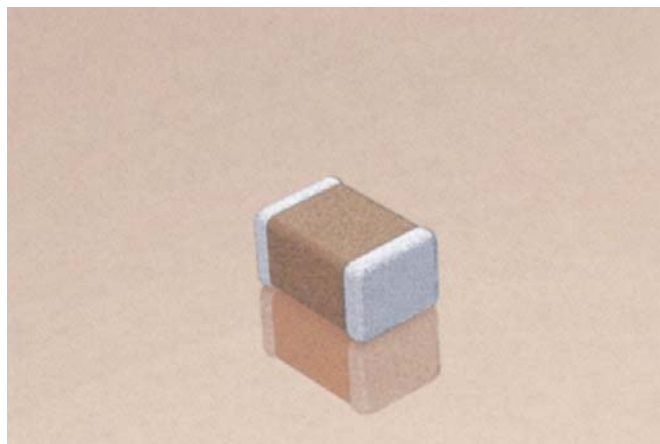


# X7R Dielectric

## General Specifications



X7R formulations are called "temperature stable" ceramics and fall into EIA Class II materials. X7R is the most popular of these intermediate dielectric constant materials. Its temperature variation of capacitance is within  $\pm 15\%$  from  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ . This capacitance change is non-linear.

Capacitance for X7R varies under the influence of electrical operating conditions such as voltage and frequency.

X7R dielectric chip usage covers the broad spectrum of industrial applications where known changes in capacitance due to applied voltages are acceptable.

### PART NUMBER (see page 2 for complete part number explanation)

**0805**

**Size**  
(L" x W")

**5**

**Voltage**  
4V = 4  
6.3V = 6  
10V = Z  
16V = Y  
25V = 3  
50V = 5  
100V = 1  
200V = 2  
500V = 7

**C**

**Dielectric**  
X7R = C

**103**

**Capacitance Code (In pF)**  
2 Sig. Digits + Number of Zeros

**M**

**Capacitance Tolerance**  
J =  $\pm 5\%^*$   
K =  $\pm 10\%$   
M =  $\pm 20\%$

\* $\leq 1\mu\text{F}$  only

**A**

**Failure Rate**  
A = Not Applicable

**T**

**Terminations**  
T = Plated Ni and Sn  
7 = Gold Plated\*  
Z = FLEXITERM<sup>®</sup>\*\*

\*Optional termination

\*\*See FLEXITERM<sup>®</sup> X7R section

**2**

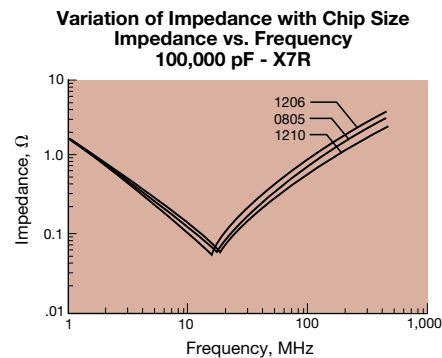
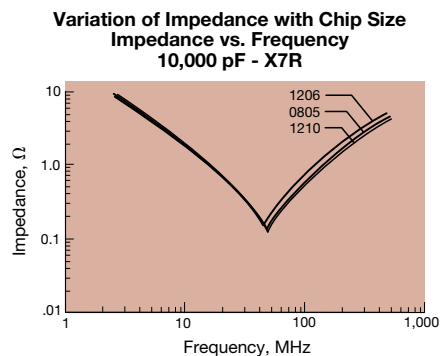
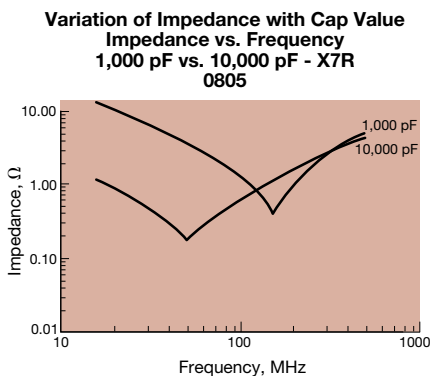
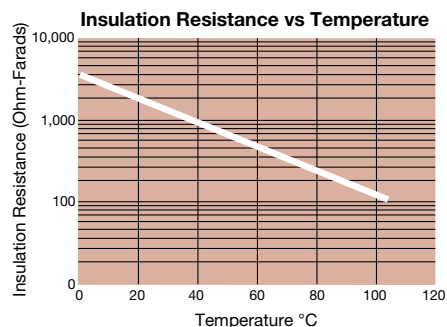
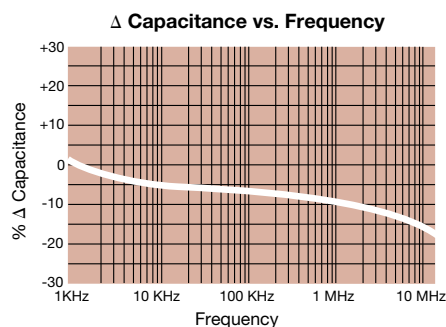
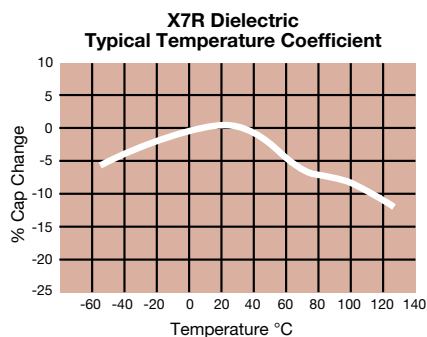
**Packaging**  
2 = 7" Reel  
4 = 13" Reel  
7 = Bulk Cass.  
9 = Bulk

