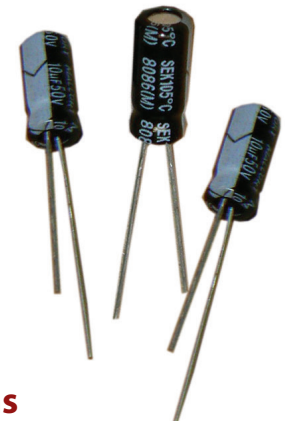
# THE DATASHEET OF

# SEK103M6R3ST

# Type SEK 105 °C Radial Leaded Aluminum Electrolytic Capacitors

## Long Life, Aluminum Electrolytic



Type SEK is a radial leaded aluminum electrolytic capacitor with a +105 ° C, long life rating. The volumetic efficient high CV product of the SEK makes it ideal for high density packaging in general purpose, coupling, decoupling, bypass and filtering circuit applications.

## Highlights

- +105 °C
- Long life
- High CV product
- General purpose applications
- Available in T&R and ammo pack

## Specifications

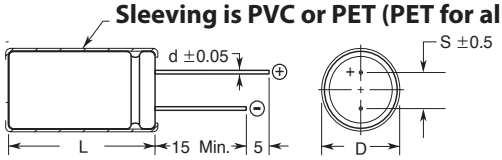
| | |
|---|---|
| **Capacitance Range** | 0.47 to 15,000 µF |
| **Capacitance Tolerance** | ±20% |
| **Rated Voltage** | 6.3 to 450 Vdc |
| **Operating Temperature Range** | –55 °C to +105 °C; 6.3 to 100 Vdc<br>–40 °C to +105 °C; 160 to 400 Vdc<br>–25 °C to +105 °C; 450 Vdc |
| **Maximum DC Leakage Current** | After 2 minutes, with rated voltage at +20 °C<br>6.3 to 100 Vdc<br>I = .01CV or 3 µA Max (whichever is greater)<br>≥ 160 Vdc after 3 min, with rated voltage at +20 °C<br>I = .03CV or 10 µA Max (whichever is greater)<br>C = Capacitance in (µF)<br>V = Rated voltage<br>I = Leakage current in µA |
| **Dissipation Factor @ 120 Hz, +25 °C** | <table><tr><td>**WV (V)**</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80</td><td>100</td><td>160-250</td><td>350-450</td></tr><tr><td>**DF(%)**</td><td>26</td><td>22</td><td>18</td><td>16</td><td>14</td><td>12</td><td>10</td><td>10</td><td>10</td><td>15</td><td>20</td></tr></table><br>For capacitors whose capacitance value exceeds 1000 µF, the value of DF (%) is increased 2% for every additional 1000 µF. |
| **Ripple Multipliers for Voltage and Temperature:** | <table><tr><th>Rated WVDC</th><th colspan="4">Ripple Multipliers</th></tr><tr><th></th><th>60Hz</th><th>120Hz</th><th>1kHz</th><th>10kHz</th></tr><tr><td>**6 to 25**</td><td>0.80</td><td>1.0</td><td>1.1</td><td>1.2</td></tr><tr><td>**35 to 100**</td><td>0.75</td><td>1.0</td><td>1.3</td><td>1.4</td></tr><tr><td>**160 to 250**</td><td>0.70</td><td>1.0</td><td>1.4</td><td>1.6</td></tr><tr><td>**350 to 400**</td><td>0.60</td><td>1.0</td><td>1.5</td><td>1.8</td></tr></table><br><table><tr><th>Ambient Temperature</th><th>Ripple Multiplier</th></tr><tr><td>+105 °C</td><td>1.00</td></tr><tr><td>+85 °C</td><td>1.50</td></tr><tr><td>+70 °C</td><td>1.80</td></tr></table> |
| **Load Life Test** | Apply WVDC for 2000 hours at +105 °C<br>Capacitance change within 20% of initial limit<br>DF not to exceed 200% of initial requirement<br>Leakage current not to exceed 200% of initial |
| **Shelf Life Test** | 1000 hrs @105 °C with no voltage applied<br>Cap change within ±20% of initial values<br>DF not to exceed 200% of initial requirement<br>DC leakage current meets initial requirement |
| Regulatory Information | |

