

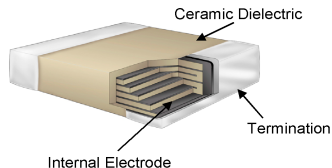
KEMET Surface Mount Ceramic

Revision I, 22 Sept 2010

Note: Information subject to change without notice. Monitor website regularly for updates. KEMET is not liable for any damages, direct or indirect, consequential or otherwise, that the reader might incur as a result of ignoring this warning, or that any third party might suffer as a result of the reader's ignoring this warning.

Characteristics and Typical Construction

- Standard EIA Chip Sizes
- COG, X7R, X5R, Y5V, Z5U, X8L & Ultra Stable X8R Dielectrics
- Termination code 'C' products support manufacture of RoHS-compliant EEE
- 4 - 3000 Volts
- Tape & Reel Packaging
- Bulk Cassette packaging available
- Matte Tin finish terminations standard
- SnPb terminations available beginning August, 2005



RoHS Restricted Substance Content

Key for Determining Adherence to China RoHS and EU 2002/95/EC and 2005/618/EC Content Criteria¹

○ = ≤ MCV, ✕ = > MCV, ✕ = > MCV, but EU RoHS Compliant with Exemption(s)

KEMET Product	Series	Substance and MCV ¹ Termination Code	Restricted Substance					Compliant Version					
			Cd < 0.01%	Cr ⁶⁺ < 0.1%	Pb < 0.1%	Hg < 0.1%	PBB < 0.1%	PBDE < 0.1%	Size and Dielectric	Available since	Standard since	China RoHS Symbol ³	
Ceramic Chip / Standard Ceramic Chip / High Voltage Tip & Ring/ KPS	CxxxxC	C	○	○	✕ COG < 1.0nF ² ○ COG ≥ 1.0nF, X7R X5R, Y5V, Z5U	○	○	○	○	0402 COG 0402 X7R	June-04	June-04	Ⓢ
Ceramic Open Mode Capacitors	CxxxxF												
High Temperature (200°C) COG	CxxxxH												
KEMET Commercial-Off-The-Shelf (COTS)	CxxxxT												
Low Profile Ceramic Chip / Standard	CxxxxL												
Floating Electrode	CxxxxS												
Floating Electrode w/ Flexible Termination	CxxxxY												
Flexible Termination	CxxxxX	L (not available for 0201 products)	○	○	✕	○	○	○	Not Available	Not Available	Not Available	Ⓢ	
Ceramic Chip / Standard Ceramic Chip / High Voltage Tip & Ring	CxxxxC												
Ceramic Open Mode Capacitors	CxxxxF												
High Temperature (200°C) COG	CxxxxH												
KEMET Commercial-Off-The-Shelf (KCOTS)	CxxxxT												
Low Profile Ceramic Chip / Standard	CxxxxL												
Floating Electrode	CxxxxS												
Floating Electrode w/ Flexible Termination	CxxxxY												
Flexible Termination	CxxxxX												

¹MCV = Maximum Concentration Values per 2005/618/EC amending RoHS Directive 2002/95/EC and China RoHS criteria.

²All KEMET X7R and COG surface mount offerings already meet RoHS requirements. A limited group of these components contain a small portion of lead (Pb) that is exempt per Annex 1 to 2002/95/EC. These components are in transition to a completely lead-free material set.

³China RoHS Symbol based on current manufacturing. Refer to notes in Pb column for transition dates.

Soldering Capability Characteristics

	Matte Tin Termination	SnPb Termination
Termination Material	Silver or Copper	Silver or Copper
Termination Plating (Barrier)	100% Matte Tin (Nickel)	90Sn10 Pb (Nickel)
Peak Temperature Capability	260°C	260°C
Soldering Process Compatibility	Backward & Forward Compatible	Backward & Forward Compatible
MSL Rating per J-STD-020C	Not Classified ⁴	Not Classified ⁴
Tin Whisker Test Results <i>based on JESD22-A121 and JESD201⁵</i>	Class 2	Class 2

⁴MSL not classified for ceramic capacitors. J-STD-020 is applicable to non-hermetic surface mount devices, and is intended for plastic package components. KEMET ceramic chips are not encapsulated in a plastic package, so they are not susceptible to these effects. If an MSL were required, the rating this product would be considered MSL 1 or better.

⁵Per EIA/ECA component bulletin CB19, tin whiskering is not considered a reliability risk within the capacitor industry for non-Military / HI-Rel applications.

Ordering

C	1206	C	104	K	5	G	A	C
Ceramic	Case Size (L"x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	End Metallization ^A
		C = Standard F = Open Mode H = High Temp (200°C) S = Floating Electrode T = COTS X = Flexible Termination Y = Floating Electrode w/ Flexible Termination	2 Sig. Digits + Number of Zeros. Use 9 for 1.0 - 9.9pF Use 8 for 0.5 - .99pF ex: 2.2pF = 229 ex: 0.5pF = 508			G = COG R = X7R P = X5R H = Ultra Stable X8R N = X8L U = Z5U V = Y5V	A = N/A 1 = KPS Single Chip Stack 2 = KPS Double Chip Stack A = Group A Testing per MIL-PRF-55681 PDA 8% B = Group A Testing per MIL-PRF-55681 PDA 8%, DPA per EIA-469 C = Group A Testing per MIL-PRF-55681 PDA 8%, DPA per EIA-469, Humidity per MIL-STD-202, Method 103, Condition A	C = 100% Matte Sn L = SnPb (5% min)

Identification

Reel level **KEMET EZ ID** label indicates product content relative to substance restrictions of the EU RoHS Directive, 2002/95/EC, 2005/618/EC and China RoHS..
RoHS-PRC = Meets criteria without exemption
RoHS-EU = Meets criteria with exemption
RoHS-NO = Does not meet criteria

