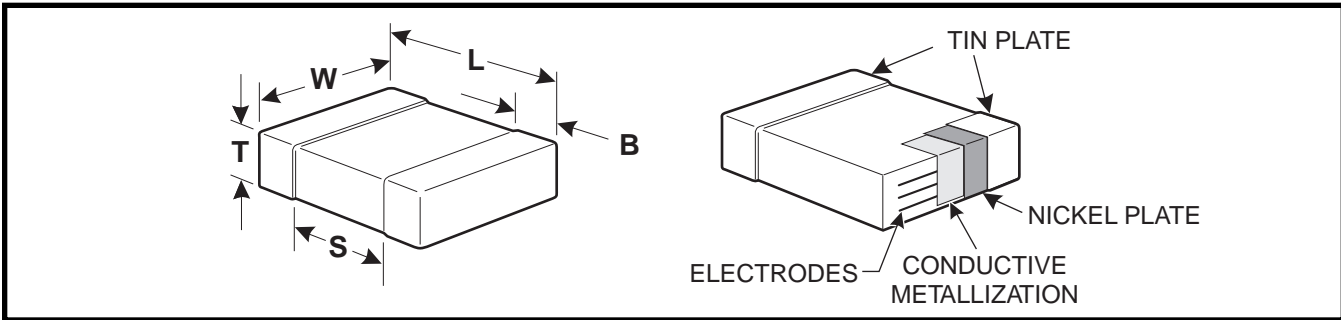


## FEATURES

- C0G (NP0), X7R, Z5U and Y5V Dielectrics
- 10, 16, 25, 50, 100 and 200 Volts
- Standard End Metallization: Tin-plate over nickel barrier
- Available Capacitance Tolerances:  $\pm 0.10$  pF;  $\pm 0.25$  pF;  $\pm 0.5$  pF;  $\pm 1\%$ ;  $\pm 2\%$ ;  $\pm 5\%$ ;  $\pm 10\%$ ;  $\pm 20\%$ ; and  $+80\%-20\%$
- Tape and reel packaging per EIA481-1. (See page 51 for specific tape and reel information.) Bulk Cassette packaging (0402, 0603, 0805 only) per IEC60286-6 and EIAJ 7201.

## CAPACITOR OUTLINE DRAWINGS



## DIMENSIONS—MILLIMETERS AND (INCHES)

| EIA SIZE CODE | METRIC SIZE CODE (Ref only) | L # LENGTH                   | W # WIDTH                    | T (EIA) # THICKNESS MAX. | B BANDWIDTH                   | S MIN. SEPARATION | MOUNTING TECHNIQUE           |
|---------------|-----------------------------|------------------------------|------------------------------|--------------------------|-------------------------------|-------------------|------------------------------|
| 0402*         | 1005                        | 1.0 (.04) $\pm$ .05 (.002)   | 0.5 (.02) $\pm$ .05 (.002)   | 0.55 (.022)              | 0.20 (0.008)-0.40 (0.016)     | 0.3 (.012)        | Solder Reflow                |
| 0603*         | 1608                        | 1.6 (.063) $\pm$ 0.15 (.006) | 0.8 (.032) $\pm$ 0.15 (.006) | 0.9 (.035)               | 0.35 (.014) $\pm$ 0.15 (.006) | 0.7 (.028)        | Solder Wave or Solder Reflow |
| 0805*         | 2012                        | 2.0 (.079) $\pm$ 0.2 (.008)  | 1.25 (.049) $\pm$ 0.2 (.008) | 1.3 (.051)               | 0.5 (.02) $\pm$ .25 (.010)    | 0.75 (.030)       |                              |
| 1206*         | 3216                        | 3.2 (.126) $\pm$ 0.2 (.008)  | 1.6 (.063) $\pm$ 0.2 (.008)  | 1.5 (.059)               | 0.5 (.02) $\pm$ .25 (.010)    | N/A               |                              |
| 1210*         | 3225                        | 3.2 (.126) $\pm$ 0.2 (.008)  | 2.5 (.098) $\pm$ 0.2 (.008)  | 1.7 (.067)               | 0.5 (.02) $\pm$ .25 (.010)    | N/A               | Solder Reflow                |
| 1812          | 4532                        | 4.5 (.177) $\pm$ 0.3 (.012)  | 3.2 (.126) $\pm$ 0.3 (.012)  | 1.7 (.067)               | 0.6 (.024) $\pm$ .35 (.014)   | N/A               |                              |
| 1825*         | 4564                        | 4.5 (.177) $\pm$ 0.3 (.012)  | 6.4 (.252) $\pm$ 0.4 (.016)  | 1.7 (.067)               | 0.6 (.024) $\pm$ .35 (.014)   | N/A               |                              |
| 2220          | 5650                        | 5.6 (.220) $\pm$ 0.4 (.016)  | 5.0 (.197) $\pm$ 0.4 (.016)  | 1.8 (.071)               | 0.6 (.024) $\pm$ .35 (.014)   | N/A               |                              |
| 2225          | 5664                        | 5.6 (.220) $\pm$ 0.4 (.016)  | 6.3 (.248) $\pm$ 0.4 (.016)  | 2.0 (.079)               | 0.6 (.024) $\pm$ .35 (.014)   | N/A               |                              |