# Type SEK 105 °C Radial Leaded Aluminum Electrolytic Capacitors

## Outline Drawing

**Outline Dimensions**
**(Millimeters)**

**Sleeving is PVC or PET (PET for all date codes after December 2019)**



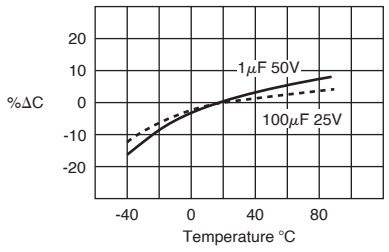

Case vented on diameters 6.3 and greater

sleeve adds .5 Max. to diameter and 2.0 Max. to length

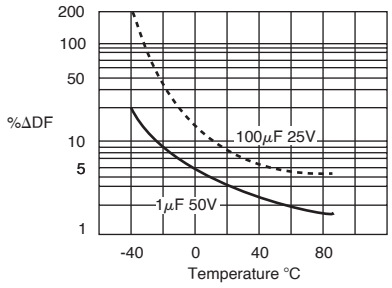
## Part Numbering System

| Type | Capacitance (µF) | Capacitance Tolerance (%) | Rated Voltage (Vdc) | Packaging | Lead Configuration |
|---|---|---|---|---|---|
| SEK | 100 | M | 100 | S | T |
| | 3R0 = 3 | K = ±10 | 6R3 = 6.3 | A = Tape & Ammo | 1 = Lead cut |
| | 100 = 10 | M = ±20 | 010 = 10 | E = Different Characteristic | 2 = Lead form |
| | 101 = 100 | | 100 = 100 | R = Tape & Reel | 4 = Lead crimp & cut (form) |
| | 102 = 1000 | | | S = Standard | T = Standard |