**Contact Factory For Multiples**

**A**

**Special Code**  
A = Std. Product

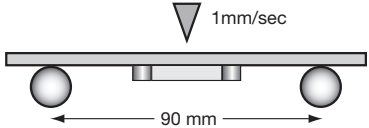
NOTE: Contact factory for availability of Termination and Tolerance Options for Specific Part Numbers.  
Contact factory for non-specified capacitance values.



# X7R Dielectric



## Specifications and Test Methods

| Parameter/Test                 |                       | X7R Specification Limits                                                                                                                       | Measuring Conditions                                                                                                                                                                                                                                |                    |
|--------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| Operating Temperature Range    |                       | -55°C to +125°C                                                                                                                                | Temperature Cycle Chamber                                                                                                                                                                                                                           |                    |
| Capacitance                    |                       | Within specified tolerance                                                                                                                     | Freq.: 1.0 kHz $\pm$ 10%<br>Voltage: 1.0Vrms $\pm$ .2V<br>For Cap > 10 $\mu$ F, 0.5Vrms @ 120Hz                                                                                                                                                     |                    |
| Dissipation Factor             |                       | $\leq$ 2.5% for $\geq$ 50V DC rating<br>$\leq$ 3.0% for 25V DC rating<br>$\leq$ 3.5% for 16V DC rating<br>$\leq$ 5.0% for $\leq$ 10V DC rating |                                                                                                                                                                                                                                                     |                    |
| Insulation Resistance          |                       | 100,000M $\Omega$ or 1000M $\Omega$ - $\mu$ F, whichever is less                                                                               |                                                                                                                                                                                                                                                     |                    |
| Dielectric Strength            |                       | No breakdown or visual defects                                                                                                                 | Charge device with 300% of rated voltage for 1-5 seconds, w/charge and discharge current limited to 50 mA (max)<br>Note: Charge device with 150% of rated voltage for 500V devices.                                                                 |                    |
| Resistance to Flexure Stresses | Appearance            | No defects                                                                                                                                     | Deflection: 2mm<br>Test Time: 30 seconds<br>                                                                                                                     |                    |
|                                | Capacitance Variation | $\leq \pm 12\%$                                                                                                                                |                                                                                                                                                                                                                                                     |                    |
|                                | Dissipation Factor    | Meets Initial Values (As Above)                                                                                                                |                                                                                                                                                                                                                                                     |                    |
|                                | Insulation Resistance | $\geq$ Initial Value x 0.3                                                                                                                     |                                                                                                                                                                                                                                                     |                    |
| Solderability                  |                       | $\geq$ 95% of each terminal should be covered with fresh solder                                                                                | Dip device in eutectic solder at 230 $\pm$ 5°C for 5.0 $\pm$ 0.5 seconds                                                                                                                                                                            |                    |
| Resistance to Solder Heat      | Appearance            | No defects, <25% leaching of either end terminal                                                                                               | Dip device in eutectic solder at 260°C for 60 seconds. Store at room temperature for 24 $\pm$ 2 hours before measuring electrical properties.                                                                                                       |                    |
|                                | Capacitance Variation | $\leq \pm 7.5\%$                                                                                                                               |                                                                                                                                                                                                                                                     |                    |
|                                | Dissipation Factor    | Meets Initial Values (As Above)                                                                                                                |                                                                                                                                                                                                                                                     |                    |
|                                | Insulation Resistance | Meets Initial Values (As Above)                                                                                                                |                                                                                                                                                                                                                                                     |                    |
|                                | Dielectric Strength   | Meets Initial Values (As Above)                                                                                                                |                                                                                                                                                                                                                                                     |                    |
| Thermal Shock                  | Appearance            | No visual defects                                                                                                                              | Step 1: -55°C $\pm$ 2°                                                                                                                                                                                                                              | 30 $\pm$ 3 minutes |
|                                | Capacitance Variation | $\leq \pm 7.5\%$                                                                                                                               | Step 2: Room Temp                                                                                                                                                                                                                                   | $\leq$ 3 minutes   |
|                                | Dissipation Factor    | Meets Initial Values (As Above)                                                                                                                | Step 3: +125°C $\pm$ 2°                                                                                                                                                                                                                             | 30 $\pm$ 3 minutes |
|                                | Insulation Resistance | Meets Initial Values (As Above)                                                                                                                | Step 4: Room Temp                                                                                                                                                                                                                                   | $\leq$ 3 minutes   |
|                                | Dielectric Strength   | Meets Initial Values (As Above)                                                                                                                | Repeat for 5 cycles and measure after 24 $\pm$ 2 hours at room temperature                                                                                                                                                                          |                    |
| Load Life                      | Appearance            | No visual defects                                                                                                                              | Charge device with 1.5 rated voltage ( $\leq$ 10V) in test chamber set at 125°C $\pm$ 2°C for 1000 hours (+48, -0)<br><br>Remove from test chamber and stabilize at room temperature for 24 $\pm$ 2 hours before measuring.                         |                    |
|                                | Capacitance Variation | $\leq \pm 12.5\%$                                                                                                                              |                                                                                                                                                                                                                                                     |                    |
|                                | Dissipation Factor    | $\leq$ Initial Value x 2.0 (See Above)                                                                                                         |                                                                                                                                                                                                                                                     |                    |
|                                | Insulation Resistance | $\geq$ Initial Value x 0.3 (See Above)                                                                                                         |                                                                                                                                                                                                                                                     |                    |
|                                | Dielectric Strength   | Meets Initial Values (As Above)                                                                                                                |                                                                                                                                                                                                                                                     |                    |
| Load Humidity                  | Appearance            | No visual defects                                                                                                                              | Store in a test chamber set at 85°C $\pm$ 2°C/ 85% $\pm$ 5% relative humidity for 1000 hours (+48, -0) with rated voltage applied.<br><br>Remove from chamber and stabilize at room temperature and humidity for 24 $\pm$ 2 hours before measuring. |                    |
|                                | Capacitance Variation | $\leq \pm 12.5\%$                                                                                                                              |                                                                                                                                                                                                                                                     |                    |
|                                | Dissipation Factor    | $\leq$ Initial Value x 2.0 (See Above)                                                                                                         |                                                                                                                                                                                                                                                     |                    |
|                                | Insulation Resistance | $\geq$ Initial Value x 0.3 (See Above)                                                                                                         |                                                                                                                                                                                                                                                     |                    |
|                                | Dielectric Strength   | Meets Initial Values (As Above)                                                                                                                |                                                                                                                                                                                                                                                     |                    |