\* Note: Indicates EIA Preferred Case Sizes

# Note: Different tolerances apply for 0402, 0603, and 0805 packaged in bulk cassette.

## CAPACITOR ORDERING INFORMATION (Standard Chips - For Military see page 45)

**CERAMIC SIZE CODE** ——— **C** **0805** **C** **103** **K** **5** **R** **A** **C\*** ——— **END METALLIZATION**  
**SPECIFICATION** ——— C - Standard (Tin-plated nickel barrier)  
**CAPACITANCE CODE** ——— Expressed in Picofarads (pF)  
First two digits represent significant figures.  
Third digit specifies number of zeros. (Use 9 for 1.0 thru 9.9pF. Use 8 for 0.5 through 0.99pF)  
(Example: 2.2pF = 229 or 0.50 pF = 508)  
**CAPACITANCE TOLERANCE** ———  
B -  $\pm 0.10$ pF J -  $\pm 5\%$   
C -  $\pm 0.25$ pF K -  $\pm 10\%$   
D -  $\pm 0.5$ pF M -  $\pm 20\%$   
F -  $\pm 1\%$  P - (GMV)  
G -  $\pm 2\%$  Z -  $+80\%, -20\%$

**TEMPERATURE CHARACTERISTIC** ——— Designated by Capacitance Change Over Temperature Range  
G - C0G (NP0) ( $\pm 30$  PPM/ $^{\circ}$ C)  
R - X7R ( $\pm 15\%$ )  
U - Z5U ( $+22\%, -56\%$ )  
V - Y5V ( $+22\%, -82\%$ )

**VOLTAGE**  
1 - 100V 3 - 25V  
2 - 200V 4 - 16V  
5 - 50V 8 - 10V

\* Part Number Example: C0805C103K5RAC (14 digits - no spaces)

## Z5U CAPACITANCE RANGE (KEMET's Z5U also meets Y5V Characteristics)

| CAP.<br>PF  | CAP<br>TOL | C0805* |      | C1206* |      | C1210* |      | C1812* |      | C1825* |      | C2225 |      |
|-------------|------------|--------|------|--------|------|--------|------|--------|------|--------|------|-------|------|
|             |            | 50V    | 100V | 50V    | 100V | 50V    | 100V | 50V    | 100V | 50V    | 100V | 50V   | 100V |
| 6800.0      | M,Z        | 682    | 682  |        |      |        |      |        |      |        |      |       |      |
| 8200.0      | M,Z        | 822    | 822  |        |      |        |      |        |      |        |      |       |      |
| 10,000.0    | M,Z        | 103    | 103  | 103    | 103  |        |      |        |      |        |      |       |      |
| 12,000.0    | M,Z        | 123    |      | 123    | 123  |        |      |        |      |        |      |       |      |
| 15,000.0    | M,Z        | 153    |      | 153    | 153  |        |      |        |      |        |      |       |      |
| 18,000.0    | M,Z        | 183    |      | 183    | 183  |        |      |        |      |        |      |       |      |
| 22,000.0    | M,Z        | 223    |      | 223    | 223  |        |      |        |      |        |      |       |      |
| 27,000.0    | M,Z        | 273    |      | 273    | 273  |        |      |        |      |        |      |       |      |
| 33,000.0    | M,Z        | 333    |      | 333    | 333  |        |      |        |      |        |      |       |      |
| 39,000.0    | M,Z        | 393    |      | 393    | 393  |        |      |        |      |        |      |       |      |
| 47,000.0    | M,Z        | 473    |      | 473    |      | 473    | 473  |        |      |        |      |       |      |
| 56,000.0    | M,Z        | 563    |      | 563    |      | 563    | 563  |        |      |        |      |       |      |
| 68,000.0    | M,Z        | 683    |      | 683    |      | 683    | 683  |        |      |        |      |       |      |
| 82,000.0    | M,Z        | 823    |      | 823    |      | 823    | 823  | 823    | 823  |        |      |       |      |
| 100,000.0   | M,Z        | 104    |      | 104    |      | 104    | 104  | 104    | 104  |        |      |       |      |
| 120,000.0   | M,Z        |        |      | 124    |      | 124    | 124  | 124    | 124  |        |      |       |      |
| 150,000.0   | M,Z        |        |      | 154    |      | 154    | 154  | 154    |      |        |      |       |      |
| 180,000.0   | M,Z        |        |      | 184    |      | 184    |      |        | 184  | 184    |      |       |      |
| 220,000.0   | M,Z        |        |      | 224    |      | 224    |      |        | 224  | 224    |      |       |      |
| 270,000.0   | M,Z        |        |      |        |      | 274    |      |        | 274  | 274    |      |       |      |
| 330,000.0   | M,Z        |        |      |        |      | 334    |      |        | 334  | 334    | 334  | 334   |      |
| 390,000.0   | M,Z        |        |      |        |      |        |      |        | 394  | 394    | 394  | 394   |      |
| 470,000.0   | M,Z        |        |      |        |      |        |      |        | 474  |        | 474  | 474   |      |
| 560,000.0   | M,Z        |        |      |        |      |        |      |        | 564  |        |      | 564   |      |
| 680,000.0   | M,Z        |        |      |        |      |        |      |        | 684  |        |      | 684   |      |
| 820,000.0   | M,Z        |        |      |        |      |        |      |        | 824  |        |      | 824   |      |
| 1,000,000.0 | M,Z        |        |      |        |      |        |      | 105    |      | 105    |      | 105   |      |
| 1,200,000.0 | M,Z        |        |      |        |      |        |      |        |      | 125    |      | 125   |      |
| 1,500,000.0 | M,Z        |        |      |        |      |        |      |        |      | 155    |      | 155   |      |
| 1,800,000.0 | M,Z        |        |      |        |      |        |      |        |      | 185    |      | 185   |      |
| 2,200,000.0 | M,Z        |        |      |        |      |        |      |        |      | 225    |      | 225   |      |

NOTE: For non-standard capacitance values or voltages, contact your local KEMET sales representative.  
50 Volt Ceramic Chips can be used for 63 volt applications.

\* EIA preferred chip sizes