

# C0G (NP0) Dielectric



## General Specifications



C0G (NP0) is the most popular formulation of the "temperature-compensating," EIA Class I ceramic materials. Modern C0G (NP0) formulations contain neodymium, samarium and other rare earth oxides.

C0G (NP0) ceramics offer one of the most stable capacitor dielectrics available. Capacitance change with temperature is  $0 \pm 30 \text{ ppm}/^\circ\text{C}$  which is less than  $\pm 0.3\% \Delta C$  from  $-55^\circ\text{C}$  to  $+125^\circ\text{C}$ . Capacitance drift or hysteresis for C0G (NP0) ceramics is negligible at less than  $\pm 0.05\%$  versus up to  $\pm 2\%$  for films. Typical capacitance change with life is less than  $\pm 0.1\%$  for C0G (NP0), one-fifth that shown by most other dielectrics. C0G (NP0) formulations show no aging characteristics.

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

**0805**

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

**5**

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

**A**

**Dielectric**  
C0G (NP0) = A

**101**

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

**J**

**Capacitance Tolerance**  
B =  $\pm 10 \text{ pF}$  ( $< 10 \text{ pF}$ )  
C =  $\pm 25 \text{ pF}$  ( $< 10 \text{ pF}$ )  
D =  $\pm 50 \text{ pF}$  ( $< 10 \text{ pF}$ )  
F =  $\pm 1\%$  ( $\geq 10 \text{ pF}$ )  
G =  $\pm 2\%$  ( $\geq 10 \text{ pF}$ )  
J =  $\pm 5\%$   
K =  $\pm 10\%$

**A**

**Failure Rate**  
A = Not Applicable

**T**

**Terminations**  
T = Plated Ni and Sn  
7 = Gold Plated  
  
**Contact Factory For**  
1 = Pd/Ag Term

**2**

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

**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.

**Temperature Coefficient**



**Δ Capacitance vs. Frequency**



**Insulation Resistance vs Temperature**



**Variation of Impedance with Cap Value**  
Impedance vs. Frequency  
0805 - C0G (NP0)  
10 pF vs. 100 pF vs. 1000 pF



**Variation of Impedance with Chip Size**  
Impedance vs. Frequency  
1000 pF - C0G (NP0)



**Variation of Impedance with Ceramic Formulation**  
Impedance vs. Frequency  
1000 pF - C0G (NP0) vs X7R 0805



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## Specifications and Test Methods

