300                             | 3                   | 105                    |
| 4             | 330               | D/7343-31               | T520D337M004A(1)E015         | 132                              | 10                       | 15                         | 3900                             | 3                   | 105                    |
| 4             | 330               | D/7343-31               | T525D337M004A(1)E025         | 132                              | 10                       | 25                         | 3000                             | 3                   | 125                    |
| 4             | 330               | D/7343-31               | T520D337M004A(1)E040         | 132                              | 10                       | 40                         | 2400                             | 3                   | 105                    |
| 4             | 330               | D/7343-31               | T520D337M004A(1)E045         | 132                              | 10                       | 45                         | 2200                             | 3                   | 105                    |
| 4             | 470               | D/7343-31               | T530D477M004A(1)E006         | 188                              | 8                        | 6                          | 6500                             | 3                   | 125                    |
| 4             | 470               | D/7343-31               | T520D477M004A(1)E010         | 188                              | 10                       | 10                         | 4700                             | 3                   | 105                    |
| 4             | 470               | D/7343-31               | T530D477M004A(1)E010         | 188                              | 8                        | 10                         | 5000                             | 3                   | 125                    |
| 4             | 470               | D/7343-31               | T520D477M004A(1)E012         | 188                              | 10                       | 12                         | 4300                             | 3                   | 105                    |
| 4             | 470               | D/7343-31               | T520D477M004A(1)E015         | 188                              | 10                       | 15                         | 3900                             | 3                   | 105                    |
| 4             | 470               | D/7343-31               | T520D477M004A(1)E018         | 188                              | 10                       | 18                         | 3500                             | 3                   | 105                    |
| 4             | 470               | D/7343-31               | T520D477M004A(1)E025         | 188                              | 10                       | 25                         | 3000                             | 3                   | 105                    |
| 4             | 470               | D/7343-31               | T525D477M004A(1)E025         | 188                              | 10                       | 25                         | 3000                             | 3                   | 125                    |
| 4             | 470               | D/7343-31               | T520D477M004A(1)E040         | 188                              | 10                       | 40                         | 2400                             | 3                   | 105                    |
| 4             | 470               | D/7343-31               | T525D477M004A(1)E040         | 188                              | 10                       | 40                         | 2400                             | 3                   | 125                    |
| 4             | 470               | Y/7343-40               | T530Y477M004A(1)E005         | 188                              | 8                        | 5                          | 7300                             | 3                   | 125                    |
| 4             | 470               | Y/7343-40               | T530Y477M004A(1)E006         | 188                              | 8                        | 6                          | 6600                             | 3                   | 125                    |
| 4             | 680               | D/7343-31               | T520D687M004A(1)E012         | 272                              | 10                       | 12                         | 4300                             | 3                   | 105                    |
| 4             | 680               | D/7343-31               | T520D687M004A(1)E015         | 272                              | 10                       | 15                         | 3900                             | 3                   | 105                    |
| 4             | 680               | D/7343-31               | T520D687M004A(1)E025         | 272                              | 10                       | 25                         | 3000                             | 3                   | 105                    |
| 4             | 680               | Y/7343-40               | T530Y687M004A(1)E005         | 272                              | 8                        | 5                          | 7300                             | 3                   | 125                    |
| 4             | 680               | Y/7343-40               | T520Y687M004A(1)E010         | 272                              | 10                       | 10                         | 4900                             | 3                   | 105                    |
| 4             | 680               | Y/7343-40               | T520Y687M004A(1)E015         | 272                              | 10                       | 15                         | 4000                             | 3                   | 105                    |
| 4             | 680               | Y/7343-40               | T520Y687M004A(1)E025         | 272                              | 10                       | 25                         | 3100                             | 3                   | 105                    |
| 4             | 680               | X/7343-43               | T530X687M004A(1)E004         | 272                              | 8                        | 4                          | 8200                             | 3                   | 125                    |
| 4             | 680               | X/7343-43               | T530X687M004A(1)E005         | 272                              | 8                        | 5                          | 7300                             | 3                   | 125                    |
| 4             | 680               | X/7343-43               | T530X687M004A(1)E006         | 272                              | 8                        | 6                          | 6700                             | 3                   | 125                    |
| 4             | 680               | X/7343-43               | T520X687M004A(1)E010         | 272                              | 10                       | 10                         | 5000                             | 3                   | 105                    |
| 4             | 680               | X/7343-43               | T530X687M004A(1)E010         | 272                              | 8                        | 10                         | 5200                             | 3                   | 125                    |
| 4             | 680               | X/7343-43               | T520X687M004A(1)E015         | 272                              | 10                       | 15                         | 4100                             | 3                   | 105                    |
| 4             | 680               | X/7343-43               | T520X687M004A(1)E035         | 272                              | 10                       | 35                         | 2700                             | 3                   | 105                    |
| 4             | 1000              | X/7343-43               | T530X108M004A(1)E006         | 400                              | 8                        | 6                          | 6700                             | 3                   | 125                    |
| 6.3           | 15                | T/3528-12               | T520T156M006A(1)E100         | 9.45                             | 8                        | 100                        | 1000                             | 3                   | 105                    |
| 6.3           | 10                | P/2012-10               | T529P106M006AAE200           | 18.9                             | 6                        | 200                        | 354                              | 3                   | 105                    |
| 6.3           | 22                | P/2012-10               | T529P226M006AAE150           | 22                               | 6                        | 150                        | 408                              | 3                   | 105                    |
| 6.3           | 22                | P/2012-10               | T529P226M006AAE200           | 22                               | 6                        | 200                        | 354                              | 3                   | 105                    |
| 6.3           | 22                | A/3216-18               | T520A226M006A(1)E090         | 13.86                            | 8                        | 90                         | 1100                             | 3                   | 105                    |
| 6.3           | 22                | A/3216-18               | T520A226M006A(1)E100         | 13.86                            | 8                        | 100                        | 1100                             | 3                   | 105                    |
| 6.3           | 22                | T/3528-12               | T520T226M006A(1)E100         | 13.86                            | 8                        | 100                        | 1000                             | 3                   | 105                    |
| 6.3           | 33                | A/3216-18               | T520A336M006A(1)E070         | 20.79                            | 8                        | 70                         | 1300                             | 3                   | 105                    |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |

(1) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, H = Standard Solder coated (SnPb 5% Pb minimum), N = Non-Magnetic 100% Tin (Sn), M = Non-Magnetic (SnPb). Refer to Ordering Information for additional detail.

(2) To complete KEMET part number, insert M for ± 20% or K for ± 10%. Designates Capacitance tolerance.

Higher voltage ratings and tighter ESR may be substituted within the same size at KEMET's option. Voltage substitutions will be marked with the higher voltage rating. Substitutions can include better than series.

**Part numbers marked in blue font are not recommended for new designs. Please use the T521 series instead.**

**Part numbers marked in orange font are not recommended for new designs. Please contact your KEMET representative for a replacement part.**

^ Denotes the large reel (13") is not available.

Refer to Ordering Information for additional detail.

**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |
|---------------|-------------------|-------------------------|------------------------------|----------------------------------|--------------------------|----------------------------|----------------------------------|---------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| 6.3           | 33                | A/3216-18               | T520A336M006A(1)E080         | 20.79                            | 8                        | 80                         | 1200                             | 3                   | 105                    |
| 6.3           | 33                | A/3216-18               | T520A336M006A(1)E120         | 20.79                            | 8                        | 120                        | 1000                             | 3                   | 105                    |
| 6.3           | 33                | T/3528-12               | T520T336M006A(1)E070         | 20.79                            | 8                        | 70                         | 1200                             | 3                   | 105                    |
| 6.3           | 33                | B/3528-21               | T520B336M006A(1)E025         | 20.79                            | 8                        | 25                         | 2300                             | 3                   | 105                    |
| 6.3           | 33                | B/3528-21               | T520B336M006A(1)E035         | 20.79                            | 8                        | 35                         | 1900                             | 3                   | 105                    |
| 6.3           | 33                | B/3528-21               | T520B336M006A(1)E040         | 20.79                            | 8                        | 40                         | 1800                             | 3                   | 105                    |
| 6.3           | 33                | B/3528-21               | T520B336M006A(1)E070         | 20.79                            | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 6.3           | 33                | B/3528-21               | T525B336M006A(1)E080         | 20.79                            | 8                        | 80                         | 1300                             | 3                   | 125                    |
| 6.3           | 33                | C/6032-28               | T520C336M006A(1)E100         | 20.79                            | 8                        | 100                        | 1300                             | 3                   | 105                    |
| 6.3           | 47                | P/2012-10               | T529P476M006AAE200           | 29.61                            | 6                        | 200                        | 354                              | 3                   | 105                    |
| 6.3           | 47                | P/2012-10               | T529P476M006AAE150           | 29.6                             | 6                        | 150                        | 408                              | 3                   | 105                    |
| 6.3           | 47                | I/3216-10               | T527I476M006ATE200           | 29.6                             | 6                        | 200                        | 548                              | 3                   | 105                    |
| 6.3           | 47                | A/3216-18               | T520A476M006A(1)E150         | 29.61                            | 8                        | 150                        | 900                              | 3                   | 105                    |
| 6.3           | 47                | T/3528-12               | T520T476M006A(1)E040         | 29.61                            | 8                        | 40                         | 1600                             | 3                   | 105                    |
| 6.3           | 47                | T/3528-12               | T520T476M006A(1)E070         | 29.61                            | 8                        | 70                         | 1200                             | 3                   | 105                    |
| 6.3           | 47                | T/3528-12               | T525T476M006A(1)E080         | 29.61                            | 8                        | 80                         | 1100                             | 3                   | 125                    |
| 6.3           | 47                | B/3528-21               | T520B476M006A(1)E025         | 29.61                            | 8                        | 25                         | 2300                             | 3                   | 105                    |
| 6.3           | 47                | B/3528-21               | T520B476M006A(1)E035         | 29.61                            | 8                        | 35                         | 1900                             | 3                   | 105                    |
| 6.3           | 47                | B/3528-21               | T520B476M006A(1)E040         | 29.61                            | 8                        | 40                         | 1800                             | 3                   | 105                    |
| 6.3           | 47                | B/3528-21               | T520B476M006A(1)E070         | 29.61                            | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 6.3           | 47                | B/3528-21               | T525B476M006A(1)E070         | 29.61                            | 8                        | 70                         | 1300                             | 3                   | 125                    |
| 6.3           | 47                | B/3528-21               | T525B476M006A(1)E080         | 29.61                            | 8                        | 80                         | 1300                             | 3                   | 125                    |
| 6.3           | 68                | A/3216-18               | T520A686M006A(1)E150         | 42.84                            | 8                        | 150                        | 900                              | 3                   | 105                    |
| 6.3           | 68                | T/3528-12               | T520T686M006A(1)E070         | 42.84                            | 8                        | 70                         | 1200                             | 3                   | 105                    |
| 6.3           | 68                | T/3528-12               | T520T686M006A(1)E150         | 42.84                            | 8                        | 150                        | 800                              | 3                   | 105                    |
| 6.3           | 68                | B/3528-21               | T520B686M006A(1)E025         | 42.84                            | 8                        | 25                         | 2300                             | 3                   | 105                    |
| 6.3           | 68                | B/3528-21               | T520B686M006A(1)E035         | 42.84                            | 8                        | 35                         | 1900                             | 3                   | 105                    |
| 6.3           | 68                | B/3528-21               | T520B686M006A(1)E040         | 42.84                            | 8                        | 40                         | 1800                             | 3                   | 105                    |
| 6.3           | 68                | B/3528-21               | T520B686M006A(1)E070         | 42.84                            | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 6.3           | 68                | B/3528-21               | T525B686M006A(1)E080         | 42.84                            | 8                        | 80                         | 1300                             | 3                   | 125                    |
| 6.3           | 68                | U/6032-15               | T520U686M006A(1)E055         | 42.84                            | 8                        | 55                         | 1600                             | 3                   | 105                    |
| 6.3           | 68                | U/6032-15               | T520U686M006A(1)E070         | 42.84                            | 8                        | 70                         | 1400                             | 3                   | 105                    |
| 6.3           | 68                | C/6032-28               | T520C686M006A(1)E100         | 42.84                            | 8                        | 100                        | 1300                             | 3                   | 105                    |
| 6.3           | 100               | I/3216-10               | T527I107M006ATE200           | 63.0                             | 8                        | 200                        | 775                              | 3                   | 105                    |
| 6.3           | 100               | I/3216-10               | T527I107M006ATE100           | 63.0                             | 8                        | 100                        | 775                              | 3                   | 105                    |
| 6.3           | 100               | I/3216-10               | T527I107M006ATE070           | 63.0                             | 8                        | 70                         | 1134                             | 3                   | 105                    |
| 6.3           | 100               | A/3216-18               | T520A107M006ATE070           | 63                               | 8                        | 70                         | 1035                             | 3                   | 105                    |
| 6.3           | 100               | A/3216-18               | T520A107M006ATE045           | 63                               | 8                        | 45                         | 1600                             | 3                   | 105                    |
| 6.3           | 100               | A/3216-18               | T520A107M006ATE035           | 63                               | 8                        | 35                         | 1500                             | 3                   | 105                    |
| 6.3           | 100               | A/3216-18               | T520A107M006ATE025           | 63                               | 8                        | 25                         | 1732                             | 3                   | 105                    |
| 6.3           | 100               | T/3528-12               | T520T107M006APE070           | 63                               | 8                        | 70                         | 1200                             | 3                   | 105                    |
| 6.3           | 100               | T/3528-12               | T520T107M006APE055           | 63                               | 8                        | 55                         | 1200                             | 3                   | 105                    |
| 6.3           | 100               | B/3528-21               | T520B107M006A(1)E015         | 63                               | 8                        | 15                         | 2900                             | 3                   | 105                    |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |

(1) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, H = Standard Solder coated (SnPb 5% Pb minimum), N = Non-Magnetic 100% Tin (Sn), M = Non-Magnetic (SnPb). Refer to Ordering Information for additional detail.

(2) To complete KEMET part number, insert M for ± 20% or K for ± 10%. Designates Capacitance tolerance.

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^ Denotes the large reel (13") is not available.

Refer to Ordering Information for additional detail.

