

# X7R High Voltage Ceramic Chip Capacitors

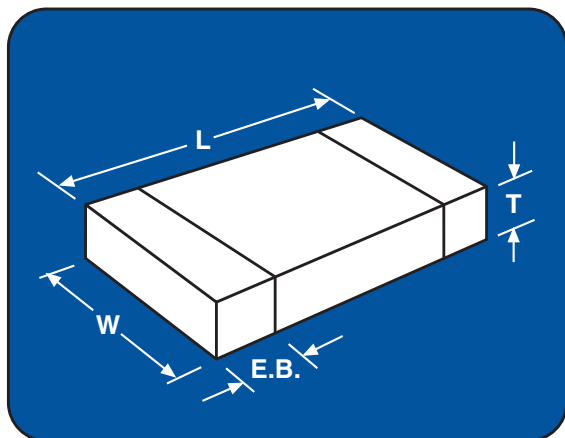
## 500VDC - 10000VDC



### General Specifications

#### X7R

|  |   |
|--|---|
| <b>Capacitance Range</b>               | 56pf-2.2µF(+25° C, 1.0Vrms, 1KHz) +/-   |
| <b>Capacitance Tolerance</b>           | 5,10,20%, +80/-20%  |
| <b>Temperature Coefficient</b>         | +/- 15%, from -55° C to 125° C 2.5% max.  |
| <b>Dissipation Factor</b>              | (+25° C, 1.0Vrms, 1KHz)   |
| <b>Voltage Ratings</b>                 | 500 Vdc to 10000 Vdc  |
| <b>Dielectric Withstanding Voltage</b> | 1.2x rated voltage (100mA max.)   |
| <b>Insulation Resistance (min.)</b>    | 100K megohms or 1K megohms-mfd at 25° C, whichever is less<br>10000 megohms or 100 megohms-mfd at 125° C, whichever is less |
| <b>Termination Type</b>                | Palladium Silver (100% Silver available upon request)   |



### Style and Size Information (All dimensions are in inches)

| STYLE | LENGTH(L)     | WIDTH(W)     | MAX THICKNESS(T) | ELECTRODE BAND (E.B.) MAX. |
|-------|---------------|--------------|------------------|----------------------------|
| 1515  | .150+/- .015  | .150+/- .015 | .100             | .025                       |
| 1808  | .180+/- .015  | .080+/- .010 | .070             | .025                       |
| 1812  | .180+/- .015  | .120+/- .015 | .110             | .025                       |
| 1825  | .180+/- .015  | .250+/- .020 | .150             | .025                       |
| 2020  | .200+/- .020  | .200+/- .020 | .150             | .025                       |
| 2225  | .220+/- .020  | .250+/- .020 | .180             | .025                       |
| 2520  | .250+/- .020  | .200+/- .020 | .180             | .025                       |
| 3530  | .350+/- .030  | .300+/- .030 | .200             | .030                       |
| 4040  | .400+/- .030  | .400+/- .030 | .200             | .030                       |
| 4540  | .450+/- .030  | .400+/- .030 | .200             | .030                       |
| 5550  | .550+/- .030  | .500+/- .030 | .200             | .030                       |
| 6560  | .650+/- .030  | .600+/- .030 | .200             | .030                       |
| 8580  | .850+/- .030  | .800+/- .030 | .200             | .030                       |
| 11050 | 1.100+/- .030 | .500+/- .030 | .200             | .030                       |
| 13060 | 1.300+/- .030 | .600+/- .030 | .200             | .030                       |