# X7R Dielectric

## Capacitance Range



### PREFERRED SIZES ARE SHADED

| SIZE           |          | 0201                           |                 |                 | 0402                           |                 |    | 0603                           |                 |                 |                 |                 |                 | 0805                           |                 |    |    |    |    | 1206                           |     |     |    |    |    |    |     |     |     |
|----------------|----------|--------------------------------|-----------------|-----------------|--------------------------------|-----------------|----|--------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------------------------------|-----------------|----|----|----|----|--------------------------------|-----|-----|----|----|----|----|-----|-----|-----|
| Soldering      |          | Reflow Only                    |                 |                 | Reflow Only                    |                 |    | Reflow Only                    |                 |                 |                 |                 |                 | Reflow/Wave                    |                 |    |    |    |    | Reflow/Wave                    |     |     |    |    |    |    |     |     |     |
| Packaging      |          | All Paper                      |                 |                 | All Paper                      |                 |    | All Paper                      |                 |                 |                 |                 |                 | Paper/Embossed                 |                 |    |    |    |    | Paper/Embossed                 |     |     |    |    |    |    |     |     |     |
| (L) Length     | MM (in.) | 0.60 ± 0.03<br>(0.024 ± 0.001) |                 |                 | 1.00 ± 0.10<br>(0.040 ± 0.004) |                 |    | 1.60 ± 0.15<br>(0.063 ± 0.006) |                 |                 |                 |                 |                 | 2.01 ± 0.20<br>(0.079 ± 0.008) |                 |    |    |    |    | 3.20 ± 0.20<br>(0.126 ± 0.008) |     |     |    |    |    |    |     |     |     |
| (W) Width      | MM (in.) | 0.30 ± 0.03<br>(0.011 ± 0.001) |                 |                 | 0.50 ± 0.10<br>(0.020 ± 0.004) |                 |    | 0.81 ± 0.15<br>(0.032 ± 0.006) |                 |                 |                 |                 |                 | 1.25 ± 0.20<br>(0.049 ± 0.008) |                 |    |    |    |    | 1.60 ± 0.20<br>(0.063 ± 0.008) |     |     |    |    |    |    |     |     |     |
| (t) Terminal   | MM (in.) | 0.15 ± 0.05<br>(0.006 ± 0.002) |                 |                 | 0.25 ± 0.15<br>(0.010 ± 0.006) |                 |    | 0.35 ± 0.15<br>(0.014 ± 0.006) |                 |                 |                 |                 |                 | 0.50 ± 0.25<br>(0.020 ± 0.010) |                 |    |    |    |    | 0.50 ± 0.25<br>(0.020 ± 0.010) |     |     |    |    |    |    |     |     |     |
| WVDC           |          | 10                             | 16              | 25              | 16                             | 25              | 50 | 6.3                            | 10              | 16              | 25              | 50              | 100             | 200                            | 6.3             | 10 | 16 | 25 | 50 | 100                            | 200 | 6.3 | 10 | 16 | 25 | 50 | 100 | 200 | 500 |
| Cap (pF)       | 100      | A                              | A               | A               |                                |                 |    |                                |                 |                 |                 |                 |                 |                                |                 |    |    |    |    |                                |     |     |    |    |    |    |     |     |     |
|                | 150      | A                              | A               | A               |                                |                 |    |                                |                 |                 |                 |                 |                 |                                |                 |    |    |    |    |                                |     |     |    |    |    |    |     |     |     |
|                | 220      | A                              | A               | A               |                                |                 | C  |                                |                 |                 |                 |                 |                 |                                |                 |    |    |    |    |                                |     |     |    |    |    |    |     |     |     |
|                | 330      | A                              | A               | A               |                                |                 | C  |                                |                 |                 |                 | G               | G               | G                              |                 | J  | J  | J  | J  | J                              | J   |     |    |    |    |    |     |     | K   |
|                | 470      | A                              | A               |                 |                                |                 | C  |                                |                 |                 |                 | G               | G               | G                              |                 | J  | J  | J  | J  | J                              | J   |     |    |    |    |    |     |     | K   |
|                | 680      | A                              | A               |                 |                                |                 | C  |                                |                 |                 |                 | G               | G               | G                              |                 | J  | J  | J  | J  | J                              | J   |     |    |    |    |    |     |     | K   |
|                | 1000     | A                              | A               |                 |                                |                 | C  |                                |                 |                 |                 | G               | G               | G                              |                 | J  | J  | J  | J  | J                              | J   |     |    |    |    |    |     |     | K   |