## Temperature Characteristics

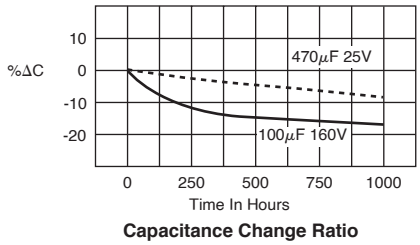



**Capacitance Change Ratio**

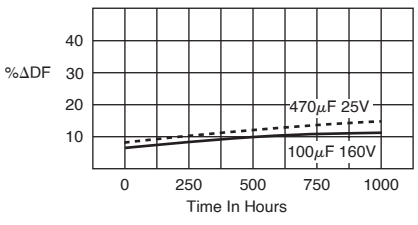



**Dissipation Factor Change**

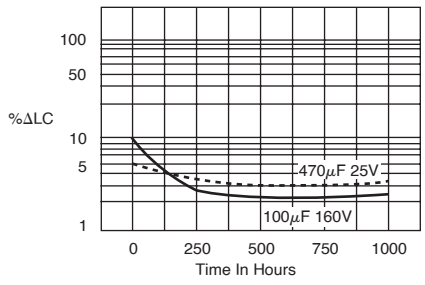
## Load Life Characteristics




**Capacitance Change Ratio**




**Dissipation Factor Change**




**Leakage Current Change**

## Ratings

| Cap (µF) | Catalog Part Number | Max ESR 120 Hz 25 °C (Ω) | Max Ripple 120 Hz 105 °C (mA) | Size in. (mm) Diameter (D) | Length (L) | Lead Space (S) | Lead Dia. (d) |
|---|---|---|---|---|---|---|---|
| **6.3 Vdc (8 Volts Surge)** | | | | | | | |
| 100 | SEK101M6R3ST | 3.45 | 100 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 220 | SEK221M6R3ST | 1.57 | 165 | .248 (6.3) | .433 (11.0) | .098 (2.5) | .0197 (0.5) |
| 330 | SEK331M6R3ST | 1.05 | 200 | .248 (6.3) | .453 (11.5) | .098 (2.5) | .0197 (0.5) |
| 470 | SEK471M6R3ST | 0.73 | 280 | .315 (8.0) | .453 (11.5) | .138 (3.5) | .0236 (0.6) |
| 1000 | SEK102M6R3ST | 0.35 | 470 | .394 (10.0) | .512 (13.0) | .197 (5.0) | .0236 (0.6) |
| 2200 | SEK222M6R3ST | 0.17 | 930 | .394 (10.0) | .827 (21.0) | .197 (5.0) | .0236 (0.6) |
| 3300 | SEK332M6R3ST | 0.12 | 1100 | .512 (13.0) | .827 (21.0) | .197 (5.0) | .0236 (0.6) |
| 4700 | SEK472M6R3ST | 0.10 | 1320 | .630 (16.0) | .984 (26.0) | .295 (7.5) | .0315 (0.8) |
| 6800 | SEK682M6R3ST | 0.07 | 1490 | .630 (16.0) | .984 (25.0) | .295 (7.5) | .0315 (0.8) |
| 10000 | SEK103M6R3ST | 0.06 | 1830 | .630 (16.0) | 1.26 (32.0) | .295 (7.5) | .0315 (0.8) |
| 15000 | SEK153M6R3ST | 0.05 | 2280 | .709 (18.0) | 1.40 (36.0) | .295 (7.5) | .0315 (0.8) |
| **10 Vdc (13 Volts Surge)** | | | | | | | |
| 47 | SEK470M010ST | 6.21 | 75 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 100 | SEK101M010ST | 2.92 | 110 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 220 | SEK221M010ST | 1.33 | 180 | .248 (6.3) | .433 (11.0) | .098 (2.5) | .0197 (0.5) |
| 330 | SEK331M010ST | 0.88 | 255 | .315 (8.0) | .453 (11.5) | .138 (3.5) | .0236 (0.6) |
| 470 | SEK471M010ST | 0.62 | 305 | .315 (8.0) | .453 (11.5) | .138 (3.5) | .0236 (0.6) |
| 1000 | SEK102M010ST | 0.29 | 570 | .394 (10.0) | .630 (16.0) | .197 (5.0) | .0236 (0.6) |
| 2200 | SEK222M010ST | 0.14 | 1010 | .512 (13.0) | .827 (21.0) | .197 (5.0) | .0236 (0.6) |
