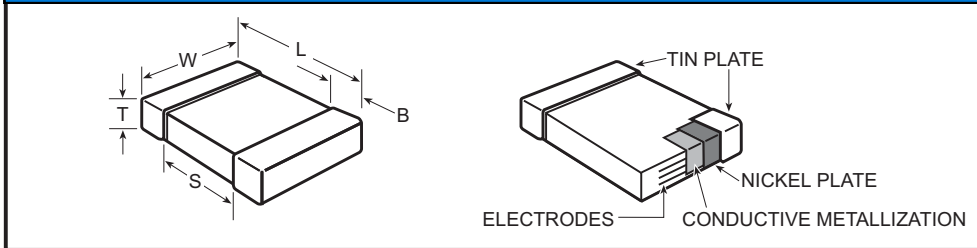


Surface Mount Ceramic Chip Capacitors – Open Mode - X7R - Capacitance Extensions

Outline Drawing



Dimensions – Millimeters (Inches)

EIA Size Code	Metric Size Code	L Length	W Width	B Bandwidth	S Separation
0805	2012	2.0 (.079) ± 0.02 (.008)	1.25 (.049) ± 0.2 (.008)	0.5 (.020) ± 0.25 (.010)	0.75 (.030)
1206	3216	3.2 (1.26) ± 0.2 (.008)	1.6 (.063) ± 0.2 (.008)	0.5 (.020) ± 0.25 (.010)	-
1210	3225	3.2 (.126) ± 0.2 (.008)	2.5 (.098) ± 0.2 (.008)	0.5 (.020) ± 0.25 (.010)	-

See Capacitance Value Table below for thickness dimension.

Capacitor Ordering Information

**C** **0805** **F** **684** **K** **4** **R** **A** **C**

**Style** \_\_\_\_\_  
C - Ceramic

**Size Code** \_\_\_\_\_  
See dimension table

**Specification** \_\_\_\_\_  
F - Open Mode

**Capacitance Code, pF** \_\_\_\_\_  
First two digits represent significant figures.  
Third digit specifies number of zeros. 100 pF = 101.  
(Use "9" for 1.0 through 9.9 pF)  
(Use "8" for 0.1 through .99 pF)

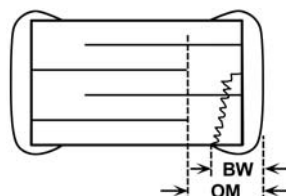
**Capacitance Tolerance** \_\_\_\_\_  
K = ± 10%    M = ±20%

**End Metallization**  
C = Standard (Tin-plate nickel barrier)

**Failure Rate Level**  
A = Not Applicable

**Temperature Characteristic**  
Designated by Capacitance Change Over Temperature Range  
R = X7R (±15%) (-55°C +125°C)

**Voltage**  
4 = 16V    3 = 25V    5 = 50V



The open-mode dimension (OM) exceeds the termination bandwidth dimensions: OM > BW

Capacitance Value						
Capacitance Value ( $\mu\text{F}$ )	KEMET Part Number	Voltage	Capacitance Tolerance	Thickness	Qty 7" Reel	Qty 13" Reel
0.22	C0805F224_3RAC	25	K, M	0.90 (.035) $\pm$ 0.10 (.004)	4,000	10,000
0.22	C0805F224_5RAC	50	K, M	1.25 (.049) $\pm$ 0.15 (.006)	2,500	10,000
0.47	C0805F474_4RAC	16	K, M	1.00 (.039) $\pm$ 0.10 (.004)	2,500	10,000
0.47	C0805F474_3RAC	25	K, M	1.25 (.049) $\pm$ 0.15 (.006)	2,500	10,000
0.68	C0805F684_4RAC	16	K, M	1.25 (.049) $\pm$ 0.15 (.006)	2,500	10,000
0.47	C1206F474_5RAC	50	K, M	0.90 (.035) $\pm$ 0.10 (.004)	4,000	10,000
1	C1206F105_3RAC	25	K, M	0.90 (.035) $\pm$ 0.10 (.004)	4,000	10,000
1	C1206F105_5RAC	50	K, M	1.60 (.063) $\pm$ 0.20 (.008)	2,000	8,000
2.2	C1206F225_4RAC	16	K, M	0.90 (.035) $\pm$ 0.10 (.004)	4,000	10,000
2.2	C1206F225_3RAC	25	K, M	1.60 (.063) $\pm$ 0.20 (.008)	2,000	8,000
4.7	C1206F475_4RAC	16	K, M	1.60 (.063) $\pm$ 0.20 (.008)	2,000	8,000
2.2	C1210F225_5RAC	50	K, M	1.70 (.067) $\pm$ 0.20 (.008)	2,000	8,000
4.7	C1210F475_4RAC	16	K, M	1.25 (.049) $\pm$ 0.15 (.006)	2,500	10,000
4.7	C1210F475_3RAC	25	K, M	1.70 (.067) $\pm$ 0.20 (.008)	2,000	8,000

#### Electrical Parameters

As detailed in the KEMET Surface Mount Catalog F3102 for X7R, with the following specific requirements based on room temperature (25°C) parameters:

- Operating Range: -55°C to +125°C, with no-bias capacitance shift limited to the  $\pm$  15% over that range.
- Insulating Resistance (IR) measured after 2 minutes at rated voltage @25°C: Limit is 500 megohm-microfarads or 10,000M $\Omega$ , whichever of the two is smaller.
- Capacitance and Dissipation Factor (DF) are measured under the following conditions:  
1kHz and 1 Vrms if capacitance  $\leq$  10 $\mu\text{F}$   
120Hz and 0.5 Vrms if capacitance > 10 $\mu\text{F}$
- DF limits:  
50 -200 Volts — 2.5%  
16 -25 Volts — 3.5%  
6.3 / 10 Volts — 5.0%

#### Soldering Process

All parts incorporate the standard KEMET barrier layer of pure nickel, with an overplate of pure tin to provide excellent solderability as well as resistance to leaching. The recommended mounting techniques are as follows:

- 0402 / 1210 case sizes — Solder Reflow
- 0603 / 0805 / 1206 case sizes — Solder Wave / Solder Reflow

#### Marking

These chips will be supplied unmarked. If required, they can be laser-marked as an extra option. Details on the marking format are included in KEMET Surface Mount catalog F3102.

***In general, the information provided in the KEMET Surface Mount catalog F3102 applies to these capacitors. The information in this bulletin supplements that in the catalog***



F-9073B 9/06