|                | 1500     | A                              |                 |                 |                                |                 | C  |                                |                 |                 |                 | G               | G               | G                              |                 | J  | J  | J  | J  | J                              | J   |     | J  | J  | J  | J  | J   | J   | M   |
|                | 2200     | A                              |                 |                 |                                |                 | C  |                                |                 |                 |                 | G               | G               | G                              |                 | J  | J  | J  | J  | J                              | J   |     | J  | J  | J  | J  | J   | J   | M   |
|                | 3300     | A                              |                 |                 |                                |                 | C  |                                |                 |                 |                 | G               | G               | G                              |                 | J  | J  | J  | J  | J                              | J   |     | J  | J  | J  | J  | J   | J   | M   |
|                | 4700     | A                              |                 |                 |                                |                 | C  |                                |                 |                 |                 | G               | G               | G                              |                 | J  | J  | J  | J  | J                              | J   |     | J  | J  | J  | J  | J   | J   | M   |
|                | 6800     | A                              |                 |                 |                                |                 | C  |                                |                 |                 |                 | G               | G               | G                              |                 | J  | J  | J  | J  | J                              | J   |     | J  | J  | J  | J  | J   | J   | M   |
| Cap (μF)       | 0.010    | A                              |                 |                 |                                | C               | C  |                                |                 |                 |                 | G               | G               |                                |                 | J  | J  | J  | J  | J                              | J   |     | J  | J  | J  | J  | J   | J   | P   |
|                | 0.015    |                                |                 |                 |                                | C               | C  |                                |                 |                 |                 | G               | G               |                                |                 | J  | J  | J  | J  | J                              | J   |     | J  | J  | J  | J  | J   | M   |     |
|                | 0.022    |                                |                 |                 |                                | C               | C  |                                |                 |                 |                 | G               | G               |                                |                 | J  | J  | J  | J  | J                              | J   |     | J  | J  | J  | J  | J   | M   |     |
|                | 0.033    |                                |                 |                 |                                |                 |    |                                |                 |                 |                 | G               | G               |                                |                 | J  | J  | J  | J  | N                              | N   |     | J  | J  | J  | J  | J   | M   |     |
|                | 0.047    |                                |                 |                 |                                |                 |    |                                |                 |                 |                 | G               | G               |                                |                 | J  | J  | J  | J  | N                              | N   |     | J  | J  | J  | J  | J   | M   |     |
|                | 0.068    |                                |                 |                 |                                |                 |    |                                |                 |                 |                 | G               | G               |                                |                 | J  | J  | J  | J  | N                              | N   |     | J  | J  | J  | J  | J   | M   |     |
|                | 0.10     |                                |                 |                 |                                |                 |    |                                |                 |                 |                 | G               | G               |                                |                 | J  | J  | J  | J  | N                              | N   |     | J  | J  | J  | J  | Q   | P   |     |
|                | 0.15     |                                |                 |                 |                                |                 |    |                                |                 |                 |                 | G               | G               |                                |                 | J  | J  | J  | J  | N                              | N   |     | J  | J  | J  | J  | Q   |     |     |
|                | 0.22     |                                |                 |                 |                                |                 |    |                                |                 |                 |                 |                 | J               |                                |                 | J  | J  | N  | N  |                                |     |     | J  | J  | J  | J  | Q   |     |     |
|                | 0.33     |                                |                 |                 |                                |                 |    |                                |                 |                 |                 |                 |                 |                                |                 | N  | N  | N  | N  |                                |     |     | J  | J  | M  | P  | Q   | Q   |     |
|                | 0.47     |                                |                 |                 |                                |                 |    |                                |                 |                 |                 |                 |                 |                                |                 | N  | N  | N  | N  |                                |     |     | M  | M  | M  | P  | Q   | Q   |     |