| Parameter/Test                 |                       | NP0 Specification Limits                                                                                  | Measuring Conditions                                                                                                                                                                                                                   |                    |
|--------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| Operating Temperature Range    |                       | -55°C to +125°C                                                                                           | Temperature Cycle Chamber                                                                                                                                                                                                              |                    |
| Capacitance                    |                       | Within specified tolerance                                                                                | Freq.: 1.0 MHz $\pm$ 10% for cap $\leq$ 1000 pF<br>1.0 kHz $\pm$ 10% for cap > 1000 pF<br>Voltage: 1.0Vrms $\pm$ .2V                                                                                                                   |                    |
| Q                              |                       | $<30$ pF: $Q \geq 400 + 20 \times \text{Cap Value}$<br>$\geq 30$ pF: $Q \geq 1000$                        |                                                                                                                                                                                                                                        |                    |
| Insulation Resistance          |                       | 100,000M $\Omega$ or 1000M $\Omega$ - $\mu$ F, whichever is less                                          | Charge device with rated voltage for 60 $\pm$ 5 secs @ room temp/humidity                                                                                                                                                              |                    |
| 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 | $\pm 5\%$ or $\pm .5$ pF, whichever is greater                                                            |                                                                                                                                                                                                                                        |                    |
|                                | Q                     | Meets Initial Values (As Above)                                                                           |                                                                                                                                                                                                                                        |                    |
|                                | Insulation Resistance | $\geq$ Initial Value $\times$ 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 | $\leq \pm 2.5\%$ or $\pm .25$ pF, whichever is greater                                                    |                                                                                                                                                                                                                                        |                    |
|                                | Q                     | 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 | $\leq \pm 2.5\%$ or $\pm .25$ pF, whichever is greater                                                    | Step 2: Room Temp                                                                                                                                                                                                                      | $\leq$ 3 minutes   |
|                                | Q                     | 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 hours at room temperature                                                                                                                                                                     |                    |
| Load Life                      | Appearance            | No visual defects                                                                                         | Charge device with twice rated voltage 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 hours before measuring.                               |                    |
|                                | Capacitance Variation | $\leq \pm 3.0\%$ or $\pm .3$ pF, whichever is greater                                                     |                                                                                                                                                                                                                                        |                    |
|                                | Q (C=Nominal Cap)     | $\geq 30$ pF: $Q \geq 350$<br>$\geq 10$ pF, $<30$ pF: $Q \geq 275 + 5C/2$<br>$<10$ pF: $Q \geq 200 + 10C$ |                                                                                                                                                                                                                                        |                    |
|                                | Insulation Resistance | $\geq$ Initial Value $\times$ 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 for 24 $\pm$ 2 hours before measuring. |                    |
|                                | Capacitance Variation | $\leq \pm 5.0\%$ or $\pm .5$ pF, whichever is greater                                                     |                                                                                                                                                                                                                                        |                    |
|                                | Q                     | $\geq 30$ pF: $Q \geq 350$<br>$\geq 10$ pF, $<30$ pF: $Q \geq 275 + 5C/2$<br>$<10$ pF: $Q \geq 200 + 10C$ |                                                                                                                                                                                                                                        |                    |
|                                | Insulation Resistance | $\geq$ Initial Value $\times$ 0.3 (See Above)                                                             |                                                                                                                                                                                                                                        |                    |
|                                | Dielectric Strength   | Meets Initial Values (As Above)                                                                           |                                                                                                                                                                                                                                        |                    |