**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |
|---------------|-------------------|-------------------------|------------------------------|----------------------------------|--------------------------|----------------------------|----------------------------------|---------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| 6.3           | 100               | B/3528-21               | T520B107M006A(1)E018         | 63                               | 8                        | 18                         | 2700                             | 3                   | 105                    |
| 6.3           | 100               | B/3528-21               | T520B107M006A(1)E025         | 63                               | 8                        | 25                         | 2300                             | 3                   | 105                    |
| 6.3           | 100               | B/3528-21               | T520B107M006A(1)E035         | 63                               | 8                        | 35                         | 1900                             | 3                   | 105                    |
| 6.3           | 100               | B/3528-21               | T520B107M006A(1)E040         | 63                               | 8                        | 40                         | 1800                             | 3                   | 105                    |
| 6.3           | 100               | B/3528-21               | T520B107M006A(1)E045         | 63                               | 8                        | 45                         | 1700                             | 3                   | 105                    |
| 6.3           | 100               | B/3528-21               | T520B107M006A(1)E070         | 63                               | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 6.3           | 100               | U/6032-15               | T520U107M006A(1)E055         | 63                               | 8                        | 55                         | 1600                             | 3                   | 105                    |
| 6.3           | 100               | W/7343-15               | T520W107M006A(1)E040         | 63                               | 10                       | 40                         | 2100                             | 3                   | 105                    |
| 6.3           | 100               | V/7343-19               | T520V107M006A(1)E009         | 63                               | 10                       | 9                          | 4600                             | 3                   | 105                    |
| 6.3           | 100               | V/7343-19               | T520V107M006A(1)E012         | 63                               | 10                       | 12                         | 3900                             | 3                   | 105                    |
| 6.3           | 100               | V/7343-19               | T520V107M006A(1)E015         | 63                               | 10                       | 15                         | 3500                             | 3                   | 105                    |
| 6.3           | 100               | V/7343-19               | T520V107M006A(1)E045         | 63                               | 10                       | 45                         | 2000                             | 3                   | 105                    |
| 6.3           | 100               | C/6032-28               | T520C107M006A(1)E025         | 63                               | 8                        | 25                         | 2600                             | 3                   | 105                    |
| 6.3           | 100               | C/6032-28               | T520C107M006A(1)E045         | 63                               | 8                        | 45                         | 1900                             | 3                   | 105                    |
| 6.3           | 120               | B/3528-21               | T520B127M006A(1)E035         | 75.6                             | 8                        | 35                         | 1900                             | 3                   | 105                    |
| 6.3           | 150               | I/3216-10               | T529I157M006AAE200           | 283.5                            | 10                       | 200                        | 548                              | 3                   | 105                    |
| 6.3           | 150               | M/3528-15               | T520M157M006A(1)E035         | 94.5                             | 8                        | 35                         | 1900                             | 3                   | 105                    |
| 6.3           | 150               | M/3528-15               | T520M157M006A(1)E070         | 94.5                             | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 6.3           | 150               | M/3528-15               | T520M157M006A(1)E150         | 94.5                             | 8                        | 150                        | 900                              | 3                   | 105                    |
| 6.3           | 150               | M/3528-15               | T520M157M006A(1)E200         | 94.5                             | 8                        | 200                        | 800                              | 3                   | 105                    |
| 6.3           | 150               | B/3528-21               | T520B157M006A(1)E025         | 94.5                             | 8                        | 25                         | 2300                             | 3                   | 105                    |
| 6.3           | 150               | B/3528-21               | T520B157M006A(1)E035         | 94.5                             | 8                        | 35                         | 1900                             | 3                   | 105                    |
| 6.3           | 150               | B/3528-21               | T520B157M006A(1)E045         | 94.5                             | 8                        | 45                         | 1700                             | 3                   | 105                    |
| 6.3           | 150               | B/3528-21               | T520B157M006A(1)E070         | 94.5                             | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 6.3           | 150               | T/3528-12               | T523T157M006APE030           | 94.5                             | 8                        | 30                         | 1870                             | 3                   | 105                    |
| 6.3           | 150               | T/3528-12               | T520T157M006A(1)E035         | 94.5                             | 8                        | 35                         | 1700                             | 3                   | 105                    |
| 6.3           | 150               | C/6032-28               | T520C157M006A(1)E015         | 94.5                             | 8                        | 15                         | 3300                             | 3                   | 105                    |
| 6.3           | 150               | C/6032-28               | T520C157M006A(1)E025         | 94.5                             | 8                        | 25                         | 2600                             | 3                   | 105                    |
| 6.3           | 150               | C/6032-28               | T520C157M006A(1)E045         | 94.5                             | 8                        | 45                         | 1900                             | 3                   | 105                    |
| 6.3           | 150               | C/6032-28               | T520C157M006A(1)E055         | 94.5                             | 8                        | 55                         | 1700                             | 3                   | 105                    |
| 6.3           | 150               | U/6032-15               | T520U157M006A(1)E045         | 94.5                             | 8                        | 45                         | 1700                             | 3                   | 105                    |
| 6.3           | 150               | U/6032-15               | T520U157M006A(1)E055         | 94.5                             | 8                        | 55                         | 1600                             | 3                   | 105                    |
| 6.3           | 150               | L/6032-19               | T520L157M006A(1)E012         | 94.5                             | 8                        | 12                         | 3500                             | 3                   | 105                    |
| 6.3           | 150               | L/6032-19               | T520L157M006A(1)E025         | 94.5                             | 8                        | 25                         | 2400                             | 3                   | 105                    |
| 6.3           | 150               | W/7343-15               | T520W157M006A(1)E025         | 94.5                             | 10                       | 25                         | 2700                             | 3                   | 105                    |
| 6.3           | 150               | W/7343-15               | T520W157M006A(1)E040         | 94.5                             | 10                       | 40                         | 2100                             | 3                   | 105                    |
| 6.3           | 150               | V/7343-19               | T520V157M006A(1)E006         | 94.5                             | 10                       | 6                          | 5600                             | 3                   | 105                    |
| 6.3           | 150               | V/7343-19               | T520V157M006A(1)E007         | 94.5                             | 10                       | 7                          | 5200                             | 3                   | 105                    |
| 6.3           | 150               | V/7343-19               | T520V157M006A(1)E009         | 94.5                             | 10                       | 9                          | 4600                             | 3                   | 105                    |
| 6.3           | 150               | V/7343-19               | T520V157M006A(1)E012         | 94.5                             | 10                       | 12                         | 3900                             | 3                   | 105                    |
| 6.3           | 150               | V/7343-19               | T520V157M006A(1)E015         | 94.5                             | 10                       | 15                         | 3500                             | 3                   | 105                    |
| 6.3           | 150               | V/7343-19               | T520V157M006A(1)E018         | 94.5                             | 10                       | 18                         | 3200                             | 3                   | 105                    |
| 6.3           | 150               | V/7343-19               | T520V157M006A(1)E025         | 94.5                             | 10                       | 25                         | 2700                             | 3                   | 105                    |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |

(1) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, H = Standard Solder coated (SnPb 5% Pb minimum), N = Non-Magnetic 100% Tin (Sn), M = Non-Magnetic (SnPb). Refer to Ordering Information for additional detail.

(2) To complete KEMET part number, insert M for ± 20% or K for ± 10%. Designates Capacitance tolerance.

Higher voltage ratings and tighter ESR may be substituted within the same size at KEMET's option. Voltage substitutions will be marked with the higher voltage rating. Substitutions can include better than series.

**Part numbers marked in blue font are not recommended for new designs. Please use the T521 series instead.**

**Part numbers marked in orange font are not recommended for new designs. Please contact your KEMET representative for a replacement part.**

^ Denotes the large reel (13") is not available.

Refer to Ordering Information for additional detail.

**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |
|---------------|-------------------|-------------------------|------------------------------|----------------------------------|--------------------------|----------------------------|----------------------------------|---------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| 6.3           | 150               | V/7343-19               | T520V157M006A(1)E040         | 94.5                             | 10                       | 40                         | 2200                             | 3                   | 105                    |
| 6.3           | 150               | V/7343-19               | T520V157M006A(1)E045         | 94.5                             | 10                       | 45                         | 2000                             | 3                   | 105                    |
| 6.3           | 150               | D/7343-31               | T520D157M006A(1)E006         | 94.5                             | 10                       | 6                          | 6100                             | 3                   | 105                    |
| 6.3           | 150               | D/7343-31               | T520D157M006A(1)E007         | 94.5                             | 10                       | 7                          | 5700                             | 3                   | 105                    |
| 6.3           | 150               | D/7343-31               | T520D157M006A(1)E015         | 94.5                             | 10                       | 15                         | 3900                             | 3                   | 105                    |
| 6.3           | 150               | D/7343-31               | T520D157M006A(1)E025         | 94.5                             | 10                       | 25                         | 3000                             | 3                   | 105                    |
| 6.3           | 150               | D/7343-31               | T525D157M006A(1)E025         | 94.5                             | 10                       | 25                         | 3000                             | 3                   | 125                    |
| 6.3           | 150               | D/7343-31               | T520D157M006A(1)E055         | 94.5                             | 10                       | 55                         | 2000                             | 3                   | 105                    |
| 6.3           | 220               | B/3528-21               | T520B227M006A(1)E025         | 138.6                            | 8                        | 25                         | 2300                             | 3                   | 105                    |
| 6.3           | 220               | B/3528-21               | T520B227M006A(1)E035         | 138.6                            | 8                        | 35                         | 1900                             | 3                   | 105                    |
| 6.3           | 220               | B/3528-21               | T520B227M006A(1)E045         | 138.6                            | 8                        | 45                         | 1700                             | 3                   | 105                    |
| 6.3           | 220               | B/3528-21               | T520B227M006A(1)E070         | 138.6                            | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 6.3           | 220               | C/6032-28               | T520C227M006A(1)E015         | 138.6                            | 8                        | 15                         | 3300                             | 3                   | 105                    |
| 6.3           | 220               | C/6032-28               | T520C227M006A(1)E018         | 138.6                            | 8                        | 18                         | 3000                             | 3                   | 105                    |
| 6.3           | 220               | C/6032-28               | T520C227M006A(1)E025         | 138.6                            | 8                        | 25                         | 2600                             | 3                   | 105                    |
| 6.3           | 220               | C/6032-28               | T520C227M006A(1)E045         | 138.6                            | 8                        | 45                         | 1900                             | 3                   | 105                    |
| 6.3           | 220               | V/7343-19               | T520V227M006A(1)E007         | 138.6                            | 10                       | 7                          | 5200                             | 3                   | 105                    |
| 6.3           | 220               | V/7343-19               | T520V227M006A(1)E009         | 138.6                            | 10                       | 9                          | 4600                             | 3                   | 105                    |
| 6.3           | 220               | V/7343-19               | T520V227M006A(1)E012         | 138.6                            | 10                       | 12                         | 3900                             | 3                   | 105                    |
| 6.3           | 220               | V/7343-19               | T520V227M006A(1)E015         | 138.6                            | 10                       | 15                         | 3500                             | 3                   | 105                    |
| 6.3           | 220               | V/7343-19               | T520V227M006A(1)E018         | 138.6                            | 10                       | 18                         | 3200                             | 3                   | 105                    |
| 6.3           | 220               | V/7343-19               | T520V227M006A(1)E025         | 138.6                            | 10                       | 25                         | 2700                             | 3                   | 105                    |
| 6.3           | 220               | V/7343-19               | T520V227M006A(1)E040         | 138.6                            | 10                       | 40                         | 2200                             | 3                   | 105                    |
| 6.3           | 220               | D/7343-31               | T530D227M006A(1)E005         | 138.6                            | 8                        | 5                          | 7100                             | 3                   | 125                    |
| 6.3           | 220               | D/7343-31               | T520D227M006A(1)E006         | 138.6                            | 10                       | 6                          | 6100                             | 3                   | 105                    |
| 6.3           | 220               | D/7343-31               | T530D227M006A(1)E006         | 138.6                            | 8                        | 6                          | 6500                             | 3                   | 125                    |
| 6.3           | 220               | D/7343-31               | T520D227M006A(1)E007         | 138.6                            | 10                       | 7                          | 5700                             | 3                   | 105                    |
| 6.3           | 220               | D/7343-31               | T520D227M006A(1)E009         | 138.6                            | 10                       | 9                          | 5000                             | 3                   | 105                    |
| 6.3           | 220               | D/7343-31               | T520D227M006A(1)E015         | 138.6                            | 10                       | 15                         | 3900                             | 3                   | 105                    |
| 6.3           | 220               | D/7343-31               | T520D227M006A(1)E018         | 138.6                            | 10                       | 18                         | 3500                             | 3                   | 105                    |
| 6.3           | 220               | D/7343-31               | T520D227M006A(1)E025         | 138.6                            | 10                       | 25                         | 3000                             | 3                   | 105                    |
| 6.3           | 220               | D/7343-31               | T525D227M006A(1)E025         | 138.6                            | 10                       | 25                         | 3000                             | 3                   | 125                    |
| 6.3           | 220               | D/7343-31               | T520D227M006A(1)E040         | 138.6                            | 10                       | 40                         | 2400                             | 3                   | 105                    |
| 6.3           | 220               | D/7343-31               | T520D227M006A(1)E050         | 138.6                            | 10                       | 50                         | 2100                             | 3                   | 105                    |
| 6.3           | 330               | B/3528-21               | T520B337M006A(1)E040         | 207.9                            | 8                        | 40                         | 1800                             | 3                   | 85                     |
| 6.3           | 330               | B/3528-21               | T520B337M006A(1)E070         | 208                              | 8                        | 70                         | 1300                             | 3                   | 85                     |
| 6.3           | 330               | V/7343-19               | T520V337M006A(1)E015         | 207.9                            | 10                       | 15                         | 3500                             | 3                   | 105                    |
| 6.3           | 330               | V/7343-19               | T520V337M006A(1)E018         | 207.9                            | 10                       | 18                         | 3200                             | 3                   | 105                    |
| 6.3           | 330               | V/7343-19               | T520V337M006A(1)E025         | 207.9                            | 10                       | 25                         | 2700                             | 3                   | 105                    |
| 6.3           | 330               | V/7343-19               | T520V337M006A(1)E040         | 207.9                            | 10                       | 40                         | 2200                             | 3                   | 105                    |
| 6.3           | 330               | V/7343-19               | T520V337M006A(1)E045         | 207.9                            | 10                       | 45                         | 2000                             | 3                   | 105                    |
| 6.3           | 330               | D/7343-31               | T530D337M006A(1)E006         | 207.9                            | 8                        | 6                          | 6500                             | 3                   | 125                    |
| 6.3           | 330               | D/7343-31               | T520D337M006A(1)E009         | 207.9                            | 10                       | 9                          | 5000                             | 3                   | 105                    |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |

(1) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, H = Standard Solder coated (SnPb 5% Pb minimum), N = Non-Magnetic 100% Tin (Sn), M = Non-Magnetic (SnPb). Refer to Ordering Information for additional detail.

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**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |
|---------------|-------------------|-------------------------|------------------------------|----------------------------------|--------------------------|----------------------------|----------------------------------|---------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| 6.3           | 330               | D/7343-31               | T520D337M006A(1)E010         | 207.9                            | 10                       | 10                         | 4700                             | 3                   | 105                    |
| 6.3           | 330               | D/7343-31               | T530D337M006A(1)E010         | 207.9                            | 8                        | 10                         | 5000                             | 3                   | 125                    |
| 6.3           | 330               | D/7343-31               | T520D337M006A(1)E015         | 207.9                            | 10                       | 15                         | 3900                             | 3                   | 105                    |
| 6.3           | 330               | D/7343-31               | T520D337M006A(1)E018         | 207.9                            | 10                       | 18                         | 3500                             | 3                   | 105                    |
| 6.3           | 330               | D/7343-31               | T520D337M006A(1)E025         | 207.9                            | 10                       | 25                         | 3000                             | 3                   | 105                    |
| 6.3           | 330               | D/7343-31               | T525D337M006A(1)E025         | 207.9                            | 10                       | 25                         | 3000                             | 3                   | 125                    |
| 6.3           | 330               | D/7343-31               | T520D337M006A(1)E040         | 207.9                            | 10                       | 40                         | 2400                             | 3                   | 105                    |
| 6.3           | 330               | D/7343-31               | T525D337M006A(1)E040         | 207.9                            | 10                       | 40                         | 2400                             | 3                   | 125                    |
| 6.3           | 330               | D/7343-31               | T520D337M006A(1)E045         | 207.9                            | 10                       | 45                         | 2200                             | 3                   | 105                    |
| 6.3           | 330               | Y/7343-40               | T530Y337M006A(1)E005         | 207.9                            | 8                        | 5                          | 7300                             | 3                   | 125                    |
| 6.3           | 330               | Y/7343-40               | T530Y337M006A(1)E006         | 207.9                            | 8                        | 6                          | 6600                             | 3                   | 125                    |
| 6.3           | 330               | Y/7343-40               | T520Y337M006A(1)E010         | 207.9                            | 10                       | 10                         | 4900                             | 3                   | 105                    |
| 6.3           | 330               | Y/7343-40               | T530Y337M006A(1)E010         | 207.9                            | 8                        | 10                         | 5100                             | 3                   | 125                    |
| 6.3           | 330               | Y/7343-40               | T520Y337M006A(1)E015         | 207.9                            | 10                       | 15                         | 4000                             | 3                   | 105                    |
| 6.3           | 330               | Y/7343-40               | T520Y337M006A(1)E025         | 207.9                            | 10                       | 25                         | 3100                             | 3                   | 105                    |
| 6.3           | 330               | Y/7343-40               | T520Y337M006A(1)E040         | 207.9                            | 10                       | 40                         | 2500                             | 3                   | 105                    |
| 6.3           | 470               | W/7343-15               | T520W477M006A(1)E055         | 296.1                            | 10                       | 55                         | 1800                             | 3                   | 85                     |
| 6.3           | 470               | W/7343-15               | T520W477M006A(1)E035         | 296.1                            | 9                        | 35                         | 2300                             | 3                   | 85                     |
| 6.3           | 470               | V/7343-19               | T520V477M006A(1)E055         | 296.1                            | 10                       | 55                         | 1800                             | 3                   | 105                    |
| 6.3           | 470               | V/7343-19               | T520V477M006A(1)E035         | 296.1                            | 10                       | 35                         | 2300                             | 3                   | 105                    |
| 6.3           | 470               | Y/7343-40               | T530Y477M006A(1)E005         | 296.1                            | 8                        | 5                          | 7300                             | 3                   | 125                    |
| 6.3           | 470               | Y/7343-40               | T520Y477M006A(1)E010         | 296.1                            | 10                       | 10                         | 4900                             | 3                   | 105                    |
| 6.3           | 470               | Y/7343-40               | T520Y477M006A(1)E015         | 296.1                            | 10                       | 15                         | 4000                             | 3                   | 105                    |
| 6.3           | 470               | Y/7343-40               | T520Y477M006A(1)E018         | 296.1                            | 10                       | 18                         | 3700                             | 3                   | 105                    |
| 6.3           | 470               | Y/7343-40               | T520Y477M006A(1)E025         | 296.1                            | 10                       | 25                         | 3100                             | 3                   | 105                    |
| 6.3           | 470               | Y/7343-40               | T520Y477M006A(1)E035         | 296.1                            | 10                       | 35                         | 2600                             | 3                   | 105                    |
| 6.3           | 470               | Y/7343-40               | T525Y477M006A(1)E035         | 296.1                            | 10                       | 35                         | 2600                             | 3                   | 125                    |
| 6.3           | 470               | D/7343-31               | T520D477M006A(1)E015         | 296.1                            | 10                       | 15                         | 3900                             | 3                   | 105                    |
| 6.3           | 470               | D/7343-31               | T520D477M006A(1)E025         | 296.1                            | 10                       | 25                         | 3000                             | 3                   | 105                    |
| 6.3           | 470               | D/7343-31               | T520D477M006A(1)E030         | 296.1                            | 10                       | 30                         | 2700                             | 3                   | 105                    |
| 6.3           | 470               | X/7343-43               | T530X477M006A(1)E004         | 296.1                            | 8                        | 4                          | 8200                             | 3                   | 125                    |
| 6.3           | 470               | X/7343-43               | T530X477M006A(1)E005         | 296.1                            | 8                        | 5                          | 7300                             | 3                   | 125                    |
| 6.3           | 470               | X/7343-43               | T530X477M006A(1)E006         | 296.1                            | 8                        | 6                          | 6700                             | 3                   | 125                    |
| 6.3           | 470               | X/7343-43               | T520X477M006A(1)E010         | 296.1                            | 10                       | 10                         | 5000                             | 3                   | 105                    |
| 6.3           | 470               | X/7343-43               | T530X477M006A(1)E010         | 296.1                            | 8                        | 10                         | 5200                             | 3                   | 125                    |
| 6.3           | 470               | X/7343-43               | T520X477M006A(1)E018         | 296.1                            | 10                       | 18                         | 3700                             | 3                   | 105                    |
| 6.3           | 470               | X/7343-43               | T520X477M006A(1)E035         | 296.1                            | 10                       | 35                         | 2700                             | 3                   | 105                    |
| 6.3           | 470               | X/7343-43               | T520X477M006A(1)E040         | 296.1                            | 10                       | 40                         | 2500                             | 3                   | 105                    |
| 6.3           | 680               | Y/7343-40               | T520Y687M006A(1)E025         | 428.4                            | 10                       | 25                         | 3100                             | 3                   | 105                    |
| 6.3           | 680               | X/7343-43               | T530X687M006A(1)E010         | 428.4                            | 8                        | 10                         | 5200                             | 3                   | 125                    |
| 6.3           | 680               | X/7343-43               | T530X687M006A(1)E018         | 428.4                            | 8                        | 18                         | 3900                             | 3                   | 125                    |
| 6.3           | 680               | X/7343-43               | T520X687M006A(1)E025         | 428.4                            | 10                       | 25                         | 3100                             | 3                   | 105                    |
| 6.3           | 680               | X/7343-43               | T520X687M006A(1)E018         | 428                              | 10                       | 18                         | 3700                             | 3                   | 105                    |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |

