

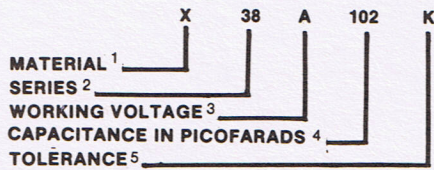
# X38 SERIES — X7R DIELECTRIC

## OPERATING TEMPERATURE RANGE —55° C to +200° C

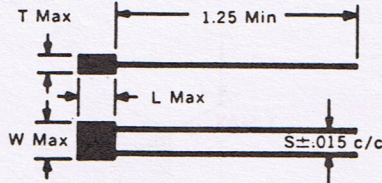
### HI-TEMP CERAMIC CAPACITORS

### RECTANGULAR — PRECISION EPOXY CASE — RADIAL LEADS SPECIFICATIONS

#### PART NUMBER AND ORDERING INFORMATION



- MATERIAL:** X = X7R
- SERIES:** 38 = 200° C  
Rectangular - Radial Leads
- WORKING VOLTAGE DC:**  
A = 100 VDC  
C = 50 VDC  
D = 25 VDC
- CAPACITANCE IN PICO FARADS:**  
102 = 1000 pF  
First two digits are significant,  
last digit signifies number of zeros.
- TOLERANCE:**  
J = ± 5%  
K = ± 10%  
M = ± 20%



**LEAD MATERIAL:**  
.025" dia Tinned Nickel  
per MIL-STD-1276 N-3  
WELDABLE AND SOLDERABLE

**WORKING VOLTAGE:** 25/50/100 VDC @ 200° C  
50/100/200 VDC @ 150° C  
**TEMPERATURE COEFFICIENT:** X7R ± 15% Change  
—55° C through +125° C  
See Figure 2.

**DISSIPATION FACTOR:** 2.5% Max @ 1kHz, 1 VRMS 25° C  
See Figure 4.

**INSULATION RESISTANCE:** 100,000 Megohms or 1000 Megohms-Microfarads, whichever is less at 25° C and Rated Voltage. 5000 Megohms or 5 Megohm-Microfarads, whichever is less at 200° C and Rated Voltage. See Figure 5.