| 3300 | SEK332M010ST | 0.10 | 1220 | .512 (13.0) | .984 (25.0) | .197 (5.0) | .0236 (0.6) |
| 4700 | SEK472M010ST | 0.08 | 1410 | .630 (16.0) | .984 (25.0) | .295 (7.5) | .0315 (0.8) |
| 6800 | SEK682M010ST | 0.07 | 1610 | .630 (16.0) | 1.26 (32.0) | .295 (7.5) | .0315 (0.8) |
| 10000 | SEK103M010ST | 0.05 | 1980 | .709 (18.0) | 1.40 (36.0) | .295 (7.5) | .0315 (0.8) |
| 15000 | SEK153M010ST | 0.04 | 3330 | .709 (18.0) | 1.65 (42.0) | .295 (7.5) | .0315 (0.8) |
| **16 Vdc (20 Volts Surge)** | | | | | | | |
| 33 | SEK330M016ST | 7.24 | 70 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 47 | SEK470M016ST | 5.08 | 85 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 100 | SEK101M016ST | 2.39 | 135 | .248 (6.3) | .433 (11.0) | .098 (2.5) | .0197 (0.5) |
| 220 | SEK221M016ST | 1.09 | 235 | .315 (8.0) | .453 (11.5) | .138 (3.5) | .0236 (0.6) |
| 330 | SEK331M016ST | 0.72 | 285 | .315 (8.0) | .433 (11.0) | .138 (3.5) | .0236 (0.6) |
| 470 | SEK471M016ST | 0.51 | 395 | .394 (10.0) | .512 (13.0) | .197 (5.0) | .0236 (0.6) |
| 1000 | SEK102M016ST | 0.24 | 700 | .394 (10.0) | .827 (21.0) | .197 (5.0) | .0236 (0.6) |
| 2200 | SEK222M016ST | 0.12 | 1150 | .512 (13.0) | .827 (21.0) | .197 (5.0) | .0236 (0.6) |
| 3300 | SEK332M016ST | 0.09 | 1350 | .512 (13.0) | .984 (26.0) | .197 (5.0) | .0236 (0.6) |
| 4700 | SEK472M016ST | 0.07 | 1560 | .630 (16.0) | 1.26 (32.0) | .295 (7.5) | .0315 (0.8) |
| 6800 | SEK682M016ST | 0.06 | 1790 | .709 (18.0) | 1.40 (36.0) | .295 (7.5) | .0315 (0.8) |
| 10000 | SEK103M016ST | 0.05 | 2884 | .709 (18.0) | 1.65 (42.0) | .295 (7.5) | .0315 (0.8) |
| **25 Vdc (32 Volts Surge)** | | | | | | | |
| 10 | SEK100M025ST | 21.23 | 50 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 22 | SEK220M025ST | 9.65 | 60 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 33 | SEK330M025ST | 6.43 | 75 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 47 | SEK470M025ST | 4.52 | 90 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 100 | SEK101M025ST | 2.12 | 145 | .248 (6.3) | .433 (11.0) | .098 (2.5) | .0197 (0.5) |
| 220 | SEK221M025ST | 0.97 | 250 | .315 (8.0) | .433 (11.0) | .138 (3.5) | .0236 (0.6) |
| 330 | SEK331M025ST | 0.64 | 355 | .394 (10.0) | .512 (13.0) | .197 (5.0) | .0236 (0.6) |