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(2) To complete KEMET part number, insert M for ± 20% or K for ± 10%. Designates Capacitance tolerance.

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Refer to Ordering Information for additional detail.

**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |
|---------------|-------------------|-------------------------|------------------------------|----------------------------------|--------------------------|----------------------------|----------------------------------|---------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| 6.3           | 680               | J/7360-15               | T523J687M006APE070           | 428                              | 10                       | 70                         | 1700                             | 3                   | 85                     |
| 6.3           | 1000              | H/7360-20               | T520H108M006A(1)E055         | 630                              | 20                       | 55                         | 1800                             | 3                   | 85                     |
| 6.3           | 1200              | H/7360-20               | T520H128M006A(1)E070         | 756                              | 20                       | 70                         | 1200                             | 3                   | 85                     |
| 6.3           | 1500              | H/7360-20               | T520H158M006A(1)E055         | 945                              | 20                       | 55                         | 1800                             | 3                   | 85                     |
| 8             | 22                | T/3528-12               | T520T226M008A(1)E070         | 17.6                             | 8                        | 70                         | 1200                             | 3                   | 105                    |
| 8             | 33                | T/3528-12               | T520T336M008A(1)E070         | 26.4                             | 8                        | 70                         | 1200                             | 3                   | 105                    |
| 8             | 33                | T/3528-12               | T520T336M008A(1)E080         | 26.4                             | 8                        | 80                         | 1100                             | 3                   | 105                    |
| 8             | 33                | T/3528-12               | T525T336M008A(1)E080         | 26.4                             | 8                        | 80                         | 1100                             | 3                   | 125                    |
| 8             | 33                | B/3528-21               | T520B336M008A(1)E025         | 26.4                             | 8                        | 25                         | 2300                             | 3                   | 105                    |
| 8             | 33                | B/3528-21               | T520B336M008A(1)E035         | 26.4                             | 8                        | 35                         | 1900                             | 3                   | 105                    |
| 8             | 33                | B/3528-21               | T520B336M008A(1)E040         | 26.4                             | 8                        | 40                         | 1800                             | 3                   | 105                    |
| 8             | 33                | B/3528-21               | T520B336M008A(1)E070         | 26.4                             | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 8             | 33                | U/6032-15               | T520U336M008A(1)E070         | 26.4                             | 8                        | 70                         | 1400                             | 3                   | 105                    |
| 8             | 47                | B/3528-21               | T520B476M008A(1)E035         | 37.6                             | 8                        | 35                         | 1900                             | 3                   | 105                    |
| 8             | 47                | B/3528-21               | T520B476M008A(1)E070         | 37.6                             | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 8             | 82                | C/6032-28               | T520C826M008A(1)E025         | 65.6                             | 8                        | 25                         | 2600                             | 3                   | 105                    |
| 8             | 82                | C/6032-28               | T520C826M008A(1)E045         | 65.6                             | 8                        | 45                         | 1900                             | 3                   | 105                    |
| 8             | 150               | D/7343-31               | T520D157M008A(1)E025         | 120                              | 10                       | 25                         | 3000                             | 3                   | 105                    |
| 8             | 150               | D/7343-31               | T520D157M008A(1)E040         | 120                              | 10                       | 40                         | 2400                             | 3                   | 105                    |
| 8             | 150               | D/7343-31               | T520D157M008A(1)E055         | 120                              | 10                       | 55                         | 2000                             | 3                   | 105                    |
| 8             | 150               | V/7343-19               | T520V157M008A(1)E040         | 120                              | 10                       | 40                         | 2200                             | 3                   | 105                    |
| 10            | 10                | P/2012-10               | T529P106M010AAE200           | 30                               | 6                        | 200                        | 354                              | 3                   | 105                    |
| 10            | 10                | A/3216-18               | T520A106M010A(1)E080         | 10                               | 8                        | 80                         | 1200                             | 3                   | 105                    |
| 10            | 10                | A/3216-18               | T525A106M010A(1)E080         | 10                               | 8                        | 80                         | 1200                             | 3                   | 125                    |
| 10            | 15                | A/3216-18               | T520A156M010A(1)E080         | 15                               | 8                        | 80                         | 1200                             | 3                   | 105                    |
| 10            | 22                | P/2012-10               | T529P226M010AAE150           | 66                               | 6                        | 150                        | 408                              | 3                   | 105                    |
| 10            | 22                | P/2012-10               | T529P226M010AAE200           | 66                               | 6                        | 200                        | 354                              | 3                   | 105                    |
| 10            | 22                | I/3216-10               | T527I226M010ATE200           | 22                               | 8                        | 200                        | 548                              | 3                   | 105                    |
| 10            | 22                | A/3216-18               | T520A226M010A(1)E080         | 22                               | 8                        | 80                         | 1200                             | 3                   | 105                    |
| 10            | 22                | B/3528-21               | T525B226M010A(1)E080         | 22                               | 8                        | 80                         | 1300                             | 3                   | 125                    |
| 10            | 33                | I/3216-10               | T527I336M010ATE200           | 33                               | 6                        | 200                        | 548                              | 3                   | 105                    |
| 10            | 33                | T/3528-12               | T520T336M010A(1)E040         | 33                               | 8                        | 40                         | 1600                             | 3                   | 105                    |
| 10            | 33                | T/3528-12               | T520T336M010A(1)E070         | 33                               | 8                        | 70                         | 1200                             | 3                   | 105                    |
| 10            | 33                | T/3528-12               | T520T336M010A(1)E080         | 33                               | 8                        | 80                         | 1100                             | 3                   | 105                    |
| 10            | 33                | T/3528-12               | T525T336M010A(1)E080         | 33                               | 8                        | 80                         | 1100                             | 3                   | 125                    |
| 10            | 33                | B/3528-21               | T520B336M010A(1)E025         | 33                               | 8                        | 25                         | 2300                             | 3                   | 105                    |
| 10            | 33                | B/3528-21               | T520B336M010A(1)E035         | 33                               | 8                        | 35                         | 1900                             | 3                   | 105                    |
| 10            | 33                | B/3528-21               | T520B336M010A(1)E040         | 33                               | 8                        | 40                         | 1800                             | 3                   | 105                    |
| 10            | 33                | B/3528-21               | T520B336M010A(1)E070         | 33                               | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 10            | 33                | B/3528-21               | T525B336M010A(1)E080         | 33                               | 8                        | 80                         | 1300                             | 3                   | 125                    |
| 10            | 33                | U/6032-15               | T520U336M010A(1)E070         | 33                               | 8                        | 70                         | 1400                             | 3                   | 105                    |
| 10            | 47                | P/2012-10               | <b>T529P476M010AAE200</b>    | <b>141</b>                       | <b>6</b>                 | <b>200</b>                 | <b>354</b>                       | <b>3</b>            | <b>105</b>             |
| 10            | 47                | I/3216-10               | T527I476M010ATE200           | 47                               | 6                        | 200                        | 548                              | 3                   | 105                    |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |

(1) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, H = Standard Solder coated (SnPb 5% Pb minimum), N = Non-Magnetic 100% Tin (Sn), M = Non-Magnetic (SnPb). Refer to Ordering Information for additional detail.

(2) To complete KEMET part number, insert M for ± 20% or K for ± 10%. Designates Capacitance tolerance.

Higher voltage ratings and tighter ESR may be substituted within the same size at KEMET's option. Voltage substitutions will be marked with the higher voltage rating. Substitutions can include better than series.

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^ Denotes the large reel (13") is not available.

Refer to Ordering Information for additional detail.

**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |
|---------------|-------------------|-------------------------|------------------------------|----------------------------------|--------------------------|----------------------------|----------------------------------|---------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| 10            | 47                | B/3528-21               | T520B476M010A(1)E035         | 47                               | 8                        | 35                         | 1900                             | 3                   | 105                    |
| 10            | 47                | B/3528-21               | T520B476M010A(1)E070         | 47                               | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 10            | 47                | U/6032-15               | T520U476M010A(1)E055         | 47                               | 8                        | 55                         | 1600                             | 3                   | 105                    |
| 10            | 47                | C/6032-28               | T520C476M010A(1)E100         | 47                               | 8                        | 100                        | 1300                             | 3                   | 105                    |
| 10            | 68                | U/6032-15               | T520U686M010A(1)E055         | 68                               | 8                        | 55                         | 1600                             | 3                   | 105                    |
| 10            | 68                | W/7343-15               | T520W686M010A(1)E025         | 68                               | 10                       | 25                         | 2700                             | 3                   | 105                    |
| 10            | 68                | W/7343-15               | T520W686M010A(1)E040         | 68                               | 10                       | 40                         | 2100                             | 3                   | 105                    |
| 10            | 68                | C/6032-28               | T520C686M010A(1)E045         | 68                               | 8                        | 45                         | 1900                             | 3                   | 105                    |
| 10            | 68                | V/7343-19               | T520V686M010A(1)E025         | 68                               | 10                       | 25                         | 2700                             | 3                   | 105                    |
| 10            | 68                | V/7343-19               | T520V686M010A(1)E040         | 68                               | 10                       | 40                         | 2200                             | 3                   | 105                    |
| 10            | 68                | V/7343-19               | T520V686M010A(1)E045         | 68                               | 10                       | 45                         | 2000                             | 3                   | 105                    |
| 10            | 68                | V/7343-19               | T520V686M010A(1)E060         | 68                               | 10                       | 60                         | 1800                             | 3                   | 105                    |
| 10            | 68                | V/7343-19               | T520V686M010A(1)E100         | 68                               | 10                       | 100                        | 1400                             | 3                   | 105                    |
| 10            | 68                | D/7343-31               | T520D686M010A(1)E100         | 68                               | 10                       | 100                        | 1500                             | 3                   | 105                    |
| 10            | 100               | B/3528-21               | T520B107M010A(1)E070         | 100                              | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 10            | 100               | C/6032-28               | T520C107M010A(1)E025         | 100                              | 8                        | 25                         | 2600                             | 3                   | 105                    |
| 10            | 100               | C/6032-28               | T520C107M010A(1)E045         | 100                              | 8                        | 45                         | 1900                             | 3                   | 105                    |
| 10            | 100               | L/6032-19               | T520L107M010A(1)E025         | 100                              | 8                        | 25                         | 2400                             | 3                   | 105                    |
| 10            | 100               | W/7343-15               | T520W107M010A(1)E040         | 100                              | 10                       | 40                         | 2100                             | 3                   | 105                    |
| 10            | 100               | V/7343-19               | T520V107M010A(1)E018         | 100                              | 10                       | 18                         | 3200                             | 3                   | 105                    |
| 10            | 100               | V/7343-19               | T520V107M010A(1)E025         | 100                              | 10                       | 25                         | 2700                             | 3                   | 105                    |
| 10            | 100               | V/7343-19               | T520V107M010A(1)E045         | 100                              | 10                       | 45                         | 2000                             | 3                   | 105                    |
| 10            | 100               | V/7343-19               | T520V107M010A(1)E050         | 100                              | 10                       | 50                         | 1900                             | 3                   | 105                    |
| 10            | 100               | V/7343-19               | T520V107M010A(1)E055         | 100                              | 10                       | 55                         | 1800                             | 3                   | 105                    |
| 10            | 100               | D/7343-31               | T520D107M010A(1)E018         | 100                              | 10                       | 18                         | 3500                             | 3                   | 105                    |
| 10            | 100               | D/7343-31               | T525D107M010A(1)E025         | 100                              | 10                       | 25                         | 3000                             | 3                   | 125                    |
| 10            | 100               | D/7343-31               | T520D107M010A(1)E055         | 100                              | 10                       | 55                         | 2000                             | 3                   | 105                    |
| 10            | 100               | D/7343-31               | T525D107M010A(1)E055         | 100                              | 10                       | 55                         | 2000                             | 3                   | 125                    |
| 10            | 100               | D/7343-31               | T520D107M010A(1)E080         | 100                              | 10                       | 80                         | 1700                             | 3                   | 105                    |
| 10            | 150               | C/6032-28               | T520C157M010A(1)E055         | 150                              | 8                        | 55                         | 1700                             | 3                   | 105                    |
| 10            | 150               | V/7343-19               | T520V157M010A(1)E018         | 150                              | 10                       | 18                         | 3200                             | 3                   | 105                    |
| 10            | 150               | V/7343-19               | T520V157M010A(1)E025         | 150                              | 10                       | 25                         | 2700                             | 3                   | 105                    |
| 10            | 150               | V/7343-19               | T520V157M010A(1)E040         | 150                              | 10                       | 40                         | 2200                             | 3                   | 105                    |
| 10            | 150               | D/7343-31               | T530D157M010A(1)E005         | 150                              | 8                        | 5                          | 7100                             | 3                   | 125                    |
| 10            | 150               | D/7343-31               | T530D157M010A(1)E006         | 150                              | 8                        | 6                          | 6500                             | 3                   | 125                    |
| 10            | 150               | D/7343-31               | T530D157M010A(1)E010         | 150                              | 8                        | 10                         | 5000                             | 3                   | 125                    |
| 10            | 150               | D/7343-31               | T520D157M010A(1)E015         | 150                              | 10                       | 15                         | 3900                             | 3                   | 105                    |
| 10            | 150               | D/7343-31               | T520D157M010A(1)E018         | 150                              | 10                       | 18                         | 3500                             | 3                   | 105                    |
| 10            | 150               | D/7343-31               | T520D157M010A(1)E025         | 150                              | 10                       | 25                         | 3000                             | 3                   | 105                    |
| 10            | 150               | D/7343-31               | T525D157M010A(1)E025         | 150                              | 10                       | 25                         | 3000                             | 3                   | 125                    |
| 10            | 150               | D/7343-31               | T520D157M010A(1)E040         | 150                              | 10                       | 40                         | 2400                             | 3                   | 105                    |
| 10            | 150               | D/7343-31               | T520D157M010A(1)E055         | 150                              | 10                       | 55                         | 2000                             | 3                   | 105                    |
| 10            | 150               | D/7343-31               | T525D157M010A(1)E055         | 150                              | 10                       | 55                         | 2000                             | 3                   | 125                    |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |

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**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |
|---------------|-------------------|-------------------------|------------------------------|----------------------------------|--------------------------|----------------------------|----------------------------------|---------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| 10            | 150               | Y/7343-40               | T520Y157M010A(1)E015         | 150                              | 10                       | 15                         | 4000                             | 3                   | 105                    |
| 10            | 150               | Y/7343-40               | T520Y157M010A(1)E018         | 150                              | 10                       | 18                         | 3700                             | 3                   | 105                    |
| 10            | 150               | Y/7343-40               | T520Y157M010A(1)E025         | 150                              | 10                       | 25                         | 3100                             | 3                   | 105                    |
| 10            | 220               | V/7343-19               | T520V227M010A(1)E045         | 220                              | 10                       | 45                         | 2000                             | 3                   | 105                    |
| 10            | 220               | V/7343-19               | T520V227M010A(1)E025         | 220                              | 10                       | 25                         | 2700                             | 3                   | 105                    |
| 10            | 220               | D/7343-31               | T530D227M010A(1)E006         | 220                              | 8                        | 6                          | 6500                             | 3                   | 125                    |
| 10            | 220               | D/7343-31               | T530D227M010A(1)E010         | 220                              | 8                        | 10                         | 5000                             | 3                   | 125                    |
| 10            | 220               | D/7343-31               | T520D227M010A(1)E018         | 220                              | 10                       | 18                         | 3500                             | 3                   | 105                    |
| 10            | 220               | D/7343-31               | T520D227M010A(1)E025         | 220                              | 10                       | 25                         | 3000                             | 3                   | 105                    |
| 10            | 220               | D/7343-31               | T525D227M010A(1)E025         | 220                              | 10                       | 25                         | 3000                             | 3                   | 125                    |
| 10            | 220               | D/7343-31               | T520D227M010A(1)E040         | 220                              | 10                       | 40                         | 2400                             | 3                   | 105                    |
| 10            | 220               | Y/7343-40               | T530Y227M010A(1)E006         | 220                              | 8                        | 6                          | 6600                             | 3                   | 125                    |
| 10            | 220               | Y/7343-40               | T520Y227M010A(1)E040         | 220                              | 10                       | 40                         | 2500                             | 3                   | 105                    |
| 10            | 330               | Y/7343-40               | T520Y337M010A(1)E015         | 330                              | 10                       | 15                         | 4000                             | 3                   | 105                    |
| 10            | 330               | Y/7343-40               | T520Y337M010A(1)E025         | 330                              | 10                       | 25                         | 3100                             | 3                   | 105                    |
| 10            | 330               | Y/7343-40               | T520Y337M010A(1)E035         | 330                              | 10                       | 35                         | 2600                             | 3                   | 105                    |
| 10            | 330               | Y/7343-40               | T525Y337M010A(1)E035         | 330                              | 10                       | 35                         | 2600                             | 3                   | 125                    |
| 10            | 330               | X/7343-43               | T530X337M010A(1)E004         | 330                              | 8                        | 4                          | 8200                             | 3                   | 125                    |
| 10            | 330               | X/7343-43               | T530X337M010A(1)E005         | 330                              | 8                        | 5                          | 7300                             | 3                   | 125                    |
| 10            | 330               | X/7343-43               | T530X337M010A(1)E006         | 330                              | 8                        | 6                          | 6700                             | 3                   | 125                    |
| 10            | 330               | X/7343-43               | T520X337M010A(1)E010         | 330                              | 10                       | 10                         | 5000                             | 3                   | 105                    |
| 10            | 330               | X/7343-43               | T530X337M010A(1)E010         | 330                              | 8                        | 10                         | 5200                             | 3                   | 125                    |
| 10            | 330               | X/7343-43               | T520X337M010A(1)E025         | 330                              | 10                       | 25                         | 3100                             | 3                   | 105                    |
| 10            | 330               | X/7343-43               | T520X337M010A(1)E035         | 330                              | 10                       | 35                         | 2700                             | 3                   | 105                    |
| 10            | 330               | J/7360-15               | T523J337M010APE070           | 330                              | 10                       | 70                         | 1700                             | 3                   | 85                     |
| 10            | 470               | J/7360-15               | T523J477M010APE070           | 470                              | 10                       | 70                         | 1700                             | 3                   | 85                     |
| 10            | 820               | H/7360-20               | T520H827M010A(1)E070         | 820                              | 20                       | 70                         | 1200                             | 3                   | 85                     |
| 10            | 330               | X/7343-43               | T520X337M010A(1)E040         | 330                              | 10                       | 40                         | 2500                             | 3                   | 105                    |
| 11            | 47                | Q/7343-12               | T520Q476M011A(1)E040         | 52                               | 10                       | 40                         | 4500                             | 3                   | 105                    |
| 12.5          | 10                | T/3528-12               | T520T106M12RA(1)E150         | 12.5                             | 8                        | 150                        | 800                              | 3                   | 105                    |
| 12.5          | 15                | T/3528-12               | T520T156M12RA(1)E080         | 18.75                            | 8                        | 80                         | 1100                             | 3                   | 105                    |
| 12.5          | 47                | T/3528-12               | T521T476M12RA(1)E090         | 58.8                             | 8                        | 90                         | 1100                             | 3                   | 105                    |
| 16            | 10                | B/3528-21               | T520B106M016A(1)E100         | 16                               | 8                        | 100                        | 1100                             | 3                   | 105                    |
| 16            | 15                | B/3528-21               | T521B106M016A(1)E100         | 16                               | 8                        | 100                        | 1100                             | 3                   | 125                    |
| 16            | 22                | B/3528-21               | T521B156M016A(1)E090         | 24                               | 8                        | 90                         | 1200                             | 3                   | 105                    |
| 16            | 22                | B/3528-21               | T521B226M016A(1)E090         | 35.2                             | 8                        | 90                         | 1200                             | 3                   | 105                    |
| 16            | 22                | C/6032-28               | T520C226M016A(1)E080         | 35.2                             | 8                        | 80                         | 1400                             | 3                   | 105                    |
| 16            | 33                | T/3528-12               | T521T336M016A(1)E045         | 52.8                             | 8                        | 45                         | 1500                             | 3                   | 105                    |
| 16            | 33                | T/3528-12               | T521T336M016A(1)E050         | 52.8                             | 10                       | 50                         | 1400                             | 3                   | 105                    |
| 16            | 33                | B/3528-21               | T521B336M016A(1)E070         | 52.8                             | 8                        | 70                         | 1300                             | 3                   | 105                    |
| 16            | 33                | B/3528-21               | T521B336M016A(1)E090         | 52.8                             | 8                        | 90                         | 1200                             | 3                   | 105                    |
| 16            | 33                | B/3528-21               | T525B336M016A(1)E070         | 52.8                             | 8                        | 70                         | 1300                             | 3                   | 125                    |
| 16            | 33                | B/3528-21               | T525B336M016A(1)E090         | 52.8                             | 8                        | 90                         | 1200                             | 3                   | 125                    |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |

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**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |
|---------------|-------------------|-------------------------|------------------------------|----------------------------------|--------------------------|----------------------------|----------------------------------|---------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| 16            | 33                | Q/7343-12               | T521Q336M016A(1)E040         | 52.8                             | 10                       | 40                         | 2500                             | 3                   | 105                    |
| 16            | 33                | W/7343-15               | T520W336M016A(1)E045         | 52.8                             | 10                       | 45                         | 2000                             | 3                   | 105                    |
| 16            | 33                | V/7343-19               | T520V336M016A(1)E045         | 52.8                             | 10                       | 45                         | 2000                             | 3                   | 105                    |
| 16            | 33                | V/7343-19               | T520V336M016A(1)E060         | 52.8                             | 10                       | 60                         | 1800                             | 3                   | 105                    |
| 16            | 33                | V/7343-19               | T520V336M016A(1)E070         | 52.8                             | 10                       | 70                         | 1600                             | 3                   | 105                    |
| 16            | 47                | W/7343-15               | T521W476M016A(1)E040         | 75.2                             | 10                       | 40                         | 2100                             | 3                   | 105                    |
| 16            | 47                | W/7343-15               | T521W476M016A(1)E045         | 75.2                             | 10                       | 45                         | 2000                             | 3                   | 105                    |
| 16            | 47                | V/7343-19               | T521V476M016A(1)E040         | 75.2                             | 10                       | 40                         | 2200                             | 3                   | 105                    |
| 16            | 47                | V/7343-19               | T520V476M016A(1)E045         | 75.2                             | 10                       | 45                         | 2000                             | 3                   | 105                    |
| 16            | 47                | V/7343-19               | T521V476M016A(1)E055         | 75.2                             | 10                       | 55                         | 1800                             | 3                   | 105                    |
| 16            | 47                | V/7343-19               | T520V476M016A(1)E070         | 75.2                             | 10                       | 70                         | 1600                             | 3                   | 105                    |
| 16            | 47                | V/7343-19               | T521V476M016A(1)E070         | 75.2                             | 10                       | 70                         | 1600                             | 3                   | 105                    |
| 16            | 47                | V/7343-19               | T521V476M016A(1)E080         | 75.2                             | 10                       | 80                         | 1500                             | 3                   | 105                    |
| 16            | 47                | D/7343-31               | T520D476M016A(1)E035         | 75.2                             | 10                       | 35                         | 2500                             | 3                   | 105                    |
| 16            | 47                | D/7343-31               | T525D476M016A(1)E035         | 75.2                             | 10                       | 35                         | 2500                             | 3                   | 125                    |
| 16            | 47                | D/7343-31               | T521D476M016A(1)E040         | 75.2                             | 10                       | 40                         | 2400                             | 3                   | 105                    |
| 16            | 47                | D/7343-31               | T521D476M016A(1)E045         | 75.2                             | 10                       | 45                         | 2200                             | 3                   | 105                    |
| 16            | 47                | D/7343-31               | T521D476M016A(1)E055         | 75.2                             | 10                       | 55                         | 2000                             | 3                   | 105                    |
| 16            | 47                | D/7343-31               | T525D476M016A(1)E065         | 75.2                             | 10                       | 65                         | 1900                             | 3                   | 125                    |
| 16            | 47                | D/7343-31               | T520D476M016A(1)E070         | 75.2                             | 10                       | 70                         | 1800                             | 3                   | 105                    |
| 16            | 47                | D/7343-31               | T521D476M016A(1)E070         | 75.2                             | 10                       | 70                         | 1800                             | 3                   | 105                    |
| 16            | 47                | D/7343-31               | T521D476M016A(1)E090         | 75.2                             | 10                       | 90                         | 1600                             | 3                   | 105                    |
| 16            | 68                | W/7343-15               | T523W686(2)016APE050         | 108.8                            | 10                       | 50                         | 2820                             | 3                   | 105                    |
| 16            | 68                | W/7343-15               | T523W686(2)016APE070         | 108.8                            | 10                       | 70                         | 2376                             | 3                   | 105                    |
| 16            | 68                | W/7343-15               | T523W686(2)016APE100         | 108.8                            | 10                       | 100                        | 1988                             | 3                   | 105                    |
| 16            | 68                | V/7343-19               | T521V686M016A(1)E040         | 108.8                            | 10                       | 40                         | 2200                             | 3                   | 105                    |
| 16            | 68                | V/7343-19               | T521V686M016A(1)E050         | 108.8                            | 10                       | 50                         | 1900                             | 3                   | 105                    |
| 16            | 68                | V/7343-19               | T521V686M016A(1)E090         | 108.8                            | 10                       | 90                         | 1400                             | 3                   | 105                    |
| 16            | 68                | D/7343-31               | T520D686M016A(1)E050         | 108.8                            | 10                       | 50                         | 2100                             | 3                   | 105                    |
| 16            | 100               | W/7343-15               | T523W107(2)016APE050         | 160                              | 10                       | 50                         | 2820                             | 3                   | 105                    |
| 16            | 100               | W/7343-15               | T523W107(2)016APE070         | 160                              | 10                       | 70                         | 2376                             | 3                   | 105                    |
| 16            | 100               | W/7343-15               | T523W107(2)016APE100         | 160                              | 10                       | 100                        | 1988                             | 3                   | 105                    |
| 16            | 100               | V/7343-19               | T521V107M016A(1)E040         | 160                              | 10                       | 40                         | 2200                             | 3                   | 125                    |
| 16            | 100               | V/7343-19               | T521V107M016A(1)E050         | 160                              | 10                       | 50                         | 1900                             | 3                   | 125                    |
| 16            | 100               | D/7343-31               | T521D107M016A(1)E050         | 160                              | 10                       | 50                         | 2100                             | 3                   | 105                    |
| 16            | 150               | W/7343-15               | T523W157(2)016APE050         | 240                              | 10                       | 50                         | 2820                             | 3                   | 105                    |
| 16            | 150               | W/7343-15               | T523W157(2)016APE070         | 240                              | 10                       | 70                         | 2376                             | 3                   | 105                    |
| 16            | 150               | W/7343-15               | T523W157(2)016APE100         | 240                              | 10                       | 100                        | 1988                             | 3                   | 105                    |
| 16            | 150               | D/7343-31               | T521D157M016A(1)E050         | 240                              | 10                       | 50                         | 2100                             | 3                   | 105                    |
| 16            | 150               | D/7343-31               | T521D157M016A(1)E040         | 240                              | 10                       | 40                         | 2400                             | 3                   | 105                    |
| 16            | 150               | X/7343-43               | T530X157M016A(1)E015         | 240                              | 8                        | 15                         | 4200                             | 3                   | 125                    |
| 16            | 150               | X/7343-43               | T530X157M016A(1)E025         | 240                              | 8                        | 25                         | 3300                             | 3                   | 125                    |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |

(1) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, H = Standard Solder coated (SnPb 5% Pb minimum), N = Non-Magnetic 100% Tin (Sn), M = Non-Magnetic (SnPb). Refer to Ordering Information for additional detail.

(2) To complete KEMET part number, insert M for ± 20% or K for ± 10%. Designates Capacitance tolerance.

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^ Denotes the large reel (13") is not available.

Refer to Ordering Information for additional detail.

