MULTILAYER CERAMIC CHIP CAPACITORS

CEU Series
Automotive Grade
Serial Design

Type: CEU3 [EIA CC0603]
CEU4 [EIA CC0805]

Issue date:
Oct 2013

REMINDERS

Please read before using this product

SAFETY REMINDERS

REMINDERS

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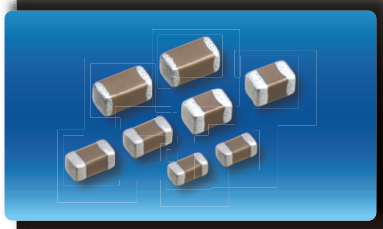
(Example)

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



CEU Series

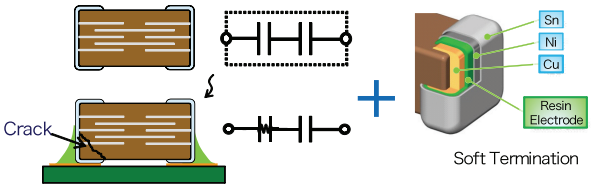
Serial Design

Type: CEU3 [EIA CC0603], CEU4 [EIA CC0805]

Lead Free | RoHS COMPLIANT | Ecological

Features

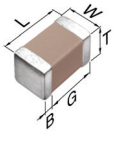
- Fail-safe function with serial configuration of capacitors inside a single product.
- Improved stress resistance.
- Improved thermal shock resistance.
- Allows for reduction of PCB space.
- Compliance with the RoHS Directive.
- AEC-Q200 compliant.



Applications

- Power supply without protective circuit
- Automotive battery line

Shape & Dimensions



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

Catalog Number Construction

CEU • 4 • J • 2 • X7R • 1H • 104 • K • 125 • A • E

Series Name

Dimensions L x W (mm)

Code	Length	Width	Terminal
3	1.60 ± 0.10	0.80 ± 0.10	0.20 min.
4	2.00 ± 0.20	1.25 ± 0.20	0.20 min.

Thickness T Code (mm)

Code	Thickness
E	0.80 mm
J	1.25 mm

Voltage Condition for Life Test

Symbol	Condition
2	2 × R.V.

Temperature Characteristics

Temperature Characteristics	Capacitance Change	Temperature Range
X7R	± 15%	-55 to +125ºC

Rated Voltage (DC)

Code	Voltage (DC)
1H	50V
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. R designates a decimal point.

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

Capacitance Tolerance

Code	Tolerance
K	± 10%
M	± 20%

Nominal Thickness

Code	Thickness
080	0.80 mm
125	1.25 mm

Packaging Style

Code	Style
B	178” Reel, 2mm Pitch

Special Reserved Code

Code	Description
E	Soft Termination

Capacitance Range Chart

CEU3(1608) [EIA CC0603]

Capacitance Range Chart

Temperature Characteristics: X7R (±15%)
Rated Voltage: 100V (2A), 50V (1H)

Capacitance (pF)	Code	Tolerance	X7R 2A (100V)	X7R 1H (50V)
1,000	102	K ± 10%		
1,500	152	M: ± 20%		
2,200	222			
3,300	332			
4,700	472			
6,800	682			
10,000	103			
15,000	153			
22,000	223			
33,000	333			
47,000	473			

Standard Thickness
0.80 mm

Capacitance Range Chart

CEU4(2012) [EIA CC0805]

Capacitance Range Chart

Temperature Characteristics: X7R (±15%)
Rated Voltage: 100V (2A), 50V (1H)

Capacitance (pF)	Code	Tolerance	X7R 2A (100V)	X7R 1H (50V)
1,000	102	K ± 10%		
1,500	152	M: ± 20%		
2,200	222			
3,300	332			
4,700	472			
6,800	682			
10,000	103			
15,000	153			
22,000	223			
33,000	333			
47,000	473			
68,000	683			
100,000	104			

Standard Thickness
1.25 mm

Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125ºC, ±15%)