# Type SEK 105 °C Radial Leaded Aluminum Electrolytic Capacitors

| Cap (µF) | Catalog Part Number | Max ESR 120 Hz 25 °C (Ω) | Max Ripple 120 Hz 105 °C (mA) | Size in. (mm) | | | |
|---|---|---|---|---|---|---|---|
| | | | | Diameter (D) | Length (L) | Lead Space (S) | Lead Dia. (d) |
| **25 Vdc (32 Volts Surge)** | | | | | | | |
| 470 | SEK471M025ST | 0.45 | 470 | .394 (10.0) | .630 (16.0) | .197 (5.0) | .0236 (0.6) |
| 1000 | SEK102M025ST | 0.21 | 855 | .512 (13.0) | .827 (21.0) | .197 (5.0) | .0236 (0.6) |
| 2200 | SEK222M025ST | 0.11 | 1230 | .512 (13.0) | .984 (26.0) | .197 (5.0) | .0236 (0.6) |
| 3300 | SEK332M025ST | 0.08 | 1450 | .630 (16.0) | 1.26 (32.0) | .295 (7.5) | .0315 (0.8) |
| 4700 | SEK472M025ST | 0.07 | 1690 | .709 (18.0) | 1.40 (36.0) | .295 (7.5) | .0315 (0.8) |
| 6800 | SEK682M025ST | 0.05 | 2856 | .709 (18.0) | 1.65 (42.0) | .295 (7.5) | .0315 (0.8) |
| **35 Vdc (44 Volts Surge)** | | | | | | | |
| 22 | SEK220M035ST | 8.44 | 65 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 33 | SEK330M035ST | 5.63 | 85 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 47 | SEK470M035ST | 3.95 | 115 | .248 (6.3) | .433 (11.0) | .098 (2.5) | .0197 (0.5) |
| 100 | SEK101M035ST | 1.86 | 190 | .315 (8.0) | .453 (11.5) | .138 (3.5) | .0236 (0.6) |
| 220 | SEK221M035ST | 0.84 | 315 | .394 (10.0) | .512 (13.0) | .197 (5.0) | .0236 (0.6) |
| 330 | SEK331M035ST | 0.56 | 440 | .394 (10.0) | .630 (16.0) | .197 (5.0) | .0236 (0.6) |
| 470 | SEK471M035ST | 0.40 | 580 | .512 (13.0) | .787 (20.0) | .197 (5.0) | .0236 (0.6) |
| 1000 | SEK102M035ST | 0.19 | 995 | .512 (13.0) | .827 (21.0) | .197 (5.0) | .0236 (0.6) |
| 2200 | SEK222M035ST | 0.10 | 1450 | .630 (16.0) | 1.26 (32.0) | .295 (7.5) | .0315 (0.8) |
| 3300 | SEK332M035ST | 0.07 | 1660 | .709 (18.0) | 1.40 (36.0) | .295 (7.5) | .0315 (0.8) |
| 4700 | SEK472M035ST | 0.06 | 2674 | .709 (18.0) | 1.65 (42.0) | .295 (7.5) | .0315 (0.8) |
| **50 Vdc (63 Volts Surge)** | | | | | | | |
| 0.47 | SEKR47M050ST | 338.80 | 7.0 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 1.0 | SEK010M050ST | 159.24 | 12.0 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 2.2 | SEK2R2M050ST | 72.38 | 18.0 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 3.3 | SEK3R3M050ST | 48.25 | 25.0 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 4.7 | SEK4R7M050ST | 33.88 | 30.0 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 10 | SEK100M050ST | 15.92 | 50.0 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 22 | SEK220M050ST | 7.24 | 75.0 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 33 | SEK330M050ST | 4.83 | 105.0 | .248 (6.3) | .433 (11.0) | .098 (2.5) | .0197 (0.5) |
| 47 | SEK470M050ST | 3.39 | 125.0 | .248 (6.3) | .453 (11.5) | .098 (2.5) | .0197 (0.5) |
| 100 | SEK101M050ST | 1.59 | 210.0 | .315 (8.0) | .433 (11.0) | .138 (3.5) | .0236 (0.6) |
| 220 | SEK221M050ST | 0.72 | 400.0 | .394 (10.0) | .630 (16.0) | .197 (5.0) | .0236 (0.6) |
| 330 | SEK331M050ST | 0.48 | 535.0 | .394 (10.0) | .827 (21.0) | .197 (5.0) | .0236 (0.6) |
| 470 | SEK471M050ST | 0.34 | 730.0 | .512 (13.0) | .827 (21.0) | .197 (5.0) | .0236 (0.6) |
| 1000 | SEK102M050ST | 0.16 | 1110.0 | .630 (16.0) | .984 (25.0) | .295 (7.5) | .0315 (0.8) |
| 2200 | SEK222M050ST | 0.08 | 1530.0 | .709 (18.0) | 1.40 (36.0) | .295 (7.5) | .0315 (0.8) |
| 3300 | SEK332M050ST | 0.47 | 2478.0 | .709 (18.0) | 1.65 (42.0) | .295 (7.5) | .0315 (0.8) |
| **63 Vdc (79 Volts Surge)** | | | | | | | |
| 4.7 | SEK4R7M063ST | 28.23 | 34 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 10 | SEK100M063ST | 13.27 | 55 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 22 | SEK220M063ST | 6.03 | 90 | .248 (6.3) | .433 (11.0) | .098 (2.5) | .0197 (0.5) |
| 33 | SEK330M063ST | 4.02 | 110 | .248 (6.3) | .433 (11.0) | .098 (2.5) | .0197 (0.5) |
| 47 | SEK470M063ST | 2.82 | 155 | .315 (8.0) | .433 (11.0) | .138 (3.5) | .0236 (0.6) |
| 100 | SEK101M063ST | 1.33 | 260 | .394 (10.0) | .512 (13.0) | .197 (5.0) | .0236 (0.6) |
| 220 | SEK221M063ST | 0.60 | 460 | .394 (10.0) | .827 (21.0) | .197 (5.0) | .0236 (0.6) |
| 330 | SEK331M063ST | 0.40 | 650 | .512 (13.0) | .827 (21.0) | .197 (5.0) | .0236 (0.6) |
| 470 | SEK471M063ST | 0.28 | 800 | .512 (13.0) | .984 (26.0) | .197 (5.0) | .0236 (0.6) |
| 1000 | SEK102M063ST | 0.13 | 1200 | .630 (16.0) | 1.26 (32.0) | .295 (7.5) | .0315 (0.8) |

Parts highlighted in yellow are obsolete.

