KEMET Surface Mount Ceramic

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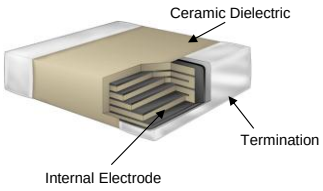
Characteristics and Typical Construction

- Standard EIA Chip Sizes
- C0G, 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 2011/65/EU Content Criteria[1]

O = ≤ MCV, **X** = > MCV, **X** = > MCV, but EU RoHS Compliant with Exemption(s)

KEMET Product	Series	Substance and MCV[1] Termination Code	Substance and MCV[1] Voltage	Restricted Substance Cd < 0.01%	Cr6+ < 0.1%	Pb < 0.1%	Hg < 0.1%	PBB < 0.1%	PBDE < 0.1%	China RoHS Symbol[3]
Ceramic Chip / Standard	CxxxxC	C	<250 V DC	O	O	O	O	O	O	
Ceramic Chip / High Voltage[2]	CxxxxC	C	≥ 250 V DC	O	O	X	O	O	O	
Ceramic Open Mode Capacitors	CxxxxF	C	All	O	O	O	O	O	O	
High Temperature (200ºC) C0G	CxxxxH	C	All	O	O	O	O	O	O	
KEMET Commercial-Off-The-Shelf (COTS)	CxxxxT	C	All	O	O	O	O	O	O	
Low Profile Ceramic Chip / Standard	CxxxxL	C	All	O	O	O	O	O	O	
Floating Electrode	CxxxxS	C	All	O	O	O	O	O	O	
Floating Electrode w/ Flexible Termination	CxxxxY	C	All	O	O	O	O	O	O	
Flexible Termination	CxxxxX	C	All	O	O	O	O	O	O	
Ceramic Chip / Standard Ceramic Chip / High Voltage	CxxxxC	L (not available for 0201 products)	All	O	O	X	O	O	O	
Ceramic Open Mode Capacitors	CxxxxF	L (not available for 0201 products)	All	O	O	X	O	O	O	
High Temperature (200ºC) C0G	CxxxxH	L (not available for 0201 products)	All	O	O	X	O	O	O	
KEMET Commercial-Off-The-Shelf (KCOTS)	CxxxxT	L (not available for 0201 products)	All	O	O	X	O	O	O	
Low Profile Ceramic Chip / Standard	CxxxxL	L (not available for 0201 products)	All	O	O	X	O	O	O	
Floating Electrode	CxxxxS	L (not available for 0201 products)	All	O	O	X	O	O	O	
Floating Electrode w/ Flexible Termination	CxxxxY	L (not available for 0201 products)	All	O	O	X	O	O	O	
Flexible Termination	CxxxxX	L (not available for 0201 products)	All	O	O	X	O	O	O	

[1] MCV = Maximum Concentration Values per 2011/65/EU and China RoHS criteria.

[2] A limited group of these components contain a small portion of lead (Pb) that is exempt per Annex III, 7c-II of 2011/65/EU. These components are in transition to a completely lead-free material set.

[3] China RoHS Symbol based on current manufacturing.

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 *based on JESD22-A121 and JESD201*[5]	Class 2	Class 2

[4] MSL 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.

[5] Per 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^
		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 = C0G 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)

Reel level **KEMET EZ ID** label indicates product content relative to substance restrictions of the EU RoHS Directive, 2011/65/EU and China RoHS.
RoHS-PRC = Meets criteria without exemption
RoHS-EU = Meets criteria with exemption
RoHS-NO = Does not meet criteria