|                | 0.68     |                                |                 |                 |                                |                 |    |                                |                 |                 |                 |                 |                 |                                |                 | N  | N  | N  | N  |                                |     |     | M  | M  | Q  | Q  | Q   | Q   |     |
|                | 1.0      |                                |                 |                 |                                |                 |    |                                |                 | J               | J               |                 |                 |                                |                 | N  | N  | N  |    |                                |     |     | M  | M  | Q  | Q  | Q   |     |     |
|                | 1.5      |                                |                 |                 |                                |                 |    |                                |                 |                 |                 |                 |                 |                                |                 |    |    |    |    |                                |     |     | P  | Q  | Q  | Q  |     |     |     |
|                | 2.2      |                                |                 |                 |                                |                 |    |                                |                 | J               |                 |                 |                 |                                |                 |    |    |    |    |                                |     |     | Q  | Q  | Q  |    |     |     |     |
|                | 3.3      |                                |                 |                 |                                |                 |    |                                |                 |                 |                 |                 |                 |                                |                 |    |    |    |    |                                |     |     |    | Q  | Q  | Q  |     |     |     |
|                | 4.7      |                                |                 |                 |                                |                 |    |                                |                 |                 |                 |                 |                 |                                |                 |    |    |    |    |                                |     |     |    |    |    |    |     |     |     |
|                | 10       |                                |                 |                 |                                |                 |    |                                |                 |                 |                 |                 |                 |                                |                 |    |    |    |    |                                |     |     |    |    |    |    |     |     |     |
|                | 22       |                                |                 |                 |                                |                 |    |                                |                 |                 |                 |                 |                 |                                |                 |    |    |    |    |                                |     |     |    |    |    |    |     |     |     |
|                | 47       |                                |                 |                 |                                |                 |    |                                |                 |                 |                 |                 |                 |                                |                 |    |    |    |    |                                |     |     |    |    |    |    |     |     |     |
| 100            |          |                                |                 |                 |                                |                 |    |                                |                 |                 |                 |                 |                 |                                |                 |    |    |    |    |                                |     |     |    |    |    |    |     |     |     |
| WVDC           |          | 10                             | 16              | 25              | 16                             | 25              | 50 | 6.3                            | 10              | 16              | 25              | 50              | 100             | 200                            | 6.3             | 10 | 16 | 25 | 50 | 100                            | 200 | 6.3 | 10 | 16 | 25 | 50 | 100 | 200 | 500 |
| SIZE           |          | 0201                           |                 |                 | 0402                           |                 |    | 0603                           |                 |                 |                 |                 |                 | 0805                           |                 |    |    |    |    | 1206                           |     |     |    |    |    |    |     |     |     |
| Letter         |          | A                              | C               | E               | G                              | J               |    | K                              | M               | N               | P               | Q               | X               | Y                              | Z               |    |    |    |    |                                |     |     |    |    |    |    |     |     |     |
| Max. Thickness |          | 0.33<br>(0.013)                | 0.56<br>(0.022) | 0.71<br>(0.028) | 0.90<br>(0.035)                | 0.94<br>(0.037) |    | 1.02<br>(0.040)                | 1.27<br>(0.050) | 1.40<br>(0.055) | 1.52<br>(0.060) | 1.78<br>(0.070) | 2.29<br>(0.090) | 2.54<br>(0.100)                | 2.79<br>(0.110) |    |    |    |    |                                |     |     |    |    |    |    |     |     |     |
| PAPER          |          |                                |                 |                 |                                |                 |    |                                |                 | EMBOSSED        |                 |                 |                 |                                |                 |    |    |    |    |                                |     |     |    |    |    |    |     |     |     |