**DIELECTRIC STRENGTH:** 250% Rated Voltage for 5 ± 1 Second with 100 MA maximum charging current.

**OPERATING TEMPERATURE RANGE:** —55° C through +200° C

**LIFE TEST:** In excess of 250 hours at Rated Voltage at 200° C.

**MARKING:** As size permits, the following markings will be used (listed in order of preference):

- Capacitance
- Mfg. Identification
- Tolerance
- Voltage
- Lot Code

| CAP      | 25 VDC |      |       |      | 50 VDC |      |       |      | 100 VDC |      |       |      |
|----------|--------|------|-------|------|--------|------|-------|------|---------|------|-------|------|
|          | L      | W    | T     | S    | L      | W    | T     | S    | L       | W    | T     | S    |
| 1000 pF  | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .200    | .200 | .100  | .200 |
| 1200     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .200    | .200 | .100  | .200 |
| 1500     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .200    | .200 | .100  | .200 |
| 1800     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .200    | .200 | .100  | .200 |
| 2200     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .200    | .200 | .100  | .200 |
| 2700     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .200    | .200 | .100  | .200 |
| 3300     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .200    | .200 | .100  | .200 |
| 3900     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .200    | .200 | .100  | .200 |
| 4700     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .200    | .200 | .100  | .200 |
| 5600     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .200    | .200 | .100  | .200 |
| 6800     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .200    | .200 | .100  | .200 |
| 8200     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .200    | .200 | .100  | .200 |
| .010 Mfd | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .300    | .300 | .100  | .200 |
| .012     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .300    | .300 | .100  | .200 |
| .015     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .300    | .300 | .100  | .200 |
| .018     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .300    | .300 | .100  | .200 |
| .022     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .300    | .300 | .100  | .200 |
| .025     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .300    | .300 | .100  | .200 |
| .027     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .300    | .300 | .100  | .200 |
| .033     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .300    | .300 | .100  | .200 |
| .039     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .300    | .300 | .100  | .200 |
| .047     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .300    | .300 | .100  | .200 |
| .050     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .300    | .300 | .150  | .200 |
| .056     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .300    | .300 | .150  | .200 |
| .068     | .200   | .200 | .100  | .200 | .200   | .200 | .100  | .200 | .300    | .300 | .150  | .200 |
| .082     | .300   | .300 | .100  | .200 | .300   | .300 | .100  | .200 | .500    | .500 | .100  | .400 |
| .10      | .300   | .300 | .100  | .200 | .300   | .300 | .100  | .200 | .500    | .500 | .100  | .400 |
| .12      | .300   | .300 | .100  | .200 | .300   | .300 | .100  | .200 | .500    | .500 | .150  | .400 |
| .15      | .300   | .300 | .100  | .200 | .300   | .300 | .100  | .200 | .500    | .500 | .150  | .400 |
| .18      | .300   | .300 | .100  | .200 | .300   | .300 | .150  | .200 | .500    | .500 | .150  | .400 |
| .22      | .300   | .300 | .100  | .200 | .300   | .300 | .150  | .200 | .500    | .500 | .200  | .400 |
| .25      | .300   | .300 | .100  | .200 | .300   | .300 | .150  | .200 | .500    | .500 | .200  | .400 |
| .27      | .300   | .300 | .100  | .200 | .300   | .300 | .150  | .200 | .500    | .500 | .200  | .400 |
| .33      | .300   | .300 | .100  | .200 | .500   | .500 | .100  | .400 | .500    | .500 | .250  | .400 |
| .39      | .300   | .300 | .100  | .200 | .500   | .500 | .100  | .400 | .500    | .500 | .250  | .400 |
| .47      | .300   | .300 | .150  | .200 | .500   | .500 | .150  | .400 | .500    | .500 | .300  | .400 |
| .50      | .300   | .300 | .150  | .200 | .500   | .500 | .150  | .400 | .500    | .500 | .300  | .400 |
| .56      | .300   | .300 | .150  | .200 | .500   | .500 | .150  | .400 | .400    | .700 | .350  | .600 |
| .68      | .300   | .300 | .150  | .200 | .500   | .500 | .150  | .400 | .400    | .700 | .350  | .600 |
| .82      | .500   | .500 | .100  | .400 | .500   | .500 | .200  | .400 | .400    | .700 | .350  | .600 |
| 1.0      | .500   | .500 | .150  | .400 | .500   | .500 | .200  | .400 | .400    | .700 | .500  | .600 |
| 1.5      | .500   | .500 | .200  | .400 | .500   | .500 | .250  | .400 | .400    | .700 | .700  | .600 |
| 2.0      | .500   | .500 | .200  | .400 | .500   | .500 | .300  | .400 | .400    | .700 | 1.000 | .600 |
| 2.5      | .500   | .500 | .250  | .400 | .400   | .700 | .350  | .600 |         |      |       |      |
| 3.0      | .500   | .500 | .300  | .400 | .400   | .700 | .400  | .600 |         |      |       |      |
| 4.0      | .400   | .700 | .350  | .600 | .400   | .700 | .500  | .600 |         |      |       |      |
| 5.0      | .400   | .700 | .400  | .600 | .400   | .700 | .600  | .600 |         |      |       |      |
| 6.0      | .400   | .700 | .600  | .600 | .400   | .700 | .800  | .600 |         |      |       |      |
| 8.0      | .400   | .700 | .800  | .600 | .400   | .700 | 1.000 | .600 |         |      |       |      |
| 10.0     | .400   | .700 | 1.000 | .600 |        |      |       |      |         |      |       |      |