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## Capacitance Range



### PREFERRED SIZES ARE SHADED

| SIZE           |             | 01005                           |  | 0201                           |    | 0402                           |    | 0603                           |    |                 | 0805                           |                 |    |                 |     | 1206                           |     |                 |    |                 |     |                 |     |                 |  |                 |  |                 |  |
|----------------|-------------|---------------------------------|--|--------------------------------|----|--------------------------------|----|--------------------------------|----|-----------------|--------------------------------|-----------------|----|-----------------|-----|--------------------------------|-----|-----------------|----|-----------------|-----|-----------------|-----|-----------------|--|-----------------|--|-----------------|--|
| Soldering      |             | Reflow Only                     |  | Reflow Only                    |    | Reflow/Wave                    |    | Reflow/Wave                    |    |                 | Reflow/Wave                    |                 |    |                 |     | Reflow/Wave                    |     |                 |    |                 |     |                 |     |                 |  |                 |  |                 |  |
| Packaging      |             | All Paper                       |  | All Paper                      |    | All Paper                      |    | All Paper                      |    |                 | Paper/Embossed                 |                 |    |                 |     | Paper/Embossed                 |     |                 |    |                 |     |                 |     |                 |  |                 |  |                 |  |
| (L) Length     | mm<br>(in.) | 0.40 ± 0.02<br>(0.016 ± 0.0008) |  | 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<br>(in.) | 0.20 ± 0.02<br>(0.008 ± 0.0008) |  | 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<br>(in.) | 0.10 ± 0.04<br>(0.004 ± 0.016)  |  | 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           |             | 16                              |  | 25                             | 50 | 16                             | 25 | 50                             | 16 | 25              | 50                             | 100             | 16 | 25              | 50  | 100                            | 200 | 16              | 25 | 50              | 100 | 200             | 500 |                 |  |                 |  |                 |  |
| Cap<br>(pF)    | 0.5         |                                 |  | A                              |    | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               | J   |                 |  |                 |  |                 |  |
|                | 1.0         | B                               |  | A                              |    | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 1.2         | B                               |  | A                              |    | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 1.5         | B                               |  | A                              | A  | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 1.8         | B                               |  | A                              | A  | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 2.2         | B                               |  | A                              | A  | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 2.7         | B                               |  | A                              | A  | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 3.3         | B                               |  | A                              | A  | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 3.9         | B                               |  | A                              | A  | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 4.7         | B                               |  | A                              | A  | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 5.6         | B                               |  | A                              | A  | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 6.8         | B                               |  | A                              | A  | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 8.2         | B                               |  | A                              | A  | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 10          | B                               |  | A                              | A  | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 12          | B                               |  | A                              | A  | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 15          | B                               |  | A                              | A  | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 18          | B                               |  | A                              | A  | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 22          | B                               |  | A                              | A  | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 27          |                                 |  | A                              | A  | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 33          |                                 |  | A                              | A  | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 39          |                                 |  | A                              |    | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 47          |                                 |  | A                              |    | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 56          |                                 |  | A                              |    | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 68          |                                 |  | A                              |    | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 82          |                                 |  | A                              |    | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 100         |                                 |  | A                              |    | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 120         |                                 |  |                                |    | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 150         |                                 |  |                                |    | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 180         |                                 |  |                                |    | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | J               |     |                 |  |                 |  |                 |  |
|                | 220         |                                 |  |                                |    | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | M               |     |                 |  |                 |  |                 |  |
|                | 270         |                                 |  |                                |    | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | M   | J               | J  | J               | J   | M               |     |                 |  |                 |  |                 |  |
|                | 330         |                                 |  |                                |    | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | M   | J               | J  | J               | J   | M               |     |                 |  |                 |  |                 |  |
|                | 390         |                                 |  |                                |    | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | M   | J               | J  | J               | J   | M               |     |                 |  |                 |  |                 |  |
|                | 470         |                                 |  |                                |    | C                              | C  | C                              | G  | G               | G                              | G               | J  | J               | J   | J                              | M   | J               | J  | J               | J   | M               |     |                 |  |                 |  |                 |  |
|                | 560         |                                 |  |                                |    |                                |    |                                | G  | G               | G                              | G               | J  | J               | J   | J                              | M   | J               | J  | J               | J   | M               |     |                 |  |                 |  |                 |  |
|                | 680         |                                 |  |                                |    |                                |    |                                | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | P               |     |                 |  |                 |  |                 |  |