Capacitance	Size	Thickness (mm)	Capacitance Tolerance	Catalog Number	
				Rated Voltage Edc: 100V	Rated Voltage Edc: 50V
1 nF	1608	0.80 +0.15/-0.10	± 10%	CEU3E2X7R2A102K080AE	
			± 20%	CEU3E2X7R2A102M080AE	
	2012	1.25 +0.25/-0.20	± 10%	CEU4J2X7R2A102K125AE	
			± 20%	CEU4J2X7R2A102M125AE	
1.5 nF	1608	0.80 +0.15/-0.10	± 10%	CEU3E2X7R2A152K080AE	
			± 20%	CEU3E2X7R2A152M080AE	
	2012	1.25 +0.25/-0.20	± 10%	CEU4J2X7R2A152K125AE	
			± 20%	CEU4J2X7R2A152M125AE	
2.2 nF	1608	0.80 +0.15/-0.10	± 10%	CEU3E2X7R2A222K080AE	
			± 20%	CEU3E2X7R2A222M080AE	
	2012	1.25 +0.25/-0.20	± 10%	CEU4J2X7R2A222K125AE	
			± 20%	CEU4J2X7R2A222M125AE	
3.3 nF	1608	0.80 +0.15/-0.10	± 10%	CEU3E2X7R2A332K080AE	
			± 20%	CEU3E2X7R2A332M080AE	
	2012	1.25 +0.25/-0.20	± 10%	CEU4J2X7R2A332K125AE	
			± 20%	CEU4J2X7R2A332M125AE	
4.7 nF	1608	0.80 +0.15/-0.10	± 10%		CEU3E2X7R1H472K080AE
			± 20%		CEU3E2X7R1H472M080AE
	2012	1.25 +0.25/-0.20	± 10%	CEU4J2X7R2A472K125AE	
			± 20%	CEU4J2X7R2A472M125AE	
6.8 nF	1608	0.80 +0.15/-0.10	± 10%		CEU3E2X7R1H682K080AE
			± 20%		CEU3E2X7R1H682M080AE
	2012	1.25 +0.25/-0.20	± 10%	CEU4J2X7R2A682K125AE	
			± 20%	CEU4J2X7R2A682M125AE	
10 nF	1608	0.80 +0.15/-0.10	± 10%		CEU3E2X7R1H103K080AE
			± 20%		CEU3E2X7R1H103M080AE
	2012	1.25 +0.25/-0.20	± 10%	CEU4J2X7R2A103K125AE	
			± 20%	CEU4J2X7R2A103M125AE	
15 nF	1608	0.80 +0.15/-0.10	± 10%		CEU3E2X7R1H153K080AE
			± 20%		CEU3E2X7R1H153M080AE
	2012	1.25 +0.25/-0.20	± 10%	CEU4J2X7R2A153K125AE	
			± 20%	CEU4J2X7R2A153M125AE	
22 nF	1608	0.80 +0.15/-0.10	± 10%		CEU3E2X7R1H223K080AE
			± 20%		CEU3E2X7R1H223M080AE
	2012	1.25 +0.25/-0.20	± 10%		CEU4J2X7R1H223K125AE
			± 20%		CEU4J2X7R1H223M125AE
33 nF	1608	0.80 +0.15/-0.10	± 10%		CEU3E2X7R1H333K080AE
			± 20%		CEU3E2X7R1H333M080AE
	2012	1.25 +0.25/-0.20	± 10%		CEU4J2X7R1H333K125AE
			± 20%		CEU4J2X7R1H333M125AE
47 nF	1608	0.80 +0.15/-0.10	± 10%		CEU3E2X7R1H473K080AE
			± 20%		CEU3E2X7R1H473M080AE
	2012	1.25 +0.25/-0.20	± 10%		CEU4J2X7R1H473K125AE
			± 20%		CEU4J2X7R1H473M125AE
68 nF	2012	1.25 +0.25/-0.20	± 10%		CEU4J2X7R1H683K125AE
			± 20%		CEU4J2X7R1H683M125AE
100 nF	2012	1.25 +0.25/-0.20	± 10%		CEU4J2X7R1H104K125AE
			± 20%		CEU4J2X7R1H104M125AE