 = Under Development

# X7R Dielectric

## Capacitance Range



### PREFERRED SIZES ARE SHADED

| SIZE           |          | 1210                        |              |              |              |              |        |              | 1812                        |              |              |              | 1825                        |              | 2220                        |    |     |     | 2225                        |     |   |
|----------------|----------|-----------------------------|--------------|--------------|--------------|--------------|--------|--------------|-----------------------------|--------------|--------------|--------------|-----------------------------|--------------|-----------------------------|----|-----|-----|-----------------------------|-----|---|
| Soldering      |          | Reflow Only                 |              |              |              |              |        |              | Reflow Only                 |              |              |              | Reflow Only                 |              | Reflow Only                 |    |     |     | Reflow Only                 |     |   |
| Packaging      |          | Paper/Embossed              |              |              |              |              |        |              | All Embossed                |              |              |              | All Embossed                |              | All Embossed                |    |     |     | All Embossed                |     |   |
| (L) Length     | MM (in.) | 3.20 ± 0.20 (0.126 ± 0.008) |              |              |              |              |        |              | 4.50 ± 0.30 (0.177 ± 0.012) |              |              |              | 4.50 ± 0.30 (0.177 ± 0.012) |              | 5.70 ± 0.40 (0.225 ± 0.016) |    |     |     | 5.72 ± 0.25 (0.225 ± 0.010) |     |   |
| (W) Width      | MM (in.) | 2.50 ± 0.20 (0.098 ± 0.008) |              |              |              |              |        |              | 3.20 ± 0.20 (0.126 ± 0.008) |              |              |              | 6.40 ± 0.40 (0.252 ± 0.016) |              | 5.00 ± 0.40 (0.197 ± 0.016) |    |     |     | 6.35 ± 0.25 (0.250 ± 0.010) |     |   |
| (t) Terminal   | MM (in.) | 0.50 ± 0.25 (0.020 ± 0.010) |              |              |              |              |        |              | 0.61 ± 0.36 (0.024 ± 0.014) |              |              |              | 0.61 ± 0.36 (0.024 ± 0.014) |              | 0.64 ± 0.39 (0.025 ± 0.015) |    |     |     | 0.64 ± 0.39 (0.025 ± 0.015) |     |   |
| WVDC           |          | 10                          | 16           | 25           | 50           | 100          | 200    | 500          | 50                          | 100          | 200          | 500          | 50                          | 100          | 25                          | 50 | 100 | 200 | 50                          | 100 |   |
| Cap (pF)       |          | 100                         |              |              |              |              |        |              |                             |              |              |              |                             |              |                             |    |     |     |                             |     |   |
|                |          | 150                         |              |              |              |              |        |              |                             |              |              |              |                             |              |                             |    |     |     |                             |     |   |
|                |          | 220                         |              |              |              |              |        |              |                             |              |              |              |                             |              |                             |    |     |     |                             |     |   |
|                |          | 330                         |              |              |              |              |        |              |                             |              |              |              |                             |              |                             |    |     |     |                             |     |   |
|                |          | 470                         |              |              |              |              |        |              |                             |              |              |              |                             |              |                             |    |     |     |                             |     |   |
|                |          | 680                         |              |              |              |              |        |              |                             |              |              |              |                             |              |                             |    |     |     |                             |     |   |
|                |          | 1000                        |              |              |              |              |        |              |                             |              |              |              |                             |              |                             |    |     |     |                             |     |   |
|                |          | 1500                        | J            | J            | J            | J            | J      | J            | M                           |              |              |              |                             |              |                             |    |     |     |                             |     |   |
|                |          | 2200                        | J            | J            | J            | J            | J      | J            | M                           |              |              |              |                             |              |                             |    |     |     |                             |     |   |
|                |          | 3300                        | J            | J            | J            | J            | J      | J            | M                           |              |              |              |                             |              |                             |    |     |     |                             |     |   |
|                |          | 4700                        | J            | J            | J            | J            | J      | J            | M                           |              |              |              |                             |              |                             |    |     |     |                             |     |   |
|                |          | 6800                        | J            | J            | J            | J            | J      | J            | M                           |              |              |              |                             |              |                             |    |     |     |                             |     |   |
| Cap (μF)       |          | 0.010                       | J            | J            | J            | J            | J      | J            | M                           | K            | K            | K            | K                           | M            | M                           |    | X   | X   | X                           | M   | P |
|                |          | 0.015                       | J            | J            | J            | J            | J      | J            | P                           | K            | K            | K            | P                           | M            | M                           |    | X   | X   | X                           | M   | P |
|                |          | 0.022                       | J            | J            | J            | J            | J      | J            | Q                           | K            | K            | K            | P                           | M            | M                           |    | X   | X   | X                           | M   | P |