# Type SEK 105 °C Radial Leaded Aluminum Electrolytic Capacitors

| Cap (µF) | Catalog Part Number | Max ESR 120 Hz 25 °C (Ω) | Max Ripple 120 Hz 105 °C (mA) | Size in. (mm) Diameter (D) | Length (L) | Lead Space (S) | Lead Dia. (d) |
|---|---|---|---|---|---|---|---|
| **100 Vdc (125 Volts Surge)** | | | | | | | |
| 0.47 | SEKR47M100ST | 282.33 | 10 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 1.0 | SEK010M100ST | 132.70 | 15 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 2.2 | SEK2R2M100ST | 60.32 | 22 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 3.3 | SEK3R3M100ST | 40.21 | 29 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 4.7 | SEK4R7M100ST | 28.23 | 37 | .197 (5.0) | .433 (11.0) | .079 (2.0) | .0197 (0.5) |
| 10.0 | SEK100M100ST | 13.27 | 65 | .248 (6.3) | .433 (11.0) | .098 (2.5) | .0197 (0.5) |
| 22.0 | SEK220M100ST | 6.03 | 115 | .315 (8.0) | .433 (11.0) | .138 (3.5) | .0236 (0.6) |
| 33.0 | SEK330M100ST | 4.02 | 160 | .394 (10.0) | .512 (13.0) | .197 (5.0) | .0236 (0.6) |
| 47.0 | SEK470M100ST | 2.82 | 210 | .394 (10.0) | .630 (16.0) | .197 (5.0) | .0236 (0.6) |
| 100.0 | SEK101M100ST | 1.33 | 385 | .512 (13.0) | .787 (20.0) | .197 (5.0) | .0236 (0.6) |
| 220.0 | SEK221M100ST | 0.60 | 590 | .630 (16.0) | .984 (25.0) | .295 (7.5) | .0315 (0.8) |
| 330.0 | SEK331M100ST | 0.40 | 720 | .630 (16.0) | .984 (25.0) | .295 (7.5) | .0315 (0.8) |
| 470.0 | SEK471M100ST | 0.28 | 875 | .630 (16.0) | 1.26 (32.0) | .295 (7.5) | .0315 (0.8) |
| **160 Vdc (200 Volts Surge)** | | | | | | | |
| 0.47 | SEKR47M160ST | 423.50 | 12 | .248 (6.3) | .433 (11.0) | .098 (2.5) | .0197 (0.5) |
| 1.0 | SEK010M160ST | 199.04 | 17 | .248 (6.3) | .433 (11.0) | .098 (2.5) | .0197 (0.5) |
| 2.2 | SEK2R2M160ST | 90.47 | 25 | .248 (6.3) | .433 (11.0) | .098 (2.5) | .0197 (0.5) |
| 3.3 | SEK3R3M160ST | 60.32 | 36 | .248 (6.3) | .433 (11.0) | .098 (2.5) | .0197 (0.5) |
| 4.7 | SEK4R7M160ST | 42.35 | 43 | .248 (6.3) | .433 (11.0) | .098 (2.5) | .0197 (0.5) |
| 10 | SEK100M160ST | 19.90 | 70 | .315 (8.0) | .433 (11.0) | .138 (3.5) | .0236 (0.6) |
| 22 | SEK220M160ST | 9.05 | 130 | .394 (10.0) | .630 (16.0) | .197 (5.0) | .0236 (0.6) |
| 33 | SEK330M160ST | 6.03 | 180 | .394 (10.0) | .827 (21.0) | .197 (5.0) | .0236 (0.6) |
| 47 | SEK470M160ST | 4.23 | 270 | .512 (13.0) | .827 (21.0) | .197 (5.0) | .0236 (0.6) |
| 100 | SEK101M160ST | 1.99 | 330 | .512 (13.0) | .984 (26.0) | .197 (5.0) | .0236 (0.6) |
| 220 | SEK221M160ST | 0.90 | 500 | .630 (16.0) | 1.42 (36.0) | .295 (7.5) | .0315 (0.8) |
| 330 | SEK331M160ST | 0.60 | 850 | .709 (18.0) | 1.65 (42.0) | .295 (7.5) | .0315 (0.8) |
| **200 Vdc (250 Volts Surge)** | | | | | | | |
| 0.47 | SEKR47M200ST | 423.50 | 12 | .248 (6.3) | .433 (11.0) | .098 (2.5) | .0197 (0.5) |
| 1.0 | SEK010M200ST | 199.04 | 17 | .248 (6.3) | .433 (11.0) | .098 (2.5) | .0197 (0.5) |
| 2.2 | SEK2R2M200ST | 90.47 | 25 | .248 (6.3) | .453 (11.5) | .098 (2.5) | .0197 (0.5) |
| 3.3 | SEK3R3M200ST | 60.32 | 36 | .248 (6.3) | .453 (11.5) | .098 (2.5) | .0197 (0.5) |
| 4.7 | SEK4R7M200ST | 42.35 | 50 | .315 (8.0) | .433 (11.0) | .138 (3.5) | .0236 (0.6) |
| 10 | SEK100M200ST | 19.90 | 80 | .394 (10.0) | .512 (13.0) | .197 (5.0) | .0236 (0.6) |
| 22 | SEK220M200ST | 9.05 | 140 | .394 (10.0) | .827 (21.0) | .197 (5.0) | .0236 (0.6) |
| 33 | SEK330M200ST | 6.03 | 190 | .512 (13.0) | .827 (21.0) | .197 (5.0) | .0236 (0.6) |
| 47 | SEK470M200ST | 4.23 | 220 | .512 (13.0) | .827 (21.0) | .197 (5.0) | .0236 (0.6) |
| 100 | SEK101M200ST | 1.99 | 335 | .630 (16.0) | .984 (25.0) | .295 (7.5) | .0315 (0.8) |
| 220 | SEK221M200ST | 0.90 | 515 | .709 (18.0) | 1.65 (42.0) | .295 (7.5) | .0315 (0.8) |
| **250 Vdc (300 Volts Surge)** | | | | | | | |
| 0.47 | SEKR47M250ST | 423.50 | 12 | .248 (6.3) | .433 (11.0) | .098 (2.5) | .0197 (0.5) |
| 1.0 | SEK010M250ST | 199.04 | 17 | .248 (6.3) | .433 (11.0) | .098 (2.5) | .0197 (0.5) |
| 2.2 | SEK2R2M250ST | 90.47 | 29 | .248 (6.3) | .453 (11.5) | .098 (2.5) | .0197 (0.5) |
| 3.3 | SEK3R3M250ST | 60.32 | 42 | .315 (8.0) | .433 (11.0) | .138 (3.5) | .0236 (0.6) |
| 4.7 | SEK4R7M250ST | 42.35 | 50 | .315 (8.0) | .433 (11.0) | .138 (3.5) | .0236 (0.6) |
| 10.0 | SEK100M250ST | 19.90 | 88 | .394 (10.0) | .630 (16.0) | .197 (5.0) | .0236 (0.6) |