**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |
|---------------|-------------------|-------------------------|------------------------------|----------------------------------|--------------------------|----------------------------|----------------------------------|---------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| 16            | 150               | X/7343-43               | T520X157M016A(1)E040         | 240                              | 10                       | 40                         | 2500                             | 3                   | 105                    |
| 16            | 150               | X/7343-43               | T530X157M016A(1)E040         | 240                              | 8                        | 40                         | 2600                             | 3                   | 125                    |
| 16            | 150               | X/7343-43               | T521X157M016A(1)E080         | 240                              | 10                       | 80                         | 1800                             | 3                   | 105                    |
| 16            | 220               | X/7343-43               | T521X227M016A(1)E035         | 352                              | 10                       | 35                         | 2700                             | 3                   | 125                    |
| 16            | 220               | X/7343-43               | T521X227M016A(1)E050         | 352                              | 10                       | 50                         | 2200                             | 3                   | 125                    |
| 16            | 220               | H/7360-20               | T523H227M016APE070           | 352                              | 10                       | 70                         | 2510                             | 3                   | 105                    |
| 16            | 220               | J/7360-15               | T523J227M016APE070           | 352                              | 10                       | 70                         | 2100                             | 3                   | 85                     |
| 16            | 330               | X/7343-43               | T521X337M016A(1)E025         | 528                              | 10                       | 25                         | 3100                             | 3                   | 125                    |
| 16            | 330               | X/7343-43               | T521X337M016A(1)E050         | 528                              | 10                       | 50                         | 2200                             | 3                   | 125                    |
| 16            | 330               | H/7360-20               | T523H337M016APE070           | 528                              | 10                       | 70                         | 2510                             | 3                   | 85                     |
| 20            | 10                | B/3528-21               | T521B106M020A(1)E100         | 20                               | 8                        | 100                        | 1100                             | 3                   | 105                    |
| 20            | 15                | B/3528-21               | T521B156M020A(1)E090         | 30                               | 10                       | 90                         | 1200                             | 3                   | 105                    |
| 20            | 22                | B/3528-21               | T521B226M020A(1)E090         | 44                               | 8                        | 90                         | 1200                             | 3                   | 105                    |
| 20            | 22                | V/7343-19               | T520V226M020A(1)E040         | 44                               | 10                       | 40                         | 2200                             | 3                   | 105                    |
| 20            | 22                | V/7343-19               | T520V226M020A(1)E045         | 44                               | 10                       | 45                         | 2000                             | 3                   | 105                    |
| 20            | 22                | V/7343-19               | T521V226M020A(1)E090         | 44                               | 10                       | 90                         | 1400                             | 3                   | 125                    |
| 20            | 47                | W/7343-15               | T521W476M020A(1)E040         | 94                               | 9                        | 40                         | 2100                             | 3                   | 105                    |
| 20            | 47                | W/7343-15               | T521W476M020A(1)E045         | 94                               | 9                        | 45                         | 2000                             | 3                   | 105                    |
| 20            | 47                | V/7343-19               | T521V476M020A(1)E090         | 94                               | 10                       | 90                         | 1400                             | 3                   | 125                    |
| 20            | 47                | V/7343-19               | T521V476M020A(1)E080         | 94                               | 10                       | 80                         | 1500                             | 3                   | 125                    |
| 20            | 47                | V/7343-19               | T521V476M020A(1)E055         | 94                               | 10                       | 55                         | 1800                             | 3                   | 125                    |
| 20            | 47                | D/7343-31               | T521D476M020A(1)E055         | 94                               | 10                       | 55                         | 2000                             | 3                   | 125                    |
| 20            | 47                | D/7343-31               | T521D476M020A(1)E040         | 94                               | 10                       | 40                         | 2400                             | 3                   | 125                    |
| 20            | 68                | V/7343-19               | T521V686M020A(1)E050         | 136                              | 10                       | 50                         | 1900                             | 3                   | 105                    |
| 20            | 100               | V/7343-19               | T521V107M020A(1)E055         | 200                              | 10                       | 55                         | 1800                             | 3                   | 125                    |
| 20            | 100               | D/7343-31               | T521D107M020A(1)E055         | 200                              | 10                       | 55                         | 2000                             | 3                   | 105                    |
| 25            | 4.7               | P/2012-10               | T529P475M025AAE300           | 35.3                             | 10                       | 300                        | 289                              | 3                   | 105                    |
| 25            | 10                | B/3528-21               | T521B106M025A(1)E100         | 25                               | 8                        | 100                        | 1100                             | 3                   | 105                    |
| 25            | 10                | T/3528-12               | T521T106M025A(1)E100         | 25                               | 8                        | 100                        | 1000                             | 3                   | 125                    |
| 25            | 10                | T/3528-12               | T521T106M025A(1)E060         | 25                               | 8                        | 60                         | 1300                             | 3                   | 125                    |
| 25            | 15                | B/3528-21               | T521B156M025A(1)E100         | 37.5                             | 8                        | 100                        | 1100                             | 3                   | 105                    |
| 25            | 15                | V/7343-19               | T520V156M025A(1)E090         | 37.5                             | 10                       | 90                         | 1400                             | 3                   | 105                    |
| 25            | 15                | V/7343-19               | T521V156M025A(1)E090         | 37.5                             | 10                       | 90                         | 1400                             | 3                   | 105                    |
| 25            | 15                | V/7343-19               | T521V156M025A(1)E040         | 37.5                             | 10                       | 40                         | 2200                             | 3                   | 105                    |
| 25            | 15                | D/7343-31               | T520D156M025A(1)E060         | 37.5                             | 10                       | 60                         | 1900                             | 3                   | 105                    |
| 25            | 15                | D/7343-31               | T520D156M025A(1)E080         | 37.5                             | 10                       | 80                         | 1700                             | 3                   | 105                    |
| 25            | 22                | B/3528-21               | T521B226M025A(1)E100         | 55                               | 8                        | 100                        | 1100                             | 3                   | 105                    |
| 25            | 22                | W/7343-15               | T521W226M025A(1)E040         | 55                               | 10                       | 40                         | 2100                             | 3                   | 105                    |
| 25            | 22                | W/7343-15               | T521W226M025A(1)E070         | 55                               | 10                       | 70                         | 1400                             | 3                   | 105                    |
| 25            | 22                | V/7343-19               | T521V226M025A(1)E040         | 55                               | 10                       | 40                         | 2200                             | 3                   | 105                    |
| 25            | 22                | V/7343-19               | T521V226M025A(1)E045         | 55                               | 10                       | 45                         | 2000                             | 3                   | 105                    |
| 25            | 22                | V/7343-19               | T521V226M025A(1)E060         | 55                               | 10                       | 60                         | 1800                             | 3                   | 105                    |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |

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^ Denotes the large reel (13") is not available.

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**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |
|---------------|-------------------|-------------------------|------------------------------|----------------------------------|--------------------------|----------------------------|----------------------------------|---------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| 25            | 22                | V/7343-19               | T521V226M025A(1)E090         | 55                               | 10                       | 90                         | 1400                             | 3                   | 105                    |
| 25            | 33                | V/7343-19               | T521V336M025A(1)E025         | 82.5                             | 10                       | 25                         | 2700                             | 3                   | 105                    |
| 25            | 33                | V/7343-19               | T521V336M025A(1)E060         | 82.5                             | 10                       | 60                         | 1800                             | 3                   | 105                    |
| 25            | 33                | V/7343-19               | T521V336M025A(1)E040         | 82.5                             | 10                       | 40                         | 2200                             | 3                   | 105                    |
| 25            | 33                | D/7343-31               | T521D336M025A(1)E040         | 82.5                             | 10                       | 40                         | 2400                             | 3                   | 105                    |
| 25            | 33                | D/7343-31               | T521D336M025A(1)E060         | 82.5                             | 10                       | 60                         | 1900                             | 3                   | 105                    |
| 25            | 47                | D/7343-31               | T521D476M025A(1)E065         | 117.5                            | 10                       | 65                         | 1900                             | 3                   | 105                    |
| 25            | 68                | D/7343-31               | T521D686M025A(1)E070         | 170                              | 10                       | 70                         | 1800                             | 3                   | 105                    |
| 25            | 100               | D/7343-31               | T521D107M025A(1)E040         | 250                              | 10                       | 40                         | 2400                             | 3                   | 105                    |
| 25            | 100               | D/7343-31               | T521D107M025A(1)E060         | 250                              | 10                       | 60                         | 1900                             | 3                   | 105                    |
| 25            | 100               | X/7343-43               | T521X107M025A(1)E030         | 250                              | 10                       | 30                         | 2900                             | 3                   | 105                    |
| 25            | 100               | X/7343-43               | T521X107M025A(1)E060         | 250                              | 10                       | 60                         | 2000                             | 3                   | 105                    |
| 35            | 3.3               | B/3528-21               | T521B335M035A(1)E150         | 11.6                             | 8                        | 150                        | 900                              | 3                   | 105                    |
| 35            | 3.3               | B/3528-21               | T521B335M035A(1)E200         | 11.6                             | 8                        | 200                        | 800                              | 3                   | 105                    |
| 35            | 4.7               | B/3528-21               | T521B475M035A(1)E150         | 16.5                             | 8                        | 150                        | 900                              | 3                   | 105                    |
| 35            | 4.7               | B/3528-21               | T521B475M035A(1)E200         | 16.5                             | 8                        | 200                        | 800                              | 3                   | 105                    |
| 35            | 6.8               | T/3528-12               | T521T685M035APE090           | 23.8                             | 10                       | 90                         | 1100                             | 3                   | 125                    |
| 35            | 6.8               | B/3528-21               | T521B685M035A(1)E150         | 23.8                             | 8                        | 150                        | 900                              | 3                   | 105                    |
| 35            | 6.8               | B/3528-21               | T521B685M035A(1)E200         | 23.8                             | 8                        | 200                        | 800                              | 3                   | 105                    |
| 35            | 10                | B/3528-21               | T521B106M035A(1)E150         | 35                               | 8                        | 150                        | 900                              | 3                   | 105                    |
| 35            | 10                | B/3528-21               | T521B106M035A(1)E200         | 35                               | 8                        | 200                        | 800                              | 3                   | 105                    |
| 35            | 10                | V/7343-19               | T521V106M035A(1)E120         | 35                               | 10                       | 120                        | 1200                             | 3                   | 125                    |
| 35            | 15                | V/7343-19               | T521V156M035A(1)E100         | 52.5                             | 10                       | 100                        | 1400                             | 3                   | 125                    |
| 35            | 15                | V/7343-19               | T521V156M035A(1)E125         | 52.5                             | 10                       | 125                        | 1200                             | 3                   | 125                    |
| 35            | 22                | D/7343-31               | T521D226M035A(1)E040         | 77                               | 10                       | 40                         | 2400                             | 3                   | 125                    |
| 35            | 22                | D/7343-31               | T521D226M035A(1)E060         | 77                               | 10                       | 60                         | 1900                             | 3                   | 125                    |
| 35            | 33                | D/7343-31               | T521D336M035A(1)E065         | 115.5                            | 10                       | 65                         | 1900                             | 3                   | 125                    |
| 35            | 47                | X/7343-43               | T521X476M035A(1)E030         | 164.5                            | 10                       | 30                         | 2900                             | 3                   | 125                    |
| 35            | 47                | X/7343-43               | T521X476M035A(1)E070         | 164.5                            | 10                       | 70                         | 1900                             | 3                   | 125                    |
| 35            | 47                | W/7343-15               | T523W476(2)035APE090         | 164.5                            | 10                       | 90                         | 2100                             | 3                   | 85                     |
| 35            | 47                | W/7343-15               | T523W476(2)035APE100         | 164.5                            | 10                       | 100                        | 1988                             | 3                   | 85                     |
| 50            | 0.68              | B/3528-21               | T521B684M050A(1)E200         | 3.4                              | 8                        | 200                        | 800                              | 3                   | 105                    |
| 50            | 1                 | B/3528-21               | T521B105M050A(1)E200         | 5                                | 8                        | 200                        | 800                              | 3                   | 105                    |
| 50            | 1.5               | B/3528-21               | T521B155M050A(1)E200         | 7.5                              | 8                        | 200                        | 800                              | 3                   | 105                    |
| 50            | 2.2               | B/3528-21               | T521B225M050A(1)E200         | 11                               | 8                        | 200                        | 800                              | 3                   | 105                    |
| 50            | 5.6               | D/7343-31               | T521D565M050A(1)E070         | 28                               | 10                       | 70                         | 1800                             | 3                   | 125                    |
| 50            | 5.6               | D/7343-31               | T521D565M050A(1)E090         | 28                               | 10                       | 90                         | 1600                             | 3                   | 125                    |
| 50            | 5.6               | V/7343-19               | T521V565M050A(1)E070         | 28                               | 10                       | 70                         | 1800                             | 3                   | 125                    |
| 50            | 5.6               | V/7343-19               | T521V565M050A(1)E090         | 28                               | 10                       | 90                         | 1600                             | 3                   | 125                    |
| 50            | 6.8               | D/7343-31               | T521D685M050A(1)E070         | 34                               | 10                       | 70                         | 1800                             | 3                   | 125                    |
| 50            | 6.8               | D/7343-31               | T521D685M050A(1)E090         | 34                               | 10                       | 90                         | 1600                             | 3                   | 125                    |
| 50            | 6.8               | V/7343-19               | T521V685M050A(1)E070         | 34                               | 10                       | 70                         | 1800                             | 3                   | 125                    |
| 50            | 6.8               | V/7343-19               | T521V685M050A(1)E090         | 34                               | 10                       | 90                         | 1600                             | 3                   | 125                    |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at 25°C Maximum/<br>5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                       | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |

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(2) To complete KEMET part number, insert M for ± 20% or K for ± 10%. Designates Capacitance tolerance.

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Refer to Ordering Information for additional detail.

**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Capacitance | Case Code/ Case Size | KEMET Part Number            | DC Leakage                    | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |
|---------------|-------------------|----------------------|------------------------------|-------------------------------|--------------------------|----------------------------|----------------------------------|---------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA            | (See below for part options) | µA at 25°C Maximum/ 5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| 50            | 10                | D/7343-31            | T521D106M050A(1)E090         | 50                            | 10                       | 90                         | 1600                             | 3                   | 125                    |
| 50            | 10                | D/7343-31            | T521D106M050A(1)E120         | 50                            | 10                       | 120                        | 1369                             | 3                   | 125                    |
| 50            | 10                | V/7343-19            | T521V106M050A(1)E090         | 50                            | 10                       | 90                         | 1600                             | 3                   | 125                    |
| 50            | 18                | D/7343-31            | T521D186M050A(1)E090         | 90                            | 10                       | 90                         | 1600                             | 3                   | 125                    |
| 50            | 18                | X/7343-43            | T521X186M050A(1)E070         | 90                            | 10                       | 70                         | 1900                             | 3                   | 125                    |
| 50            | 18                | X/7343-43            | T521X186M050A(1)E050         | 90                            | 10                       | 50                         | 2200                             | 3                   | 125                    |
| 50            | 18                | X/7343-43            | T521X186M050A(1)E035         | 90                            | 10                       | 35                         | 2700                             | 3                   | 125                    |
| 50            | 22                | D/7343-31            | T521D226M050A(1)E090         | 110                           | 10                       | 90                         | 1600                             | 3                   | 125                    |
| 50            | 22                | X/7343-43            | T521X226M050A(1)E075         | 110                           | 10                       | 75                         | 1815                             | 3                   | 125                    |
| 50            | 22                | X/7343-43            | T521X226M050A(1)E050         | 110                           | 10                       | 50                         | 2200                             | 3                   | 125                    |
| 50            | 33                | X/7343-43            | T521X336M050A(1)E075         | 165                           | 10                       | 75                         | 1815                             | 3                   | 125                    |
| 50            | 33                | X/7343-43            | T521X336M050A(1)E050         | 165                           | 10                       | 50                         | 2200                             | 3                   | 125                    |
| 63            | 0.68              | B/3528-21            | T521B684M063A(1)E200         | 4.3                           | 8                        | 200                        | 800                              | 3                   | 105                    |
| 63            | 1                 | B/3528-21            | T521B105M063A(1)E200         | 6.3                           | 8                        | 200                        | 800                              | 3                   | 105                    |
| 63            | 1.5               | B/3528-21            | T521B155M063A(1)E200         | 9.5                           | 8                        | 200                        | 800                              | 3                   | 105                    |
| 63            | 4.7               | C/6032-28            | T521C475M063A(1)E200         | 29.6                          | 6                        | 200                        | 900                              | 3                   | 105                    |
| 63            | 4.7               | D/7343-31            | T521D475M063A(1)E300         | 29.61                         | 10                       | 300                        | 900                              | 3                   | 125                    |
| 63            | 4.7               | D/7343-31            | T521D475M063A(1)E075         | 29.6                          | 10                       | 75                         | 1700                             | 3                   | 125                    |
| 63            | 6.8               | X/7343-43            | T521D685M063A(1)E075         | 42.8                          | 10                       | 75                         | 1700                             | 3                   | 125                    |
| 63            | 10                | X/7343-43            | T521X106M063A(1)E050         | 63                            | 10                       | 50                         | 2200                             | 3                   | 125                    |
| 63            | 15                | X/7343-43            | T521X156M063A(1)E035         | 94.5                          | 10                       | 35                         | 2600                             | 3                   | 125                    |
| 63            | 15                | X/7343-43            | T521X156M063A(1)E150         | 94.5                          | 10                       | 150                        | 1300                             | 3                   | 125                    |
| 63            | 22                | X/7343-43            | T521X226M063A(1)E075         | 138.6                         | 10                       | 75                         | 1815                             | 3                   | 125                    |
| 75            | 4.7               | D/7343-31            | T521D475M075A(1)E075         | 35.3                          | 10                       | 75                         | 1700                             | 3                   | 125                    |
| 75            | 10                | X/7343-43            | T521X106M075A(1)E050         | 75                            | 10                       | 50                         | 2200                             | 3                   | 125                    |
| 75            | 15                | X/7343-43            | T521X156M075A(1)E035         | 112.5                         | 10                       | 35                         | 2600                             | 3                   | 125                    |
| VDC at 105°C  | µF                | KEMET/EIA            | (See below for part options) | µA at 25°C Maximum/ 5 Minutes | % at 25°C 120 Hz Maximum | mΩ at 25°C 100 kHz Maximum | mA at +45°C 100 kHz              | Reflow Temp ≤ 260°C | °C                     |
| Rated Voltage | Rated Capacitance | Case Code/ Case Size | KEMET Part Number            | DC Leakage                    | DF                       | ESR                        | Maximum Allowable Ripple Current | MSL                 | Maximum Operating Temp |

(1) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, H = Standard Solder coated (SnPb 5% Pb minimum), N = Non-Magnetic 100% Tin (Sn), M = Non-Magnetic (SnPb). Refer to Ordering Information for additional detail.

(2) To complete KEMET part number, insert M for ± 20% or K for ± 10%. Designates Capacitance tolerance.

Higher voltage ratings and tighter ESR may be substituted within the same size at KEMET's option. Voltage substitutions will be marked with the higher voltage rating. Substitutions can include better than series.

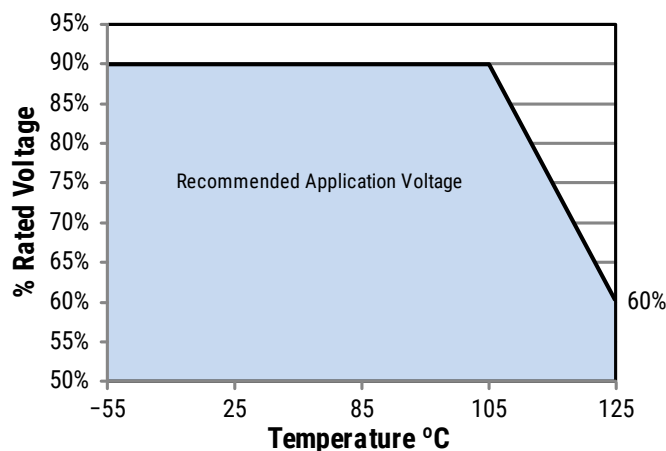
Part numbers marked in blue font are not recommended for new designs. Please use the T521 series instead.