|                |          | 0.033                       | J            | J            | J            | J            | J      | J            | Q                           | K            | K            | K            | X                           | M            | M                           |    | X   | X   | X                           | M   | P |
|                |          | 0.047                       | J            | J            | J            | J            | J      | J            |                             | K            | K            | K            | Z                           | M            | M                           |    | X   | X   | X                           | M   | P |
|                |          | 0.068                       | J            | J            | J            | J            | J      | M            |                             | K            | K            | K            | Z                           | M            | M                           |    | X   | X   | X                           | M   | P |
|                |          | 0.10                        | J            | J            | J            | J            | J      | M            |                             | K            | K            | K            | Z                           | M            | M                           |    | X   | X   | X                           | M   | P |
|                |          | 0.15                        | J            | J            | J            | J            | M      |              |                             | K            | K            | P            |                             | M            | M                           |    | X   | X   | X                           | M   | P |
|                |          | 0.22                        | J            | J            | J            | J            | P      |              |                             | K            | K            | P            |                             | M            | M                           |    | X   | X   | X                           | M   | P |
|                |          | 0.33                        | J            | J            | J            | J            | Z      |              |                             | K            | M            |              |                             | M            | M                           |    | X   | X   |                             | M   | P |
|                |          | 0.47                        | M            | M            | M            | M            | Z      |              |                             | K            | P            |              |                             | M            | M                           |    | X   | X   |                             | M   | P |
|                |          | 0.68                        | M            | M            | P            | X            | Z      |              |                             | M            | Q            |              |                             | M            | P                           |    | X   | X   |                             | M   | P |
|                |          | 1.0                         | N            | N            | P            | X            | Z      |              |                             | M            | X            |              |                             | M            | P                           |    | X   | Z   |                             | M   | P |
|                |          | 1.5                         | N            | N            | Z            | Z            | Z      |              |                             | Z            | Z            |              |                             | M            |                             |    | X   | Z   |                             | M   | X |
|                |          | 2.2                         | X            | X            | Z            | Z            | Z      |              |                             | Z            | Z            |              |                             | M            |                             |    | X   |     |                             | M   |   |
|                |          | 3.3                         | X            | X            | Z            | Z            |        |              |                             | Z            |              |              |                             |              |                             |    | X   |     |                             |     |   |
|                |          | 4.7                         | X            | X            | Z            | Z            |        |              |                             | Z            |              |              |                             |              |                             |    | X   |     |                             |     |   |
|                |          | 10                          | Z            | Z            | Z            |              |        |              |                             |              |              |              |                             |              |                             |    | Z   |     |                             |     |   |
|                |          | 22                          | Z            | Z            |              |              |        |              |                             |              |              |              |                             |              | Z                           |    |     |     |                             |     |   |
|                |          | 47                          |              |              |              |              |        |              |                             |              |              |              |                             |              |                             |    |     |     |                             |     |   |
|                |          | 100                         |              |              |              |              |        |              |                             |              |              |              |                             |              |                             |    |     |     |                             |     |   |
| WVDC           |          | 10                          | 16           | 25           | 50           | 100          | 200    | 500          | 50                          | 100          | 200          | 500          | 50                          | 100          | 25                          | 50 | 100 | 200 | 50                          | 100 |   |
| SIZE           |          | 1210                        |              |              |              |              |        |              | 1812                        |              |              |              | 1825                        |              | 2220                        |    |     |     | 2225                        |     |   |
| Letter         |          | A                           | C            | E            | G            | J            |        | K            | M                           | N            | P            | Q            | X                           | Y            | Z                           |    |     |     |                             |     |   |
| Max. Thickness |          | 0.33 (0.013)                | 0.56 (0.022) | 0.71 (0.028) | 0.90 (0.035) | 0.94 (0.037) |        | 1.02 (0.040) | 1.27 (0.050)                | 1.40 (0.055) | 1.52 (0.060) | 1.78 (0.070) | 2.29 (0.090)                | 2.54 (0.100) | 2.79 (0.110)                |    |     |     |                             |     |   |
| PAPER          |          |                             |              |              |              |              | EMBOSS |              |                             |              |              |              |                             |              |                             |    |     |     |                             |     |   |