Parts highlighted in yellow are obsolete.

# Type SEK 105 °C Radial Leaded Aluminum Electrolytic Capacitors

| Cap (µF) | Catalog Part Number | Max ESR 120 Hz 25 °C (Ω) | Max Ripple 120 Hz 105 °C (mA) | Size in. (mm) | | | |
|---|---|---|---|---|---|---|---|
| | | | | Diameter (D) | Length (L) | Lead Space (S) | Lead Dia. (d) |
| **250 Vdc (300 Volts Surge)** | | | | | | | |
| 22 | SEK220M250ST | 9.05 | 155 | .512 (13.0) | .827 (21.0) | .197 (5.0) | .0236 (0.6) |
| 33 | SEK330M250ST | 6.03 | 190 | .512 (13.0) | .827 (21.0) | .197 (5.0) | .0236 (0.6) |
| 47 | SEK470M250ST | 4.23 | 230 | .512 (13.0) | .984 (26.0) | .197 (5.0) | .0236 (0.6) |
| 100 | SEK101M250ST | 1.99 | 340 | .630 (16.0) | 1.26 (32.0) | .295 (7.5) | .0315 (0.8) |
| **350 Vdc (400 Volts Surge)** | | | | | | | |
| 0.47 | SEKR47M350ST | 564.67 | 14 | .315 (8.0) | .433 (11.0) | .138 (3.5) | .0236 (0.6) |
| 1.0 | SEK010M350ST | 265.39 | 20 | .315 (8.0) | .433 (11.0) | .138 (3.5) | .0236 (0.6) |
| 2.2 | SEK2R2M350ST | 120.63 | 35 | .315 (8.0) | .453 (11.5) | .138 (3.5) | .0236 (0.6) |
| 3.3 | SEK3R3M350ST | 80.42 | 47 | .394 (10.0) | .512 (13.0) | .197 (5.0) | .0236 (0.6) |
| 4.7 | SEK4R7M350ST | 56.47 | 55 | .394 (10.0) | .512 (13.0) | .197 (5.0) | .0236 (0.6) |
| 10 | SEK100M350ST | 26.54 | 95 | .394 (10.0) | .827 (21.0) | .197 (5.0) | .0236 (0.6) |
| 22 | SEK220M350ST | 12.06 | 165 | .512 (13.0) | .984 (26.0) | .197 (5.0) | .0236 (0.6) |
| 33 | SEK330M350ST | 8.04 | 195 | .512 (13.0) | .984 (25.0) | .197 (5.0) | .0236 (0.6) |
| 47 | SEK470M350ST | 5.65 | 240 | .630 (16.0) | 1.42 (36.0) | .295 (7.5) | .0315 (0.8) |
| 100 | SEK101M350ST | 2.65 | 360 | .709 (18.0) | 1.65 (42.0) | .295 (7.5) | .0315 (0.8) |
| **400 Vdc (450 Volts Surge)** | | | | | | | |
| 0.47 | SEKR47M400ST | 564.67 | 14 | .315 (8.0) | .433 (11.0) | .138 (3.5) | .0236 (0.6) |
| 1.0 | SEK010M400ST | 265.39 | 20 | .315 (8.0) | .433 (11.0) | .138 (3.5) | .0236 (0.6) |
| 2.2 | SEK2R2M400ST | 120.63 | 35 | .394 (10.0) | .512 (13.0) | .197 (5.0) | .0236 (0.6) |
| 3.3 | SEK3R3M400ST | 80.42 | 50 | .394 (10.0) | .512 (13.0) | .197 (5.0) | .0236 (0.6) |
| 4.7 | SEK4R7M400ST | 56.47 | 58 | .394 (10.0) | .630 (16.0) | .197 (5.0) | .0236 (0.6) |
| 10 | SEK100M400ST | 26.54 | 100 | .512 (13.0) | .787 (20.0) | .197 (5.0) | .0236 (0.6) |
| 22 | SEK220M400ST | 12.06 | 170 | .512 (13.0) | .984 (26.0) | .197 (5.0) | .0236 (0.6) |
| 33 | SEK330M400ST | 8.04 | 205 | .630 (16.0) | 1.26 (32.0) | .295 (7.5) | .0315 (0.8) |
| 47 | SEK470M400ST | 5.65 | 255 | .709 (18.0) | 1.40 (36.0) | .295 (7.5) | .0315 (0.8) |
| **450 Vdc (500 Volts Surge)** | | | | | | | |
| 0.47 | SEKR47M450ST | 564.67 | 14 | .315 (8.0) | .433 (11.0) | .138 (3.5) | .0236 (0.6) |
| 1.0 | SEK010M450ST | 265.39 | 20 | .315 (8.0) | .433 (11.0) | .138 (3.5) | .0236 (0.6) |
| 2.2 | SEK2R2M450ST | 120.63 | 35 | .394 (10.0) | .512 (13.0) | .197 (5.0) | .0236 (0.6) |
| 3.3 | SEK3R3M450ST | 80.42 | 50 | .394 (10.0) | .512 (13.0) | .197 (5.0) | .0236 (0.6) |
| 4.7 | SEK4R7M450ST | 56.47 | 58 | .394 (10.0) | .630 (16.0) | .197 (5.0) | .0236 (0.6) |
| 10 | SEK100M450ST | 26.54 | 100 | .512 (13.0) | .827 (21.0) | .197 (5.0) | .0236 (0.6) |
| 22 | SEK220M450ST | 12.06 | 170 | .512 (13.0) | .984 (26.0) | .197 (5.0) | .0236 (0.6) |
| 33 | SEK330M450ST | 8.04 | 205 | .630 (16.0) | 1.26 (32.0) | .295 (7.5) | .0315 (0.8) |
| 47 | SEK470M450ST | 5.65 | 255 | .709 (18.0) | 1.40 (36.0) | .295 (7.5) | .0315 (0.8) |

