



## MULTILAYER CERAMIC CHIP CAPACITORS

### **CGA3EA Series Automotive Grade ESD Protection**

**Case size: 1608 [EIA CC0603]**

**Issue date:  
Dec 2014**



## REMINDERS

Please read before using this product

### SAFETY REMINDERS



### REMINDERS

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Notice: Effective January 2013, TDK will use a new catalog number which adds product thickness and packaging specification detail. This new catalog number should be referenced on all catalog orders going forward, and is not applicable for OEM part number orders. Please be aware the last five digits of the catalog number will differ from the item description (internal control number) on the product label. Contact your local TDK Sales representative for more information.

(Example)

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



## CGA3EA Series

### ESD Protection

Case size: 1608 [EIA CC0603]



#### Features



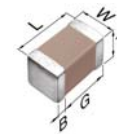
- The amount of static electricity that is charged and generated from the human body is generally thousands of volts or more. This series consists of in-vehicle products that protect electronic components from static electricity.
- The series has passed the most rigorous level (level 4-8000V) of ESD tests for contact discharge described under the IEC61000-4-2 international standard.
- Available in both COG (125°C max) and NP0 (150°C max) temperature characteristics, and can be used in applications that require high reliability, even in cars.
- AEC-Q200 compliant.

#### Applications



- Input-output sections of various in-vehicle applications such as ECUs (run, turn and stop), keyless entry systems, and car navigation systems.

#### Shape & Dimensions



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



#### Catalog Number Construction

**CGA • 3 • E • A • NP0 • 2A • 103 • J • 080 • A • C**

#### Series Name

#### Dimensions L x W (mm)

Code	Length	Width	Terminal
3	1.60 ± 0.10	0.80 ± 0.10	0.20 min.

#### Thickness T Code (mm)

Code	Thickness
E	0.80 mm

#### Function identification code

Code	Description
A	ESD Protection

#### Temperature Characteristics

Temperature Characteristics	Temperature Coefficient or Capacitance Change	Temperature Range
COG	0 ± 30 ppm/°C	-55 to +125°C
NP0	0 ± 30 ppm/°C	-55 to +150°C

#### Rated Voltage (DC)

Code	Voltage (DC)
2A	100V

#### 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.

Ex. 472 = 4,700pH = 4.7nF ; 103 = 10,000pF = 10nF

#### Capacitance Tolerance

Code	Tolerance
J	± 5%

#### Nominal Thickness

Code	Thickness
080	0.80 mm

#### Packaging Style

Code	Style
A	178 mm Reel, 4 mm Pitch

#### Special Reserved Code

Code	Description
A, C	TDK Internal Code



## Capacitance Range Chart

## EIA CC0603 [1608]

### Capacitance Range Chart

Temperature Characteristics: COG (0 ± 30ppm/°C)、NP0 (0 ± 30ppm/°C)  
 Rated Voltage: 100V(2A)

Capacitance (pF)	Code	Tolerance	COG	NP0	ESD Resistance (V)
			2A (100V)	2A (100V)	
1,000	102	J : ± 5%			8,000
1,500	152				10,000
2,200	222				12,000
3,300	332				16,000
4,700	472				16,000
6,800	682				22,000
10,000	103				30,000

Standard Thickness  
 0.80 mm



## Capacitance Range Table

### Class 1 (Temperature Compensating)

Temperature Characteristics: COG (-55 to +125°C, 0±30 ppm/°C)

Capacitance	Size	Thickness (mm)	Capacitance Tolerance	ESD Resistance (V)	Catalog Number
					Rated Voltage Edc: 100V
1nF	1608	0.80 ± 0.10	±5%	8,000	<a href="#">CGA3EAC0G2A102J080AA</a>
1.5nF	1608	0.80 ± 0.10	±5%	10,000	<a href="#">CGA3EAC0G2A152J080AC</a>
2.2nF	1608	0.80 ± 0.10	±5%	12,000	<a href="#">CGA3EAC0G2A222J080AC</a>
3.3nF	1608	0.80 ± 0.10	±5%	16,000	<a href="#">CGA3EAC0G2A332J080AC</a>
4.7nF	1608	0.80 ± 0.10	±5%	16,000	<a href="#">CGA3EAC0G2A472J080AC</a>
6.8nF	1608	0.80 ± 0.10	±5%	22,000	<a href="#">CGA3EAC0G2A682J080AC</a>
10nF	1608	0.80 ± 0.10	±5%	30,000	<a href="#">CGA3EAC0G2A103J080AC</a>

### Class 1 (Temperature Compensating)

Temperature Characteristics: NP0 (-55 to +150°C, 0±30 ppm/°C)

Capacitance	Size	Thickness (mm)	Capacitance Tolerance	ESD Resistance (V)	Catalog Number
					Rated Voltage Edc: 100V
1nF	1608	0.80 ± 0.10	±5%	8,000	<a href="#">CGA3EANP02A102J080AA</a>
1.5nF	1608	0.80 ± 0.10	±5%	10,000	<a href="#">CGA3EANP02A152J080AC</a>
2.2nF	1608	0.80 ± 0.10	±5%	12,000	<a href="#">CGA3EANP02A222J080AC</a>
3.3nF	1608	0.80 ± 0.10	±5%	16,000	<a href="#">CGA3EANP02A332J080AC</a>
4.7nF	1608	0.80 ± 0.10	±5%	16,000	<a href="#">CGA3EANP02A472J080AC</a>
6.8nF	1608	0.80 ± 0.10	±5%	22,000	<a href="#">CGA3EANP02A682J080AC</a>
10nF	1608	0.80 ± 0.10	±5%	30,000	<a href="#">CGA3EANP02A103J080AC</a>