



**THE DATASHEET OF  
VPCT501W102K1GV001T**



# HIGH VOLTAGE SURFACE MOUNT MLCCs 250 - 6,000 VDC



These high voltage capacitors feature a special internal electrode design which reduces voltage concentrations by distributing voltage gradients throughout the entire capacitor.

This unique design also affords increased capacitance values in a given case size and voltage rating. The capacitors are designed and manufactured to the general requirement of EIA198 and are subjected to a 100% electrical testing making them well suited for a wide variety of telecommunication, commercial, and industrial applications.





## APPLICATIONS

- Analog & Digital Modems
- LAN/WAN Interface
- Lighting Ballast Circuits
- Voltage Multipliers
- DC-DC Converters
- Back-lighting Inverters

Polyterm® soft termination option for demanding environments & processes available on select parts, please contact the factory.

## CASE SIZE

## CAPACITANCE SELECTION





JDI / EIA	INCHES	(MM)	RATED VOLTAGE	NP0 DIELECTRIC		X7R DIELECTRIC		
				MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	
<b>R15/0805</b> 	L	.080 ±.010	(2.03 ±.25)	250 VDC	-	-	1000 pF	0.022 µF
	W	.050 ±.010	(1.27 ±.25)	500 VDC	10 pF	680 pF	1000 pF	0.010 µF
	T	.055 Max.	(1.40)	630 VDC	10 pF	560 pF	1000 pF	6800 pF
	E/B	.020 ±.010	(0.51±.25)	1000 VDC	10 pF	390 pF	100 pF	2700 pF
				250 VDC	-	-	1000 pF	0.068 µF
<b>R18/1206</b> 	L	.125 ±.010	(3.18 ±.25)	500 VDC	10 pF	1500 pF	1000 pF	0.033 µF
	W	.062 ±.010	(1.57 ±.25)	630 VDC	10 pF	1200 pF	1000 pF	0.027 µF
	T	.067 Max.	(1.70)	1000 VDC	10 pF	1000 pF	100 pF	0.010 µF
	E/B	.020 ±.010	(0.51±.25)	2000 VDC	10 pF	220 pF	100 pF	4700 pF
				3000 VDC	10 pF	82 pF	100 pF	1000 pF
				250 VDC	-	-	1000 pF	0.150 µF
<b>S41/1210</b> 	L	.125 ±.010	(3.18 ±.25)	500 VDC	10 pF	3900 pF	1000 pF	0.068 µF
	W	.095 ±.010	(2.41 ±.25)	630 VDC	10 pF	2700 pF	1000 pF	0.047 µF
	T	.080 Max.	(2.03)	1000 VDC	10 pF	1800 pF	100 pF	0.015 µF
	E/B	.020 ±.010	(0.51±.25)	2000 VDC	10 pF	560 pF	100 pF	4700 pF
				3000 VDC	10 pF	220 pF	100 pF	1000 pF
				500 VDC	10 pF	4700 pF	1000 pF	0.100 µF
<b>R29/1808</b> 	L	.185 ±.020	(4.70 ±.51)	630 VDC	10 pF	3300 pF	1000 pF	0.047 µF
	W	.080 ±.010	(2.03 ±.25)	1000 VDC	1.0 pF	2200 pF	100 pF	0.022 µF
	T	.085 Max.	(2.16)	2000 VDC	1.0 pF	820 pF	100 pF	0.010 µF
	E/B	.020 ±.010	(0.51±.25)	3000 VDC	1.0 pF	470 pF	100 pF	3300 pF
				4000 VDC	1.0 pF	180 pF	100 pF	1800 pF
				5000 VDC	1.0 pF	75 pF	47 pF	390 pF
				6000 VDC	1.0 pF	75 pF	47 pF	150 pF

Available cap. values include these significant retma values and their multiples: 1.0 1.2 1.5 1.8 2.2 2.7 3.3 3.9 4.7 5.6 6.8 8.2 (1.0 = 1.0, 10, 100, 1000, etc.) Consult factory for non-retma values and sizes or voltages not shown.