### X7R MAXIMUM CAPACITANCE

| STYLE | MIN     | 500V MAX | 1000V MAX | 2000V MAX | 3000V MAX | 4000V MAX | 5000V MAX | 10000V MAX |
|-------|---------|----------|-----------|-----------|-----------|-----------|-----------|------------|
| 1515  | 100 pf  | .039 µF  | .01 µF    | 1800 pf   |           |           |           |            |
| 1808  | 56 pf   | .022 µF  | .3900 pf  | 1500 pf   |           |           |           |            |
| 1812  | 100 pf  | .056 µF  | .01 µF    | 2700 pf   |           |           |           |            |
| 1825  | 100 pf  | .12 µF   | .039 µF   | .01 µF    |           |           |           |            |
| 2020  | 100 pf  | .1 µF    | .033 µF   | 8200 pf   | 3300 pf   |           |           |            |
| 2225  | 100 pf  | .27 µF   | .082 µF   | .015 µF   | 4700 pf   |           |           |            |
| 2520  | 100 pf  | .12 µF   | .047 µF   | .012 µF   | 4700 pf   |           |           |            |
| 3530  | 100 pf  | .56 µF   | .15 µF    | .033 µF   | .015 µF   | 6800 pf   |           |            |
| 4040  | 100 pf  | .82 µF   | .22 µF    | .068 µF   | .018 µF   | .01 µF    |           |            |
| 4540  | 100 pf  | 1.0 µF   | .27 µF    | .068 µF   | .027 µF   | .01 µF    | 6800 pf   |            |
| 5550  | 560 pf  | 1.5 µF   | .47 µF    | .1 µF     | .039 µF   | .018 µF   | .012 µF   |            |
| 6560  | 1000 pf | 2.2 µF   | .68 µF    | .18 µF    | .068 µF   | .027 µF   | .018 µF   |            |
| 8580  | 1000 pf |          | 1.0 µF    | .27 µF    | .1 µF     | .056 µF   | .022 µF   |            |
| 11050 | 1000 pf |          |           | .22 µF    | .082 µF   | .047 µF   | .022 µF   | 6800 pf    |
| 13060 | 1500 pf |          |           | .33 µF    | .12 µF    | .068 µF   | .039 µF   | .01 µF     |

### HowToOrder

(Custom sizes and values available, contact factory)

|                |                      |              |                        |                                   |                  |
|----------------|----------------------|--------------|------------------------|-----------------------------------|------------------|
| <b>202</b>     | <b>C</b>             | <b>4540</b>  | <b>B</b>               | <b>103</b>                        | <b>K</b>         |
| <b>Voltage</b> | <b>Configuration</b> | <b>Style</b> | <b>Dielectric Type</b> | <b>Capacitance Value</b>          | <b>Tolerance</b> |
| 501 = 500      | C = Chip             |              | B = X7R                | Capacitance In Picofarads         | J = ± 5%         |
| 102 = 1000     |                      |              |                        | Last Digit is the Number of Zeros | K = ± 10%        |
| 202 = 2000     |                      |              |                        | ie, 103 = 10,000 pf               | M = ± 20%        |
| 302 = 3000     |                      |              |                        |                                   | Z = + 80/- 20%   |
| 402 = 4000     |                      |              |                        |                                   | P = GMV          |
| 502 = 5000     |                      |              |                        |                                   |                  |
| 103 = 10,000   |                      |              |                        |                                   |                  |

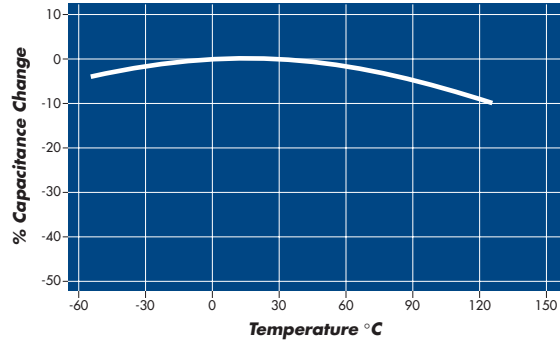
### CIRCUIT FUNCTIONS, Inc.

2282 Mouton Drive • Carson City, Nevada 89706 • (775) 885-8003 • Fax (775) 885-9943

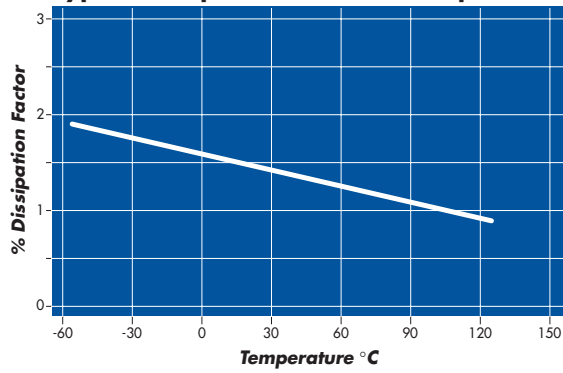
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Data Sheet Rev A

### Temperature Coefficient of Capacitance



### Typical Dissipation Factor vs. Temperature



### Minimum Insulation Resistance vs. Temperature and Capacitance