|                | 820         |                                 |  |                                |    |                                |    |                                | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   |                 |     |                 |  |                 |  |                 |  |
|                | 1000        |                                 |  |                                |    |                                |    |                                | G  | G               | G                              | G               | J  | J               | J   | J                              | J   | J               | J  | J               | J   | Q               |     |                 |  |                 |  |                 |  |
|                | 1200        |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 | J  | J               | J   | J                              | J   | J               | J  | J               | Q   |                 |     |                 |  |                 |  |                 |  |
|                | 1500        |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 | J  | J               | J   | J                              | J   | J               | J  | J               | Q   |                 |     |                 |  |                 |  |                 |  |
|                | 1800        |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 | J  | J               | J   | J                              | J   | J               | M  | M               |     |                 |     |                 |  |                 |  |                 |  |
|                | 2200        |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 | J  | J               | J   | N                              | J   | J               | M  | P               |     |                 |     |                 |  |                 |  |                 |  |
|                | 2700        |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 | J  | J               | J   | N                              | J   | J               | M  | P               |     |                 |     |                 |  |                 |  |                 |  |
|                | 3300        |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 | J  | J               | J   | J                              | J   | J               | M  | P               |     |                 |     |                 |  |                 |  |                 |  |
|                | 3900        |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 | J  | J               | J   | J                              | J   | J               | M  | P               |     |                 |     |                 |  |                 |  |                 |  |
|                | 4700        |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 | J  | J               | J   | J                              | J   | J               | M  | P               |     |                 |     |                 |  |                 |  |                 |  |
|                | 5600        |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 |    |                 |     |                                |     | J               | J  | M               |     |                 |     |                 |  |                 |  |                 |  |
|                | 6800        |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 |    |                 |     |                                |     | J               | M  | M               |     |                 |     |                 |  |                 |  |                 |  |
| Cap<br>(μF)    | 8200        |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 |    |                 |     |                                |     | J               | M  | M               |     |                 |     |                 |  |                 |  |                 |  |
|                | 0.010       |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 |    |                 |     |                                |     | M               | M  |                 |     |                 |     |                 |  |                 |  |                 |  |
|                | 0.012       |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 |    |                 |     |                                |     |                 |    |                 |     |                 |     |                 |  |                 |  |                 |  |
|                | 0.015       |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 |    |                 |     |                                |     |                 |    |                 |     |                 |     |                 |  |                 |  |                 |  |
|                | 0.018       |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 |    |                 |     |                                |     |                 |    |                 |     |                 |     |                 |  |                 |  |                 |  |
|                | 0.022       |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 |    |                 |     |                                |     |                 |    |                 |     |                 |     |                 |  |                 |  |                 |  |
|                | 0.027       |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 |    |                 |     |                                |     |                 |    |                 |     |                 |     |                 |  |                 |  |                 |  |
|                | 0.033       |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 |    |                 |     |                                |     |                 |    |                 |     |                 |     |                 |  |                 |  |                 |  |
|                | 0.039       |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 |    |                 |     |                                |     |                 |    |                 |     |                 |     |                 |  |                 |  |                 |  |
|                | 0.047       |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 |    |                 |     |                                |     |                 |    |                 |     |                 |     |                 |  |                 |  |                 |  |
|                | 0.068       |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 |    |                 |     |                                |     |                 |    |                 |     |                 |     |                 |  |                 |  |                 |  |
|                | 0.082       |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 |    |                 |     |                                |     |                 |    |                 |     |                 |     |                 |  |                 |  |                 |  |
| 0.1            |             |                                 |  |                                |    |                                |    |                                |    |                 |                                |                 |    |                 |     |                                |     |                 |    |                 |     |                 |     |                 |  |                 |  |                 |  |
| WVDC           |             | 25                              |  | 50                             | 16 | 25                             | 50 | 16                             | 25 | 50              | 100                            | 16              | 25 | 50              | 100 | 200                            | 16  | 25              | 50 | 100             | 200 | 500             |     |                 |  |                 |  |                 |  |
| SIZE           |             | 01005                           |  | 0201                           |    | 0402                           |    | 0603                           |    |                 | 0805                           |                 |    |                 |     | 1206                           |     |                 |    |                 |     |                 |     |                 |  |                 |  |                 |  |
| Letter         |             | A                               |  | B                              |    | C                              |    | E                              |    | G               |                                | J               |    | K               |     | M                              |     | N               |    | P               |     | Q               |     | X               |  | Y               |  | Z               |  |
| Max. Thickness |             | 0.33<br>(0.013)                 |  | 0.22<br>(0.009)                |    | 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        |    |                 |     |                                |     |                 |    |                 |     |                 |     |                 |  |                 |  |                 |  |