Part numbers marked in orange font are not recommended for new designs. Please contact your KEMET representative for a replacement part.

^ Denotes the large reel (13") is not available.

Refer to Ordering Information for additional detail.

## Derating Guidelines



### Recommended Application Voltage

KOCAP's are solid state capacitors that demonstrate no wearout mechanism when operated within their recommended guidelines. While the KOCAP can be operated at full rated voltage, most circuit designers seek a minimum level of assurance in long term reliability which should be demonstrated with data. A voltage derating can provide the desired level of demonstrated reliability based on industry accepted acceleration models. Since most applications do require long term reliability, KEMET recommends that designers consider a voltage derating, according to the graphic above, for the maximum steady state voltage.

| Voltage Rating        | Maximum Recommended Steady State Voltage |                       |
|-----------------------|------------------------------------------|-----------------------|
|                       | -55°C to 105°C                           | 105°C to 125°C        |
| 75 V ≤ V <sub>R</sub> | 90% of V <sub>R</sub>                    | 60% of V <sub>R</sub> |

V<sub>R</sub> = Rated Voltage

## Ripple Current/Ripple Voltage

Permissible AC ripple voltage and current are related to equivalent series resistance (ESR) and the power dissipation capabilities of the device. Permissible AC ripple voltage which may be applied is limited by two criteria:

- The positive peak AC voltage plus the DC bias voltage, if any, must not exceed the DC voltage rating of the capacitor.
- The negative peak AC voltage, in combination with bias voltage, if any, must not exceed the allowable limits specified for reverse voltage.

The maximum power dissipation must be reduced with increasing environmental operating temperatures. Refer to the table below for temperature compensation requirements.

| Temperature Compensation Multipliers for Maximum Ripple Current |                  |                  |
|-----------------------------------------------------------------|------------------|------------------|
| T ≤ 45°C                                                        | 45° C < T ≤ 85°C | 85°C < T ≤ 125°C |
| 1.00                                                            | 0.70             | 0.25             |

T = Environmental Temperature

## Surge Voltage

Surge voltage is the maximum voltage (peak value) which may be applied to the capacitor. The surge voltage must not be applied for periodic charging and discharging in course of normal operation and cannot be part of the application voltage. Surge voltage capability is demonstrated by application of 1,000 cycles at operating temperature. The parts are charged through a 33 Ohm resistor for 30 seconds and then discharged through a 33 Ohm resistor for each cycle.

| Rated Voltage (V) | Surge Voltage (V) | Derated Voltage (V) | Derated Surge Voltage (V) |
|-------------------|-------------------|---------------------|---------------------------|
| -55°C to 105°C    |                   | Up to 125°C         |                           |
| 2.5               | 3.3               | 1.7                 | 2.2                       |
| 6.3               | 8.2               | 4.2                 | 5.5                       |
| 10                | 13.0              | 6.7                 | 8.7                       |
| 16                | 20.8              | 10.7                | 13.9                      |
| 20                | 26.0              | 13.4                | 17.4                      |
| 25                | 32.5              | 16.8                | 21.8                      |
| 35                | 45.5              | 23.5                | 30.5                      |
| 50                | 65.0              | 33.5                | 43.6                      |

## Reverse Voltage

Polymer electrolytic capacitors are polar devices and may be permanently damaged or destroyed if connected in the wrong polarity. These devices will withstand a small degree of transient voltage reversal for short periods as shown in the below table.

| Temperature | Permissible Transient Reverse Voltage |
|-------------|---------------------------------------|
| 25°C        | 15% of Rated Voltage                  |
| 55°C        | 10% of Rated Voltage                  |
| 85°C        | 5% of Rated Voltage                   |
| 105°C       | 3% of Rated Voltage                   |
| 125°C*      | 1% of Rated Voltage                   |

\*For series rated to 125°C

**Table 2 – Land Dimensions/Courtyard**

T520/T521/T523/T525/T530

| KEMET          | Metric Size Code | Density Level A:<br>Maximum (Most) Land Protrusion (mm) |      |      |       |      | Density Level B:<br>Median (Nominal) Land Protrusion (mm) |      |      |      |      | Density Level C:<br>Minimum (Least) Land Protrusion (mm) |      |      |      |      |
|----------------|------------------|---------------------------------------------------------|------|------|-------|------|-----------------------------------------------------------|------|------|------|------|----------------------------------------------------------|------|------|------|------|
|                |                  | W                                                       | L    | S    | V1    | V2   | W                                                         | L    | S    | V1   | V2   | W                                                        | L    | S    | V1   | V2   |
| A              | 3216-18          | 1.35                                                    | 2.20 | 0.62 | 6.02  | 2.80 | 1.23                                                      | 1.80 | 0.82 | 4.92 | 2.30 | 1.13                                                     | 1.42 | 0.98 | 4.06 | 2.04 |
| B              | 3528-21          | 2.35                                                    | 2.21 | 0.92 | 6.32  | 4.00 | 2.23                                                      | 1.80 | 1.12 | 5.22 | 3.50 | 2.13                                                     | 1.42 | 1.28 | 4.36 | 3.24 |
| C              | 6032-28          | 2.35                                                    | 2.77 | 2.37 | 8.92  | 4.50 | 2.23                                                      | 2.37 | 2.57 | 7.82 | 4.00 | 2.13                                                     | 1.99 | 2.73 | 6.96 | 3.74 |
| D              | 7343-31          | 2.55                                                    | 2.77 | 3.67 | 10.22 | 5.60 | 2.43                                                      | 2.37 | 3.87 | 9.12 | 5.10 | 2.33                                                     | 1.99 | 4.03 | 8.26 | 4.84 |
| H              | 7360-20          | 4.25                                                    | 2.77 | 3.67 | 10.22 | 7.30 | 4.13                                                      | 2.37 | 3.87 | 9.12 | 6.80 | 4.03                                                     | 1.99 | 4.03 | 8.26 | 6.54 |
| J              | 7360-15          | 4.60                                                    | 3.07 | 3.07 | 10.22 | 7.30 | 4.48                                                      | 2.67 | 3.27 | 9.12 | 6.80 | 4.38                                                     | 2.29 | 3.43 | 8.26 | 6.54 |
| L              | 6032-19          | 2.35                                                    | 2.77 | 2.37 | 8.92  | 4.50 | 2.23                                                      | 2.37 | 2.57 | 7.82 | 4.00 | 2.13                                                     | 1.99 | 2.73 | 6.96 | 3.74 |
| M              | 3528-15          | 2.35                                                    | 2.20 | 0.92 | 6.32  | 4.00 | 2.23                                                      | 1.80 | 1.12 | 5.22 | 3.50 | 2.13                                                     | 1.42 | 1.28 | 4.36 | 3.24 |
| Q              | 7343-12          | 2.55                                                    | 2.77 | 3.67 | 10.22 | 5.60 | 2.43                                                      | 2.37 | 3.87 | 9.12 | 5.10 | 2.33                                                     | 1.99 | 4.03 | 8.26 | 4.84 |
| T              | 3528-12          | 2.35                                                    | 2.20 | 0.92 | 6.32  | 4.00 | 2.23                                                      | 1.80 | 1.12 | 5.22 | 3.50 | 2.13                                                     | 1.42 | 1.28 | 4.36 | 3.24 |
| U              | 6032-15          | 2.35                                                    | 2.77 | 2.37 | 8.92  | 4.50 | 2.23                                                      | 2.37 | 2.57 | 7.82 | 4.00 | 2.13                                                     | 1.99 | 2.73 | 6.96 | 3.74 |
| V              | 7343-21          | 2.55                                                    | 2.77 | 3.67 | 10.22 | 5.60 | 2.43                                                      | 2.37 | 3.87 | 9.12 | 5.10 | 2.33                                                     | 1.99 | 4.03 | 8.26 | 4.84 |
| W              | 7343-15          | 2.55                                                    | 2.77 | 3.67 | 10.22 | 5.60 | 2.43                                                      | 2.37 | 3.87 | 9.12 | 5.10 | 2.33                                                     | 1.99 | 4.03 | 8.26 | 4.84 |
| X <sup>1</sup> | 7343-43          | 2.55                                                    | 2.77 | 3.67 | 10.22 | 5.60 | 2.43                                                      | 2.37 | 3.87 | 9.12 | 5.10 | 2.33                                                     | 1.99 | 4.03 | 8.26 | 4.84 |
| Y <sup>1</sup> | 7343-40          | 2.55                                                    | 2.77 | 3.67 | 10.22 | 5.60 | 2.43                                                      | 2.37 | 3.87 | 9.12 | 5.10 | 2.33                                                     | 1.99 | 4.03 | 8.26 | 4.84 |

**Density Level A:** For low-density product applications. Recommended for wave solder applications and provides a wider process window for reflow solder processes.

**Density Level B:** For products with a moderate level of component density. Provides a robust solder attachment condition for reflow solder processes.

**Density Level C:** For high component density product applications. Before adapting the minimum land pattern variations the user should perform qualification testing based on the conditions outlined in IPC standard 7351 (IPC-7351).

<sup>1</sup> Height of these chips may create problems in wave soldering.

<sup>2</sup> Land pattern geometry is too small for silkscreen outline.

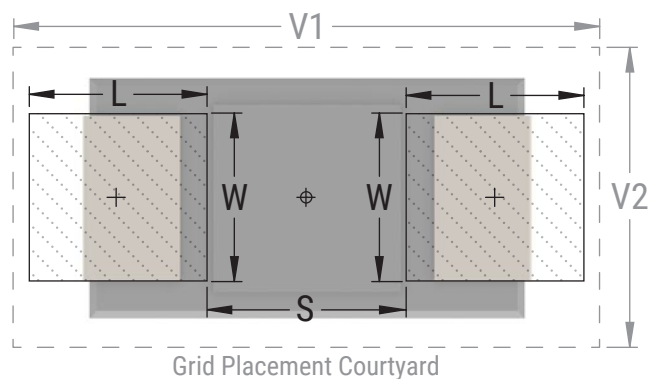
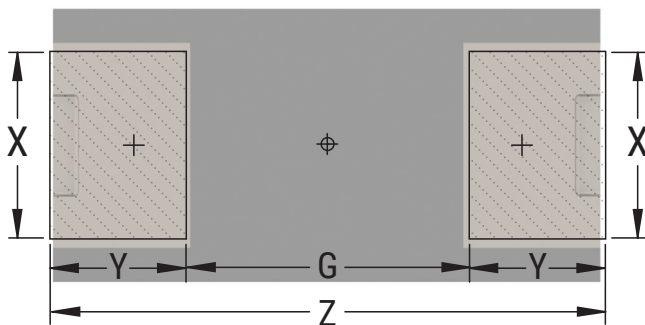


**Table 2 – Land Dimensions/Courtyard cont'd**

**T527**

| KEMET | Metric Size Code | Dimensions (mm)<br>Minimum – Maximum |             |            |            |
|-------|------------------|--------------------------------------|-------------|------------|------------|
| Case  | EIA              | G                                    | Z           | X          | Y          |
| I     | 3216-10          | 1.00 – 1.65                          | 3.25 – 3.80 | 1.1 – 1.30 | 0.8 – 1.40 |

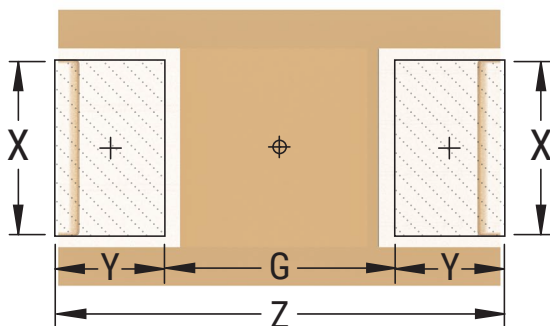
(JEITA RC-2371 is recommended for reference)



**T529**

| KEMET | Metric Size Code | Dimensions (mm)<br>Minimum – Maximum |             |             |            |
|-------|------------------|--------------------------------------|-------------|-------------|------------|
| Case  | EIA              | G                                    | Z           | X           | Y          |
| I     | 3216-10          | 1.00 – 1.65                          | 3.25 – 3.80 | 1.1 – 1.30  | 0.8 – 1.40 |
| P     | 2012-10          | 0.40 – 1.05                          | 2.05 – 2.60 | 0.80 – 1.00 | 0.5 – 1.1  |

(JEITA RC-2371 is recommended for reference)



## Soldering Process

The KEMET families of surface mount capacitors are compatible with wave (single or dual), convection, IR, or vapor phase reflow techniques. Preheating of these components is recommended to avoid extreme thermal stress. KEMET's recommended profile conditions for convection and IR reflow reflect the profile conditions of the IPC/J-STD-020D standard for moisture sensitivity testing. The devices can safely withstand a maximum of three reflow passes at these conditions.

Please note that although the X/7343-43 case size can withstand wave soldering, the tall profile (4.3 mm maximum) dictates care in wave process development.

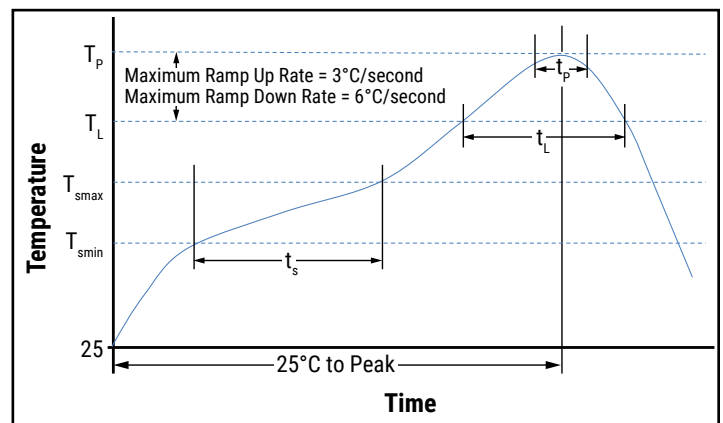
Hand soldering should be performed with care due to the difficulty in process control. If performed, care should be taken to avoid contact of the soldering iron to the molded case. The iron should be used to heat the solder pad, applying solder between the pad and the termination, until reflow occurs. Once reflow occurs, the iron should be removed immediately. "Wiping" the edges of a chip and heating the top surface is not recommended.

| Profile Feature                                       | SnPb Assembly       | Pb-Free Assembly    |
|-------------------------------------------------------|---------------------|---------------------|
| <b>Preheat/Soak</b>                                   |                     |                     |
| Temperature Minimum ( $T_{smin}$ )                    | 100°C               | 150°C               |
| Temperature Maximum ( $T_{smax}$ )                    | 150°C               | 200°C               |
| Time ( $t_s$ ) from $T_{smin}$ to $T_{smax}$          | 60 – 120 seconds    | 60 – 120 seconds    |
| Ramp-up Rate ( $T_L$ to $T_P$ )                       | 3°C/seconds maximum | 3°C/seconds maximum |
| Liquidous Temperature ( $T_L$ )                       | 183°C               | 217°C               |
| Time Above Liquidous ( $t_L$ )                        | 60 – 150 seconds    | 60 – 150 seconds    |
| Peak Temperature ( $T_P$ )                            | 220°C*<br>235°C**   | 250°C*<br>260°C**   |
| Time within 5°C of Maximum Peak Temperature ( $t_p$ ) | 20 seconds maximum  | 30 seconds maximum  |
| Ramp-down Rate ( $T_P$ to $T_L$ )                     | 6°C/seconds maximum | 6°C/seconds maximum |
| Time 25°C to Peak Temperature                         | 6 minutes maximum   | 8 minutes maximum   |

*Note: All temperatures refer to the center of the package, measured on the package body surface that is facing up during assembly reflow.*

\* For Case Size height > 2.5 mm

\*\* For Case Size height ≤ 2.5 mm



## Storage

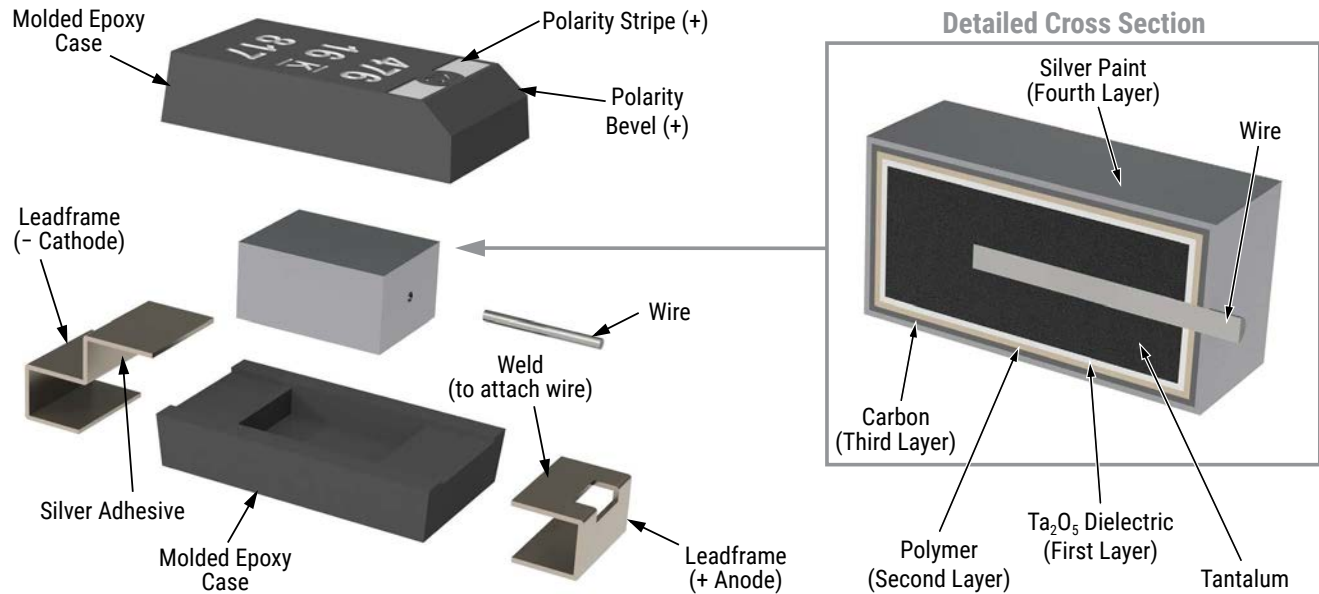
All KO-CAP Series are shipped in moisture barrier bags (MBBs) with desiccant and humidity indicator card (HIC). These parts are classified as MSL3 (Moisture Sensitivity Level 3) per IPC/JEDEC J-STD-020 and packaged per IPC/JEDEC J-STD-033. MSL3 specifies a floor time of 168H at 30°C maximum temperature and 60% relative humidity. Unused capacitors should be sealed in a MBB with fresh desiccant.