= Under Development



## О компании

ООО "ТрейдЭлектроникс" - это оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов. Реализуемая нашей компанией продукция насчитывает более полумиллиона наименований.

Благодаря этому наша компания предлагает к поставке практически не ограниченный ассортимент компонентов как оптовыми, мелкооптовыми партиями, так и в розницу.

Наличие собственной эффективной системы логистики обеспечивает надежную поставку продукции по конкурентным ценам в точно указанные сроки.

Срок поставки со стоков в **Европе и Америке – от 3 до 14 дней.**

Срок поставки из **Азии – от 10 дней.**

Благодаря развитой сети поставщиков, помогаем в поиске и приобретении экзотичных или снятых с производства компонентов.

Предоставляем спец цены на элементы для создания инженерных сэмплов.

**Упорный труд, качественный результат дают нам право быть уверенными в себе и надежными для наших клиентов.**

### **Наша компания это:**

- Гарантия качества поставляемой продукции
- Широкий ассортимент
- Минимальные сроки поставок
- Техническая поддержка
- Подбор комплектации
- Индивидуальный подход
- Гибкое ценообразование

Наша организация особенно сильна в поставках модулей, микросхем, пассивных компонентов, ксайленсах (XC), EPF, EPM и силовой электроники.

Большой выбор предлагаемой продукции, различные виды оплаты и доставки, позволят Вам сэкономить время и получить максимум выгоды от сотрудничества с нами!

## Перечень производителей, продукцию которых мы поставляем на российский рынок





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С удовольствием будем прорабатывать для Вас поставки всех необходимых компонентов по текущим запросам для скорейшего выявления групп элементов, по которым сотрудничество именно с нашей компанией будет для Вас максимально выгодным!

С уважением,

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