# HIGH VOLTAGE SURFACE MOUNT MLCCs 250 - 6,000 VDC

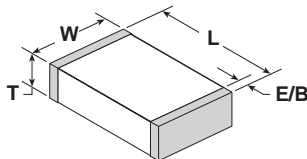
## CASE SIZE

## CAPACITANCE SELECTION

JDI / EIA	INCHES	(MM)	RATED VOLTAGE	NP0 DIELECTRIC		X7R DIELECTRIC						
				MINIMUM	MAXIMUM	MINIMUM	MAXIMUM					
<b>S43 / 1812</b> 	L W T E/B	.177 ±.012 .125 ±.010 .110 Max. .025 ±.015	(4.50 ±.30) (3.18 ±.25) (2.80) (0.64±.38)	250 VDC	-	-	0.010 µF	0.470 µF				
				500 VDC	100 pF	8200 pF	1000 pF	0.330 µF				
				630 VDC	100 pF	6800 pF	1000 pF	0.120 µF				
				1000 VDC	10 pF	5600 pF	1000 pF	0.100 µF				
				2000 VDC	10 pF	1800 pF	100 pF	0.010 µF				
				3000 VDC	10 pF	1000 pF	100 pF	4700 pF				
				4000 VDC	10 pF	390 pF	100 pF	1200 pF				
				5000 VDC	10 pF	150 pF	100 pF	820 pF				
				6000 VDC	10 pF	150 pF	10 pF	330 pF				
				<b>S49 / 1825</b> 	L W T E/B	.180 ±.010 .250 ±.010 .140 Max. .025 ±.015	(4.57 ±.25) (6.35 ±.25) (3.56) (0.64±.38)	500 VDC	100 pF	0.018 µF	0.01 µF	0.390 µF
630 VDC	100 pF	0.015 µF	0.01 µF					0.270 µF				
1000 VDC	10 pF	0.012 µF	1000 pF					0.180 µF				
2000 VDC	10 pF	5600 pF	100 pF					0.039 µF				
3000 VDC	10 pF	2200 pF	100 pF					8200 pF				
4000 VDC	10 pF	1200 pF	100 pF					2200 pF				
5000 VDC	10 pF	390 pF	100 pF					1500 pF				
6000 VDC	10 pF	390 pF	100 pF					820 pF				
<b>S47 / 2220</b> 	L W T E/B	.225 ±.015 .200 ±.015 .150 Max. .025 ±.015	(5.72 ±.38) (5.08 ±.38) (3.81) (0.64±.38)					500 VDC	1000 pF	0.018 µF	0.01 µF	0.470 µF
								630 VDC	1000 pF	0.018 µF	0.01 µF	0.270 µF
				1000 VDC	100 pF	0.015 µF	1000 pF	0.120 µF				
				2000 VDC	100 pF	5600 pF	1000 pF	0.039 µF				
				3000 VDC	10 pF	2700 pF	100 pF	0.010 µF				
				4000 VDC	10 pF	1500 pF	100 pF	2700 pF				
				5000 VDC	10 pF	470 pF	100 pF	1500 pF				
				6000 VDC	10 pF	470 pF	100 pF	820 pF				
				<b>S48 / 2225</b> 	L W T E/B	.225 ±.010 .255 ±.015 .160 Max. .025 ±.015	(5.72 ±.25) (6.48 ±.38) (4.06) (0.64±.38)	500 VDC	1000 pF	0.027 µF	0.01 µF	0.560 µF
								630 VDC	1000 pF	0.022 µF	0.01 µF	0.390 µF
1000 VDC	100 pF	0.018 µF	1000 pF					0.180 µF				
2000 VDC	100 pF	8200 pF	1000 pF					0.056 µF				
3000 VDC	10 pF	3300 pF	100 pF					0.012 µF				
4000 VDC	10 pF	1800 pF	100 pF					3300 pF				
5000 VDC	10 pF	470 pF	100 pF					2700 pF				
6000 VDC	10 pF	470 pF	100 pF					1200 pF				

Available cap. values include these significant retma values and their multiples: 1.0 1.2 1.5 1.8 2.2 2.7 3.3 3.9 4.7 5.6 6.8 8.2 (1.0 = 1.0, 10, 100, 1000, etc.) Consult factory for non-retma values and sizes or voltages not shown.

## ELECTRICAL CHARACTERISTICS



Meets the standard NP0 & X7R dielectric specifications listed on page 78

**DIELECTRIC WITHSTANDING VOLTAGE** DWV = 1.5 X rated WVDC for ratings 500-999 WVDC,  
DWV = 1.2 X rated WVDC for ratings ≥ 1,000 WVDC

NOTE: Capacitors may require a surface coating to prevent external arcing. Solder mask should not be used beneath capacitors. For more information see JDI Tech Note "Surface Arc Season"

## HOW TO ORDER HIGH VOLTAGE SURFACE MOUNT

P/N written: 202R18W102KV4E

202	R18	W	102	K	V	4	E
VOLTAGE	SIZE	DIELECTRIC	CAPACITANCE	TOLERANCE	TERMINATION	MARKING	PACKING
501 = 500 V 631 = 630 V 102 = 1000 V 202 = 2000 V 302 = 3000 V 402 = 4000 V 502 = 5000 V 602 = 6000 V	R15 = 0805 R18 = 1206 R29 = 1808 S41 = 1210 S43 = 1812 S47 = 2220 S48 = 2225 S49 = 1825	N = NP0 W = X7R	1st two digits are significant; third digit denotes number of zeros. 102 = 1000 pF 104 = 0.10 µF	J = ± 5% K = ± 10% M = ± 20%	V = Ni Barrier with 100% Sn Plating (Matte)  F = Polyterm flexible termination T = SnPb	4 = Unmarked 6 = EIA Code	E = Embossed 7" T = Punched 7"  No code = bulk Tape specs. per EIA RS481



## Looking for pricing, stock, or lifecycle information?

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- ⊖ [Johanson Dielectrics Inc. Information](#)

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