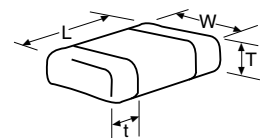


## Capacitance Range



**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             | 3.20 ± 0.20<br>(0.126 ± 0.008) |         |         |         | 4.50 ± 0.30<br>(0.177 ± 0.012) |         |         |         |         | 4.50 ± 0.30<br>(0.177 ± 0.012) |         |         | 5.70 ± 0.40<br>(0.225 ± 0.016) |    |     | 5.72 ± 0.25<br>(0.225 ± 0.010) |    |     |     |
| (W) Width    | mm             | 2.50 ± 0.20<br>(0.098 ± 0.008) |         |         |         | 3.20 ± 0.20<br>(0.126 ± 0.008) |         |         |         |         | 6.40 ± 0.40<br>(0.252 ± 0.016) |         |         | 5.00 ± 0.40<br>(0.197 ± 0.016) |    |     | 6.35 ± 0.25<br>(0.250 ± 0.010) |    |     |     |
| (t) Terminal | mm             | 0.50 ± 0.25<br>(0.020 ± 0.010) |         |         |         | 0.61 ± 0.36<br>(0.024 ± 0.014) |         |         |         |         | 0.61 ± 0.36<br>(0.024 ± 0.014) |         |         | 0.64 ± 0.39<br>(0.025 ± 0.015) |    |     | 0.64 ± 0.39<br>(0.025 ± 0.015) |    |     |     |
|              | WVDC           | 25                             | 50      | 100     | 200     | 500                            | 25      | 50      | 100     | 200     | 500                            | 50      | 100     | 200                            | 50 | 100 | 200                            | 50 | 100 | 200 |
| Cap<br>(pF)  | 0.5            |                                |         |         |         |                                |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 1.0            |                                |         |         |         |                                |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 1.2            |                                |         |         |         |                                |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 1.5            |                                |         |         |         |                                |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 1.8            |                                |         |         |         |                                |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 2.2            |                                |         |         |         |                                |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 2.7            |                                |         |         |         |                                |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 3.3            |                                |         |         |         |                                |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 3.9            |                                |         |         |         |                                |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 4.7            |                                |         |         |         |                                |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 5.6            |                                |         |         |         |                                |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 6.8            |                                |         |         |         |                                |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 8.2            |                                |         |         |         |                                |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 10             |                                |         |         |         | J                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 12             |                                |         |         |         | J                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 15             |                                |         |         |         | J                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 18             |                                |         |         |         | J                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 22             |                                |         |         |         | J                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 27             |                                |         |         |         | J                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 33             |                                |         |         |         | J                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 39             |                                |         |         |         | J                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 47             |                                |         |         |         | J                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 56             |                                |         |         |         | J                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 68             |                                |         |         |         | J                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 82             |                                |         |         |         | J                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 100            |                                |         |         |         | J                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 120            |                                |         |         |         | J                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 150            |                                |         |         |         | J                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 180            |                                |         |         |         | J                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 220            |                                |         |         |         | J                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 270            |                                |         |         |         | J                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 330            |                                |         |         |         | J                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 390            |                                |         |         |         | M                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 470            |                                |         |         |         | M                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 560            | J                              | J       | J       | J       | M                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 680            | J                              | J       | J       | J       | M                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 820            | J                              | J       | J       | J       | M                              |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |
|              | 1000           | J                              | J       | J       | J       | M                              | K       | K       | K       | K       | M                              | M       | M       | M                              |    |     |                                | M  | M   | P   |
|              | 1200           | J                              | J       | J       | M       | M                              | K       | K       | K       | K       | M                              | M       | M       | M                              |    |     |                                | M  | M   | P   |
|              | 1500           | J                              | J       | J       | M       | M                              | K       | K       | K       | K       | M                              | M       | M       | M                              |    |     |                                | M  | M   | P   |
|              | 1800           | J                              | J       | J       | M       |                                | K       | K       | K       | K       | M                              | M       | M       | M                              |    |     |                                | M  | M   | P   |
