



MULTILAYER CERAMIC CHIP CAPACITORS



CGA Series Open Mode Capacitors

Type: CGA4 [EIA CC0805]

Issue date: January 2013

**TDK MLCC
Global Catalog**

Version A13

REMINDERS

Please read before using this product

SAFETY REMINDERS

REMINDERS

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(Example)

Catalog Issued date	TDK Part Number (In Catalog)	TDK Item Description (On Delivery Label)
Prior to January 2013	C1608C0G1E103J	C1608C0G1E103JT000N
January 2013 and Later	C1608C0G1E103J080AA	C1608C0G1E103JT000N



CGA Series

Open Mode Capacitor

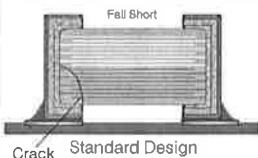
Type: CGA4 [EIA CC0805]



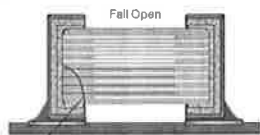
Features



- Increase resistance to mechanical bending, temperature cycle, vibration, and electrical stresses.
- When a chip capacitor is cracked by mechanical stress such as board bending, open mode construction helps user reduce the risk of short circuits.
- The Open Mode design defines that the L-Gap length shall be wider than the terminal band width
- AEC Q-200 Automotive qualified.



Crack Standard Design



Crack Open Mode Design

- The Open Mode concept does not guaranteed MLCC will always fail open. This design is intended to reduce the risk of the MLCC failing short. All MLCC caution guidelines apply.

Applications



- Automotive and other high stress applications
- Battery line circuits with high board flex stress
- DC-DC Converter

Shape & Dimensions



L	Body Length
W	Body Width
T	Body Height
B	Terminal Width
G	Terminal Spacing



Part Number Construction

CGA • 4 • J • 2 • X7R • 1H • 104 • K • 125 • A • M

Series Name

Dimensions L x W (mm)

Case Code	Length	Width	Terminal
4	2.00 ± 0.20	1.25 ± 0.20	0.20 min.

Thickness T Code (mm)

Thickness Code	Thickness
F	0.85 mm
J	1.25 mm

Voltage Condition for Life Test

Code	Condition
2	2 × R.V.

Temperature Characteristics

Temperature Characteristics	Capacitance Change	Temperature Range
X7R	± 15%	-55 to +125°C
X8R	± 15%	-55 to +150°C

Rated Voltage (DC)

Voltage Code	Voltage (DC)
1H	50V

Nominal Capacitance (pF)

The capacitance is expressed in three digit codes and in units of pico Farads (pF). The first and second digits identify the first and second significant figures of the capacitance. The third digit identifies the multiplier. R designates a decimal point.

Ex. 0R2 = 0.2pF; 103 = 10,000pF; 105 = 1,000,000pF = 1,000nF = 1μF

Capacitance Tolerance

Tolerance Code	Tolerance
K	± 10%

Nominal Thickness

Thickness Code	Thickness
085	0.85 mm
125	1.25 mm

Packaging Style

Packaging Code	Style
A	178mm Reel / 4mm Pitch

Special Reserved Code

Code	Description
M	Open Mode Design



Capacitance Range Chart

CGA4(2012) [EIA CC0805]

Capacitance Range Chart

Temperature Characteristics: X7R ($\pm 15\%$), X8R ($\pm 15\%$)
Rated Voltage: 50V (1H)

Capacitance (pF)	Cap Code	Tolerance	X7R	X8R
			1H (50V)	1H (50V)
22,000	223	K: $\pm 10\%$		
33,000	333			
47,000	473			
68,000	683			
100,000	104			

Standard Thickness

0.85 mm

1.25 mm



Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125°C, $\pm 15\%$)

Capacitance	Case Size	Thickness (mm)	Capacitance Tolerance	TDK Part Number
				Rated Voltage Edc: 50V
100 nF	2012	1.25 +0.25/-0.20	$\pm 10\%$	CGA4J2X7R1H104K125AM

Class 2 (Temperature Stable)

Temperature Characteristics: X8R (-55 to +150°C, $\pm 15\%$)

Capacitance	Case Size	Thickness (mm)	Capacitance Tolerance	TDK Part Number
				Rated Voltage Edc: 50V
22 nF	2012	0.85 ± 0.15	$\pm 10\%$	CGA4F2X8R1H223K085AM
33 nF	2012	0.85 ± 0.15	$\pm 10\%$	CGA4F2X8R1H333K085AM
47 nF	2012	1.25 ± 0.20	$\pm 10\%$	CGA4J2X8R1H473K125AM
68 nF	2012	1.25 ± 0.20	$\pm 10\%$	CGA4J2X8R1H683K125AM