The calculated shelf life in a sealed bag would be 12 months from a bag seal date in a storage environment of < 40°C and humidity < 90% RH. It should be 24 months from a bag seal date in a storage environment of < 30°C and humidity < 70% RH.

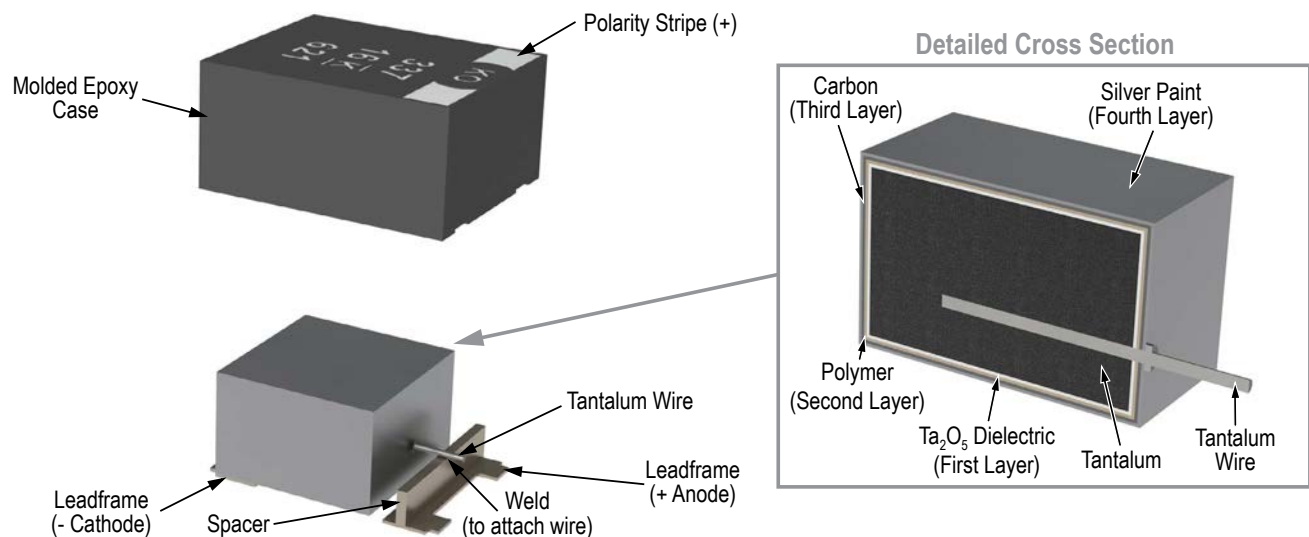
If baking is required, refer to IPC/JEDEC J-STD-033 for bake procedure.

## Construction

### T520/T521/T525/T530

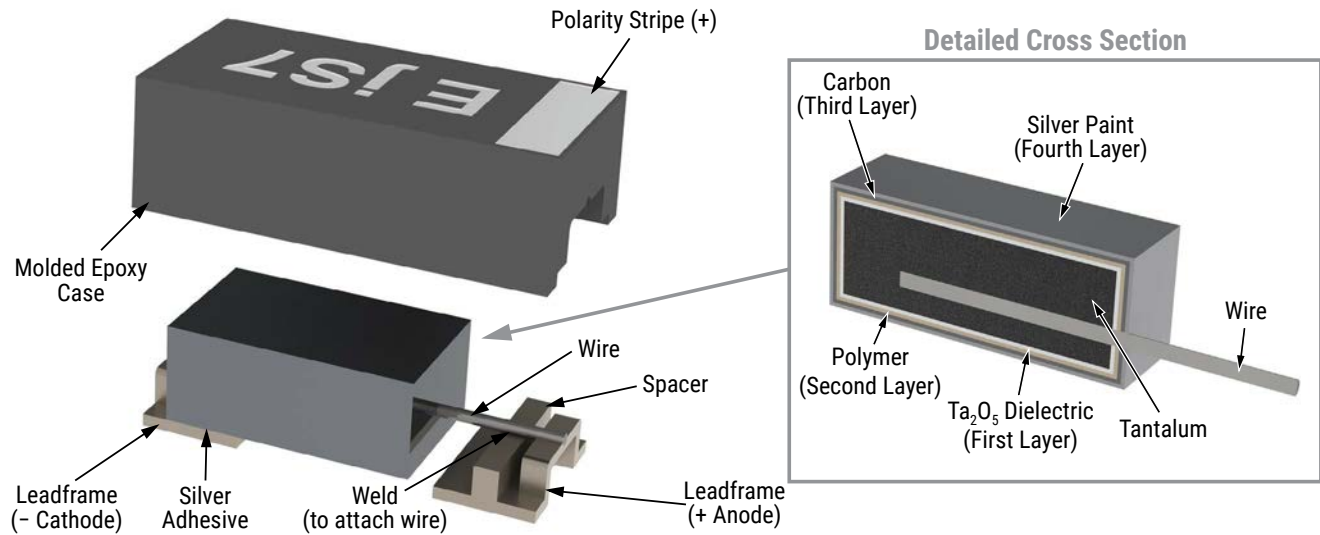


### T523

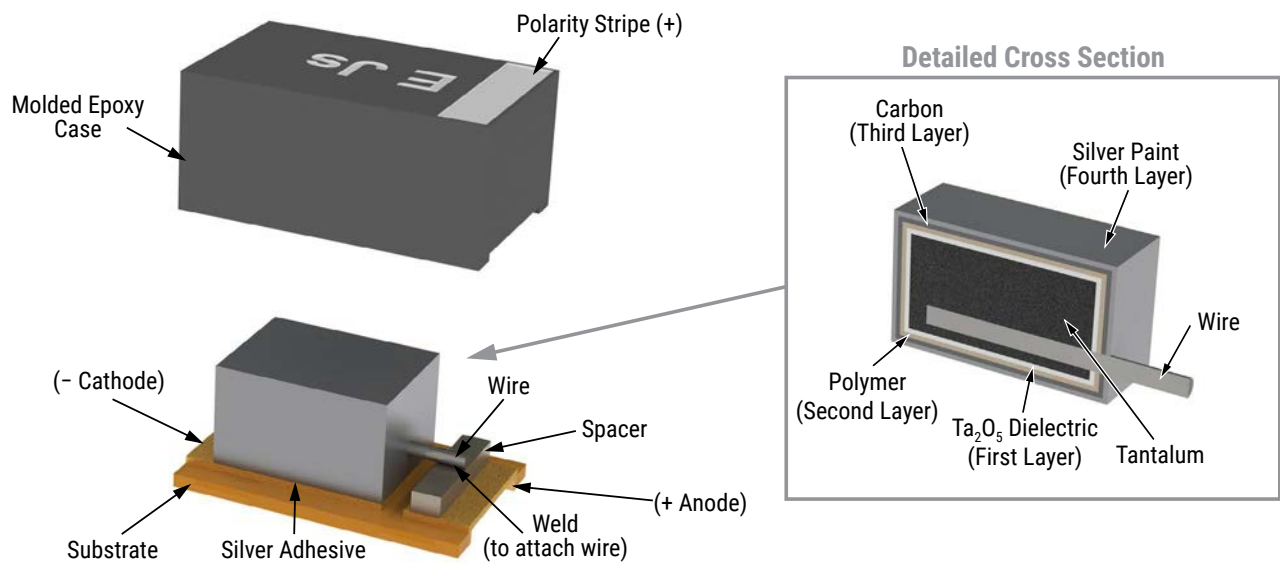


## Construction cont'd

### T527

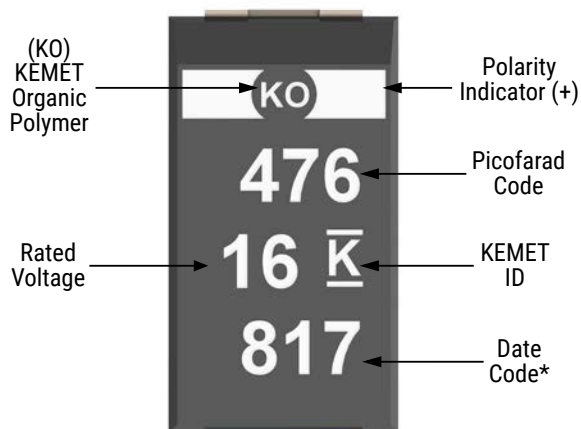


### T529



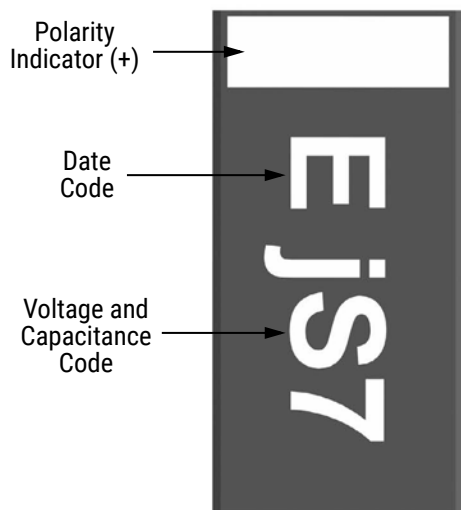
## Capacitor Marking

### T520/T521/T523/T525/T530



\* 817 = 17<sup>th</sup> week of 2018

| Date Code*                                                   |                                                                                    |
|--------------------------------------------------------------|------------------------------------------------------------------------------------|
| 1 <sup>st</sup> digit = Last number of Year                  | 4 = 2014<br>5 = 2015<br>6 = 2016<br>7 = 2017<br>8 = 2018                           |
| 2 <sup>nd</sup> and 3 <sup>rd</sup> digit = Week of the Year | 01 = 1 <sup>st</sup> week of the Year to<br>52 = 52 <sup>nd</sup> week of the Year |



### T520A/T527

| Code          | e     | g   | j   | A    |
|---------------|-------|-----|-----|------|
| Rated Voltage | 2.5 V | 4 V | 6 V | 10 V |

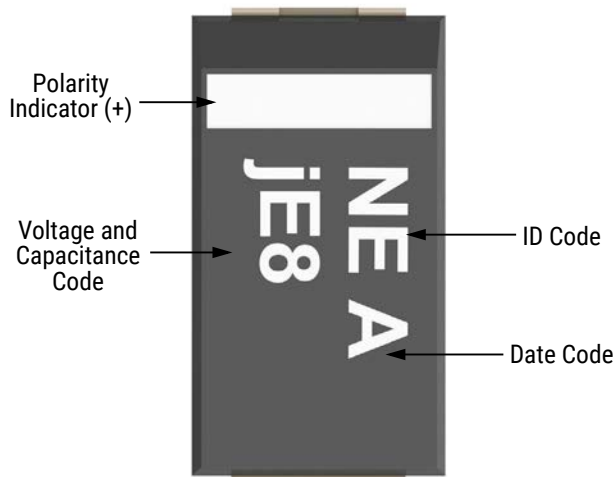
| Code        | A7 | E7 | J7 | N7 | S7 |
|-------------|----|----|----|----|----|
| Capacitance | 10 | 15 | 22 | 33 | 47 |

| Code        | W7 | A8  | E8  | J8  | N8  |
|-------------|----|-----|-----|-----|-----|
| Capacitance | 68 | 100 | 150 | 220 | 330 |

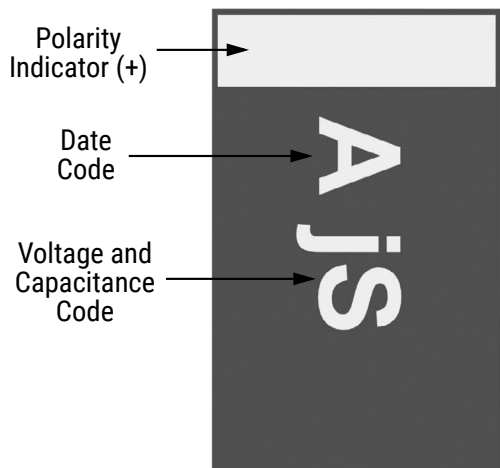
| Date Code* |     |     |     |     |     |     |     |     |     |     |     |     |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|            | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| 2015       | a   | b   | c   | d   | e   | f   | g   | h   | j   | k   | l   | m   |
| 2016       | n   | p   | q   | r   | s   | t   | u   | v   | w   | x   | y   | z   |
| 2017       | A   | B   | C   | D   | E   | F   | G   | H   | J   | K   | L   | M   |
| 2018       | N   | P   | Q   | R   | S   | T   | U   | V   | W   | X   | Y   | Z   |

## Capacitor Marking cont'd

### T520B/T520T



### T529



| Code          | J   | A    |
|---------------|-----|------|
| Rated Voltage | 6 V | 10 V |

| Code        | j  | s  | a   |
|-------------|----|----|-----|
| Capacitance | 22 | 47 | 100 |

| Date Code* |     |     |     |     |     |     |     |     |     |     |     |     |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|            | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| 2015       | a   | b   | c   | d   | e   | f   | g   | h   | j   | k   | l   | m   |
| 2016       | n   | p   | q   | r   | s   | t   | u   | v   | w   | x   | y   | z   |
| 2017       | A   | B   | C   | D   | E   | F   | G   | H   | J   | K   | L   | M   |
| 2018       | N   | P   | Q   | R   | S   | T   | U   | V   | W   | X   | Y   | Z   |

## Tape & Reel Packaging Information

KEMET's molded chip capacitor families are packaged in 8 and 12 mm plastic tape on 7" and 13" reels in accordance with *EIA Standard 481: Embossed Carrier Taping of Surface Mount Components for Automatic Handling*. This packaging system is compatible with all tape-fed automatic pick-and-place systems.