|              | 2200           | J                              | J       | J       | Q       |                                | K       | K       | K       | K       | P                              | M       | M       | M                              |    |     |                                | M  | M   | P   |
|              | 2700           | J                              | J       | J       | Q       |                                | K       | K       | K       | P       | Q                              | M       | M       | M                              |    |     |                                | M  | M   | P   |
|              | 3300           | J                              | J       | J       |         |                                | K       | K       | K       | P       | Q                              | M       | M       | M                              |    |     | X                              | M  | M   | P   |
|              | 3900           | J                              | J       | M       |         |                                | K       | K       | K       | P       | Q                              | M       | M       | M                              |    |     | X                              | M  | M   | P   |
|              | 4700           | J                              | J       |         |         |                                | K       | K       | K       | P       | Q                              | M       | M       | M                              | X  | X   | X                              | M  | M   | P   |
|              | 5600           | J                              | J       |         |         |                                | K       | K       | M       | P       | X                              | M       | M       | M                              | X  | X   | X                              | M  | M   | P   |
|              | 6800           | J                              | J       |         |         |                                | K       | K       | M       | X       |                                | M       | M       | M                              | X  | X   | X                              | M  | M   | P   |
|              | 8200           | J                              | J       |         |         |                                | K       | M       | M       |         |                                | M       | M       | M                              | X  | X   | X                              | M  | M   | P   |
|              | Cap<br>(µF)    | 0.010                          | J       | J       |         |                                |         | K       | M       | M       |                                |         | M       | M                              |    | X   | X                              | X  | M   | M   |
| 0.012        |                | J                              | J       |         |         |                                | K       | M       |         |         |                                | M       | M       |                                | X  | X   | X                              | M  | M   | P   |
| 0.015        |                |                                |         |         |         |                                | M       | M       |         |         |                                | M       | M       |                                | X  | X   | X                              | M  | M   | Y   |
| 0.018        |                |                                |         |         |         |                                | M       | M       |         |         |                                | P       | M       |                                | X  | X   | X                              | M  | M   | Y   |
| 0.022        |                |                                |         |         |         |                                | M       | M       |         |         |                                | P       |         |                                | X  | X   |                                | M  | Y   | Y   |
| 0.027        |                |                                |         |         |         |                                | M       | M       |         |         |                                | P       |         |                                | X  | X   |                                | P  | Y   | Y   |
| 0.033        |                |                                |         |         |         |                                | M       | M       |         |         |                                | P       |         |                                | X  | X   |                                | P  |     |     |
| 0.039        |                |                                |         |         |         |                                | M       | M       |         |         |                                | P       |         |                                | Y  |     |                                | P  |     |     |
| 0.047        |                |                                |         |         |         |                                | M       | M       |         |         |                                | P       |         |                                | Y  |     |                                | P  |     |     |
|              |                | 0.068                          |         |         |         |                                |         | M       | M       |         |                                |         |         |                                |    |     |                                |    | P   | Q   |
|              | 0.082          |                                |         |         |         |                                | M       | M       |         |         |                                |         |         |                                |    |     |                                | Q  |     |     |
|              | 0.1            |                                |         |         |         |                                |         |         |         |         |                                |         |         |                                |    |     |                                | Q  |     |     |
|              | WVDC           | 25                             | 50      | 100     | 200     | 500                            | 25      | 50      | 100     | 200     | 500                            | 50      | 100     | 200                            | 50 | 100 | 200                            | 50 | 100 | 200 |
| SIZE         | 1210           |                                |         |         |         | 1812                           |         |         |         |         | 1825                           |         |         | 2220                           |    |     | 2225                           |    |     |     |
| Letter       | A              | C                              | E       | G       | J       | K                              | M       | N       | P       | Q       | X                              | Y       | Z       |                                |    |     |                                |    |     |     |
| Max.         | 0.33           | 0.56                           | 0.71    | 0.90    | 0.94    | 1.02                           | 1.27    | 1.40    | 1.52    | 1.78    | 2.29                           | 2.54    | 2.79    |                                |    |     |                                |    |     |     |
| Thickness    | (0.013)        | (0.022)                        | (0.028) | (0.035) | (0.037) | (0.040)                        | (0.050) | (0.055) | (0.060) | (0.070) | (0.090)                        | (0.100) | (0.110) |                                |    |     |                                |    |     |     |
|              | PAPER          |                                |         |         |         | EMBOSSED                       |         |         |         |         |                                |         |         |                                |    |     |                                |    |     |     |





Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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