

# 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><br> | 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><br> | 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><br> | 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><br> | 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

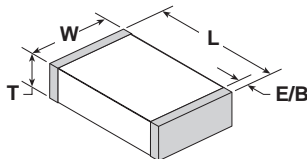
## CASE SIZE

## CAPACITANCE SELECTION

| JDI /EIA   | INCHES             | (MM)  | RATED VOLTAGE                                      | NP0 DIELECTRIC   |                    | X7R DIELECTRIC                                      |  |          |         |          |         |          |
|--|--------------------|---|--|--|--------------------|---|--|----------|---------|----------|---------|----------|
|  |                    |   |  | MINIMUM  | MAXIMUM            | MINIMUM   | MAXIMUM  |          |         |          |         |          |
| <b>S43 / 1812</b><br> | L<br>W<br>T<br>E/B | .177 ±.012<br>.125 ±.010<br>.110 Max.<br>.025 ±.015 | (4.50 ±.30)<br>(3.18 ±.25)<br>(2.80)<br>(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><br>   | L<br>W<br>T<br>E/B | .180 ±.010<br>.250 ±.010<br>.140 Max.<br>.025 ±.015 | (4.57 ±.25)<br>(6.35 ±.25)<br>(3.56)<br>(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><br> | L<br>W<br>T<br>E/B | .225 ±.015<br>.200 ±.015<br>.150 Max.<br>.025 ±.015 | (5.72 ±.38)<br>(5.08 ±.38)<br>(3.81)<br>(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><br> | L<br>W<br>T<br>E/B | .225 ±.010<br>.255 ±.015<br>.160 Max.<br>.025 ±.015 | (5.72 ±.25)<br>(6.48 ±.38)<br>(4.06)<br>(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<br>631 = 630 V<br>102 = 1000 V<br>202 = 2000 V<br>302 = 3000 V<br>402 = 4000 V<br>502 = 5000 V<br>602 = 6000 V | R15 = 0805<br>R18 = 1206<br>R29 = 1808<br>S41 = 1210<br>S43 = 1812<br>S47 = 2220<br>S48 = 2225<br>S49 = 1825 | N = NP0<br>W = X7R | 1st two digits are significant; third digit denotes number of zeros.<br>102 = 1000 pF<br>104 = 0.10 µF | J = ± 5%<br>K = ± 10%<br>M = ± 20% | V = Ni Barrier with 100% Sn Plating (Matte)<br><br>F = Polyterm flexible termination<br>T = SnPb | 4 = Unmarked<br>6 = EIA Code | E = Embossed 7"<br>T = Punched 7"<br><br>No code = bulk<br>Tape specs. per EIA RS481 |



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[NMC0402X7R392K50TRPF](#) [NMC0603NPO201J50TRPF](#) [NMC0603X7R333K16TRPF](#) [NMC0805NPO820J50TRPF](#)  
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[Q0402NPO8R2D200TRPF](#) [C1608C0G2A221J](#) [C1608X7R1E334K](#) [C2012C0G2A472J](#) [2220J2K00562KXT](#) [CDR33BX104AKUR](#)  
[CDR33BX683AKUS](#) [CGA3E1X7R1C684K](#) [CL10C0R8BB8ANNC](#) [C1005X5R0G225M](#) [C2012X7R2E223K](#) [C3216C0G2J272J](#)  
[D55342E07B35E7R-T/R](#) [NMC0402X7R562J25TRPF](#) [NMC0603NPO102J25TRPF](#) [NMC1206X7R332K50TRPF](#) [726632-1](#)  
[CGA6M3X7R1H225K](#) [CGA5L2X7R2A105K](#) [CGA3E2X8R1H223K](#) [CDR33BX823AKUR\M500](#) [CDR35BX474AKUR\M500](#)  
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