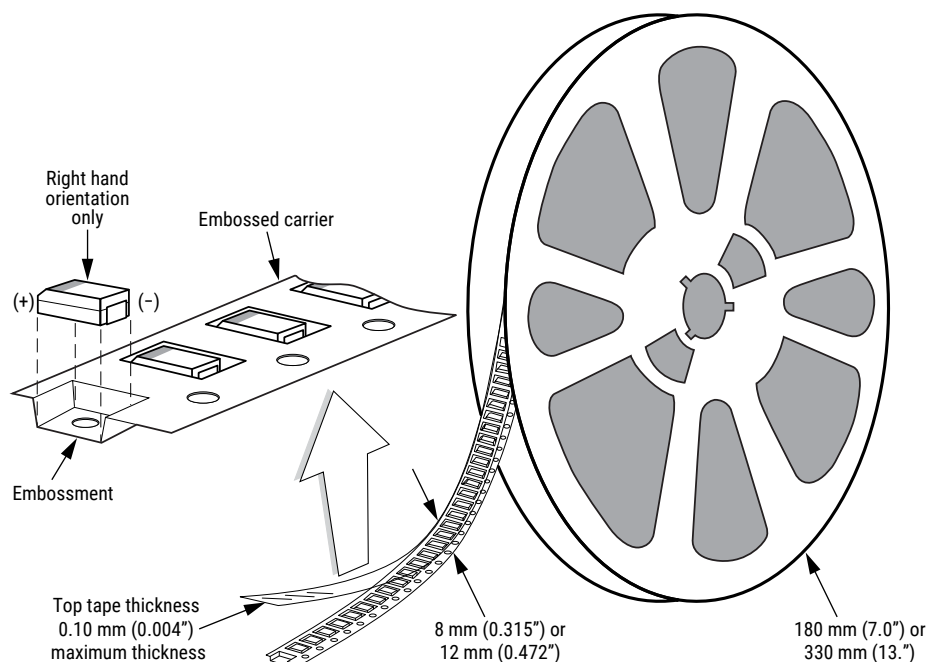


**Table 3 – Packaging Quantity**

| Case Code |         | Tape Width (mm) | 7" Reel* | 13" Reel* |
|-----------|---------|-----------------|----------|-----------|
| KEMET     | EIA     |                 |          |           |
| S         | 3216-12 | 8               | 2,500    | 10,000    |
| T         | 3528-12 | 8               | 3,000    | 10,000    |
| M         | 3528-15 | 8               | 2,500    | 8,000     |
| U         | 6032-15 | 12              | 1,000    | 5,000     |
| L         | 6032-19 | 12              | 1,000    | 3,000     |
| W         | 7343-15 | 12              | 1,000    | 3,000     |
| Z         | 7343-17 | 12              | 1,000    | 3,000     |
| V         | 7343-20 | 12              | 1,000    | 3,000     |
| A         | 3216-18 | 8               | 2,000    | –         |
| B         | 3528-21 | 8               | 2,000    | 8,000     |
| C         | 6032-28 | 12              | 500      | 3,000     |
| D         | 7343-31 | 12              | 500      | 2,500     |
| Q         | 7343-12 | 12              | 1,000    | 3,000     |
| Y         | 7343-40 | 12              | 500      | 2,000     |
| X         | 7343-43 | 12              | 500      | 2,000     |
| E/T428P   | 7360-38 | 12              | 500      | 2,000     |
| H         | 7360-20 | 12              | 1,000    | 2,500     |
| O         | 7360-43 | 12              | 250      | 1,000     |

\* No C-Spec required for 7" reel packaging. C-7280 required for 13" reel packaging.

**Figure 1 – Embossed (Plastic) Carrier Tape Dimensions**

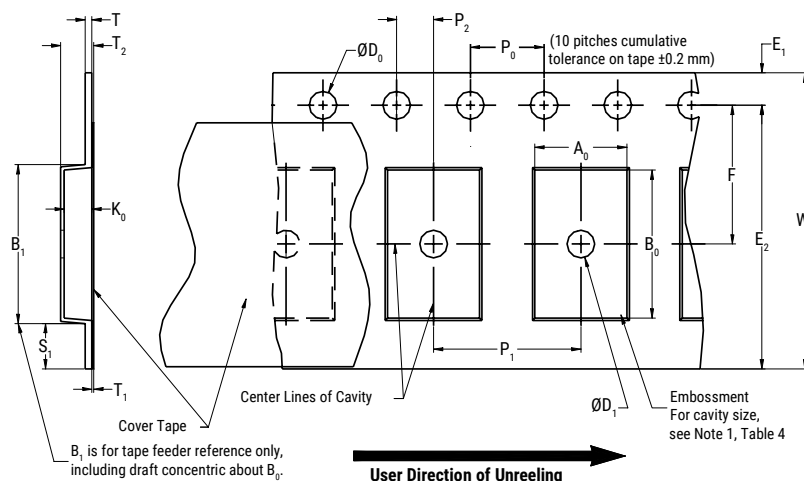


**Table 4 – Embossed (Plastic) Carrier Tape Dimensions**

Metric will govern

| Constant Dimensions – Millimeters (Inches) |                                      |                                  |                            |                           |                           |                       |                                  |                  |                        |
|--------------------------------------------|--------------------------------------|----------------------------------|----------------------------|---------------------------|---------------------------|-----------------------|----------------------------------|------------------|------------------------|
| Tape Size                                  | D <sub>0</sub>                       | D <sub>1</sub> Minimum<br>Note 1 | E <sub>1</sub>             | P <sub>0</sub>            | P <sub>2</sub>            | R Reference<br>Note 2 | S <sub>1</sub> Minimum<br>Note 3 | T Maximum        | T <sub>1</sub> Maximum |
| 8 mm                                       | 1.5 +0.10/-0.0<br>(0.059+0.004/-0.0) | 1.0<br>(0.039)                   | 1.75±0.10<br>(0.069±0.004) | 4.0±0.10<br>(0.157±0.004) | 2.0±0.05<br>(0.079±0.002) | 25.0<br>(0.984)       | 0.600<br>(0.024)                 | 0.600<br>(0.024) | 0.100<br>(0.004)       |
| 12 mm                                      |                                      | 1.5<br>(0.059)                   |                            |                           |                           | 30<br>(1.181)         |                                  |                  |                        |

| Variable Dimensions – Millimeters (Inches) |                                     |                                  |                        |                           |                                                                                  |                        |                 |                                                  |
|--------------------------------------------|-------------------------------------|----------------------------------|------------------------|---------------------------|----------------------------------------------------------------------------------|------------------------|-----------------|--------------------------------------------------|
| Tape Size                                  | Pitch                               | B <sub>1</sub> Maximum<br>Note 4 | E <sub>2</sub> Minimum | F                         | P <sub>1</sub>                                                                   | T <sub>2</sub> Maximum | W Maximum       | A <sub>0</sub> , B <sub>0</sub> & K <sub>0</sub> |
| 8 mm                                       | Single (4 mm)                       | 4.35<br>(0.171)                  | 6.25<br>(0.246)        | 3.5±0.05<br>(0.138±0.002) | 2.0±0.05 or 4.0±0.10<br>(0.079±0.002 or 0.157±0.004)                             | 2.5<br>(0.098)         | 8.3<br>(0.327)  | Note 5                                           |
| 12 mm                                      | Single (4 mm)<br>& Double<br>(8 mm) | 8.2<br>(0.323)                   | 10.25<br>(0.404)       | 5.5±0.05<br>(0.217±0.002) | 2.0±0.05 (0.079±0.002) or<br>4.0±0.10 (0.157±0.004) or<br>8.0±0.10 (0.315±0.004) | 4.6<br>(0.181)         | 12.3<br>(0.484) |                                                  |

1. The embossment hole location shall be measured from the sprocket hole controlling the location of the embossment. Dimensions of embossment location and hole location shall be applied independent of each other.
2. The tape, with or without components, shall pass around R without damage (see Figure 4).
3. If S<sub>1</sub> < 1.0 mm, there may not be enough area for cover tape to be properly applied (see EIA Standard 481-D, paragraph 4.3, section b).
4. B<sub>1</sub> dimension is a reference dimension for tape feeder clearance only.
5. The cavity defined by A<sub>0</sub>, B<sub>0</sub> and K<sub>0</sub> shall surround the component with sufficient clearance that:
  - (a) the component does not protrude above the top surface of the carrier tape.
  - (b) the component can be removed from the cavity in a vertical direction without mechanical restriction, after the top cover tape has been removed.
  - (c) rotation of the component is limited to 20° maximum for 8 and 12 mm tapes (see Figure 2).
  - (d) lateral movement of the component is restricted to 0.5 mm maximum for 8 mm and 12 mm wide tape (see Figure 3).
  - (e) see Addendum in EIA Standard 481-D for standards relating to more precise taping requirements.

## Packaging Information Performance Notes

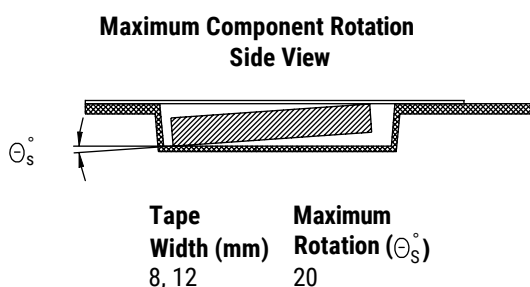
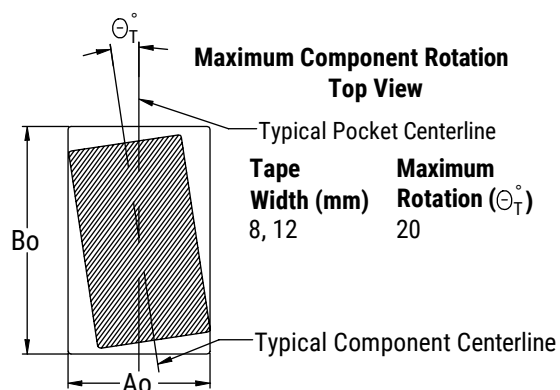
- 1. Cover Tape Break Force:** 1.0 Kg minimum.
- 2. Cover Tape Peel Strength:** The total peel strength of the cover tape from the carrier tape shall be:

| Tape Width | Peel Strength                    |
|------------|----------------------------------|
| 8 mm       | 0.1 to 1.0 Newton (10 to 100 gf) |
| 12 mm      | 0.1 to 1.3 Newton (10 to 130 gf) |

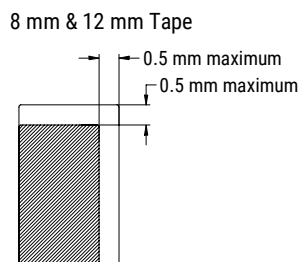
The direction of the pull shall be opposite the direction of the carrier tape travel. The pull angle of the carrier tape shall be 165° to 180° from the plane of the carrier tape. During peeling, the carrier and/or cover tape shall be pulled at a velocity of 300 ±10 mm/minute.

- 3. Labeling:** Bar code labeling (standard or custom) shall be on the side of the reel opposite the sprocket holes. Refer to EIA Standards 556 and 624.

## Figure 2 – Maximum Component Rotation



## Figure 3 – Maximum Lateral Movement



## Figure 4 – Bending Radius

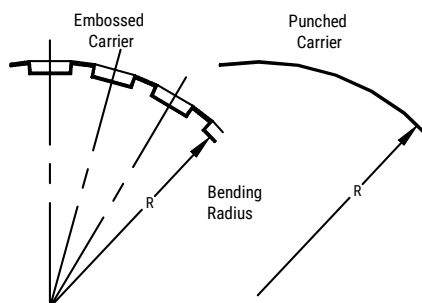
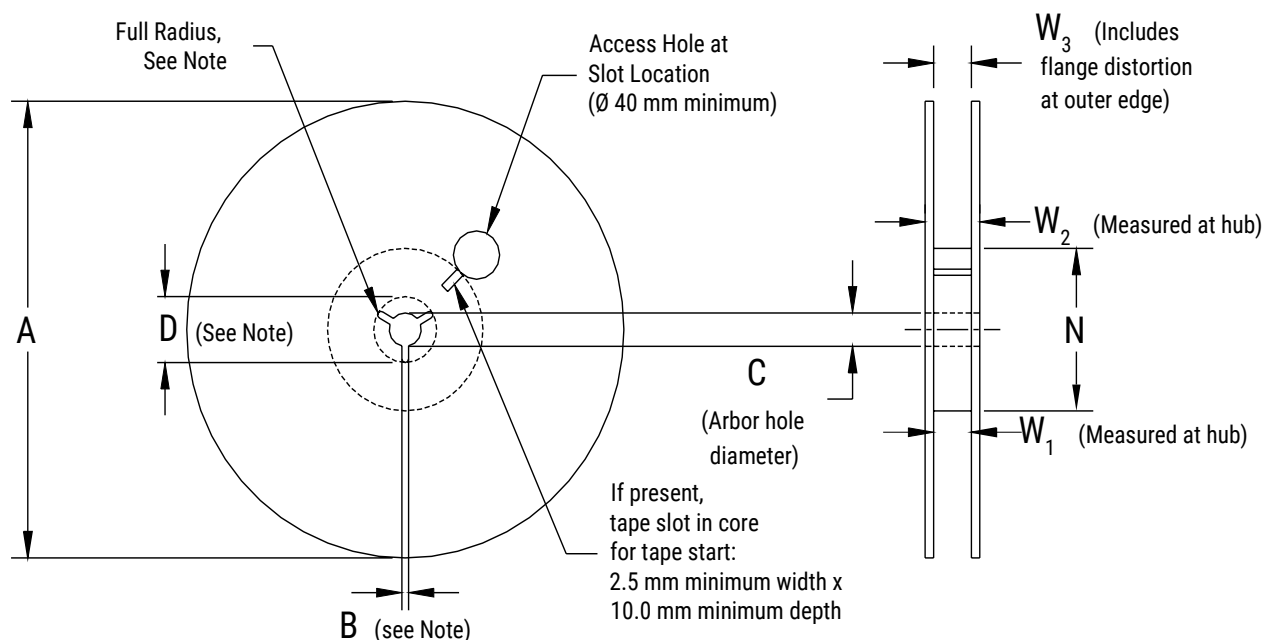


**Figure 5 – Reel Dimensions**



Note: Drive spokes optional; if used, dimensions B and D shall apply.

**Table 5 – Reel Dimensions**

Metric will govern

| Constant Dimensions – Millimeters (Inches) |                                                               |                                     |                                      |                                                   |
|--------------------------------------------|---------------------------------------------------------------|-------------------------------------|--------------------------------------|---------------------------------------------------|
| Tape Size                                  | A                                                             | B Minimum                           | C                                    | D Minimum                                         |
| 8 mm                                       | 178±0.20<br>(7.008±0.008)<br>or<br>330±0.20<br>(13.000±0.008) | 1.5<br>(0.059)                      | 13.0+0.5/-0.2<br>(0.521+0.02/-0.008) | 20.2<br>(0.795)                                   |
| 12 mm                                      |                                                               |                                     |                                      |                                                   |
| Variable Dimensions – Millimeters (Inches) |                                                               |                                     |                                      |                                                   |
| Tape Size                                  | N Minimum                                                     | W <sub>1</sub>                      | W <sub>2</sub> Maximum               | W <sub>3</sub>                                    |
| 8 mm                                       | 50<br>(1.969)                                                 | 8.4+1.5/-0.0<br>(0.331+0.059/-0.0)  | 14.4<br>(0.567)                      | Shall accommodate tape width without interference |
| 12 mm                                      |                                                               | 12.4+2.0/-0.0<br>(0.488+0.078/-0.0) | 18.4<br>(0.724)                      |                                                   |

**Figure 6 – Tape Leader & Trailer Dimensions**

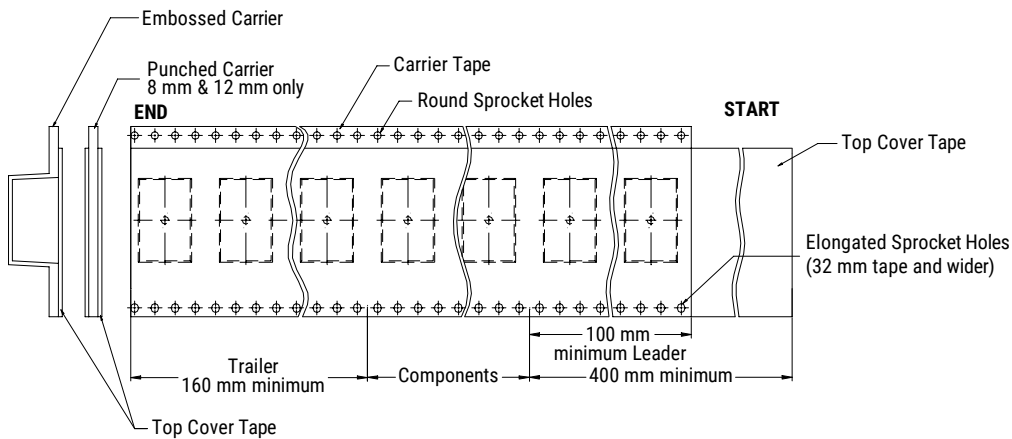
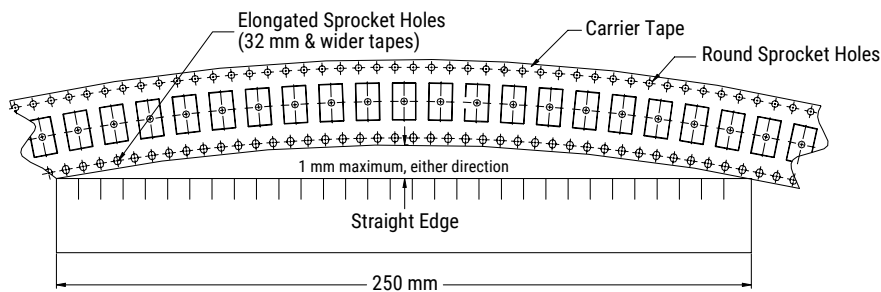


**Figure 7 – Maximum Camber**



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