Parts highlighted in yellow are obsolete.

## Taping & Packaging

**Fig. 1 - Formed Taping**

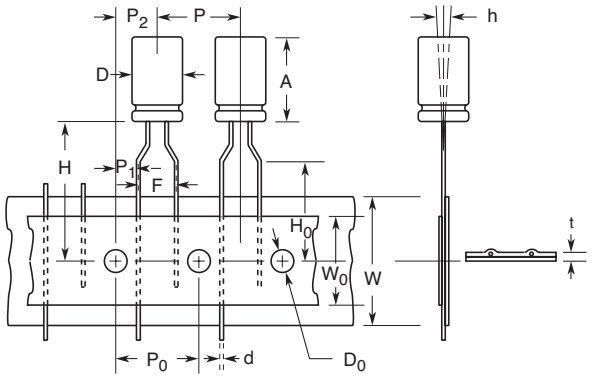



**Fig. 2 - Straight Taping (5φ, 6.3φ, 8φ)**

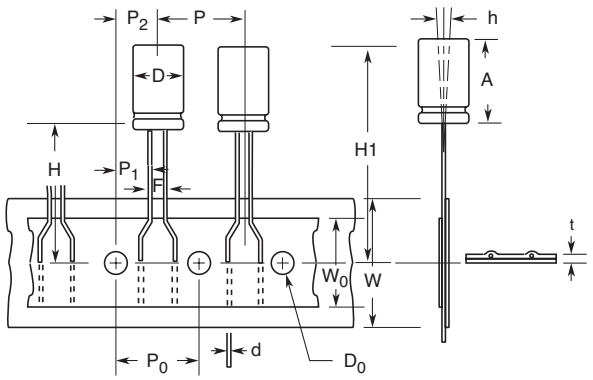



**Fig. 3- Straight Taping (Under 10φ, 12φ, 13φ)**

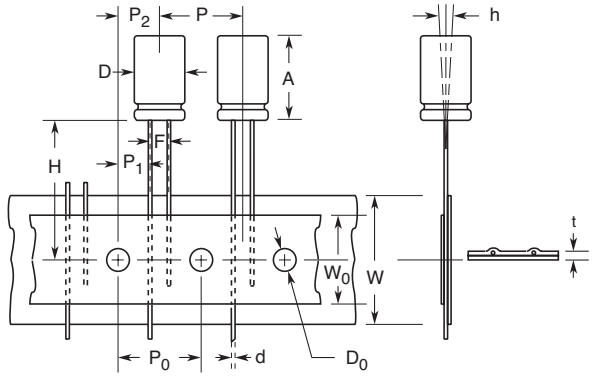
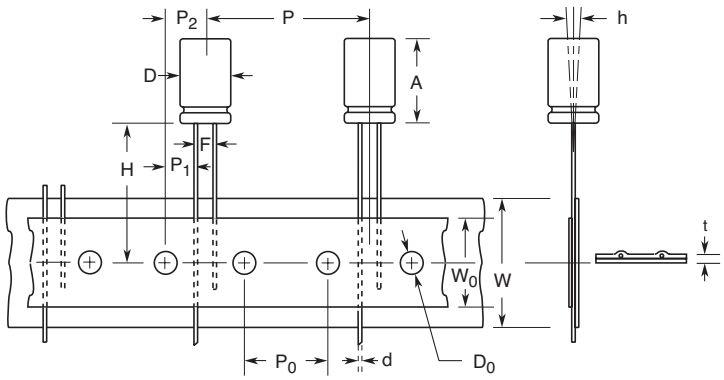



**Fig. 4- Straight Taping (16φ, 18φ)**

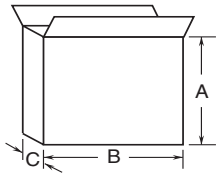



**Standard Lead Spacing of Taped Components is 5mm**
**Other Lead Spacing is Available by Special Order**

| Code | D | A | d | P | $P_0$ | $P_1$ | $P_2$ | F | W | $W_0$ | H | $H_0$ | $D_0$ | t | ih | Fig. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tolerance | 0.5 | 1.0 | ±0.05 | ±1.0 | ±0.2 | ±0.7 | ±1.3 | +0.8 -0.2 | ±0.5 | Min. | ±0.75 | ±0.5 | ±0.2 | ±0.2 | Max. | |
| Item | 4 ~ 6.3 | 7.0 | 0.45 | 12.7 | 12.7 | 3.85 | 6.35 | 5.0 | 18.0 | 12.5 | 18.5 | 16.0 | 4.0 | 0.7 | 2.0 | 1 |
| | 5 ~ 8 | 12.5 | 0.5 | 12.7 | 12.7 | 3.85 | 6.35 | 5.0 | 18.0 | 12.5 | 18.5 | 16.0 | 4.0 | 0.7 | 2.0 | |
| | 5, 6.3 | 12.5 | 0.5 | 12.7 | 12.7 | 5.1 | 6.35 | 2.5 | 18.0 | 12.5 | 18.5 | —— | 4.0 | 0.7 | 2.0 | 2 |
| | 8 | 12.5 | 0.5 | 12.7 | 12.7 | 4.6 | 6.35 | 3.5 | 18.0 | 12.5 | 18.5 | —— | 4.0 | 0.7 | 2.0 | |
| | 10 | 21.0 | 0.6 | 12.7 | 12.7 | 3.85 | 6.35 | 5.0 | 18.0 | 12.5 | 18.5 | —— | 4.0 | 0.7 | 2.0 | 3 |
| | 12, 13 | 26.0 | 0.6 | 15.0 | 15.0 | 5.0 | 7.5 | 5.0 | 18.0 | 12.5 | 18.5 | —— | 4.0 | 0.7 | 2.0 | |
| | 16, 18 | 26.0 | 0.8 | 30.0 | 15.0 | 3.75 | 7.5 | 7.5 | 18.0 | 12.5 | 18.0 | —— | 4.0 | 0.7 | 2.0 | 4 |

| Capacitor Diameter D (mm) | Ammo Pack Box Dimensions (mm) | | | Quantity Per Ammo Pack Box |
|---|---|---|---|---|
| | A±5 | B Max | C±3 | |
| 4 | 250 | 340 | 54 | 3000 |
| 5 | 250 | 340 | 54 | 2,000 |
| 6.3 | 290 | 340 | 54 | 2,000 |
| 8 | 250 | 340 | 54 | 1,000 |
| 10 (12 L) | 290 | 340 | 54 | 600 |
| 10 (16 L) | 350 | 340 | 59 | 600 |
| 10 (20 L) | 340 | 340 | 71 | 600 |
| 12, 13 | 340 | 340 | 71 | 400 |
| 16 | 340 | 340 | 71 | 300 |

**Ammo Pack**




Ammo Pack boxes are shipped 5 to the outer packing carton

Tape And Reel Quantities

| Case Diameter D (mm) | Reel Width | Reel Qty. (Pcs.) |
|---|---|---|
| 4 | 44 | 1500 |
| 5 | 44 | 1200 |
| 6 | 44 | 1000 |
| 8 | 44 | 800 |
| 10 (12L) | 44 | 600 |
| 10 (16L) | 50 | 600 |
| 12, 13 | - | - |
| 16 | - | - |

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