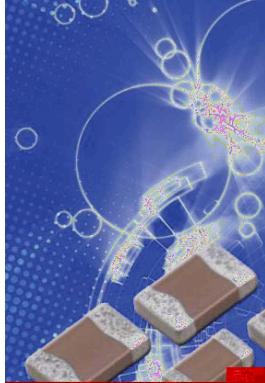




MULTILAYER CERAMIC CHIP CAPACITORS

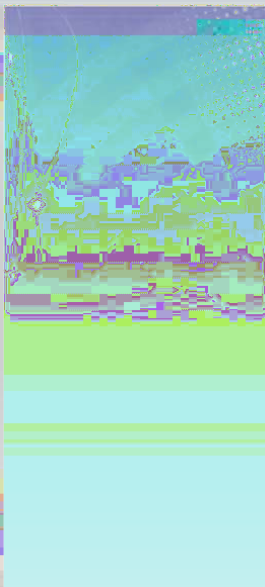


CGB Series Commercial Grade Low Profile

Type:

CGB1 [EIA CC0201]
CGB2 [EIA CC0402]
CGB3 [EIA CC0603]
CGB4 [EIA CC0805]

Issue date:
Apr 2015



REMINDERS

Please read before using this product

SAFETY REMINDERS



REMINDERS

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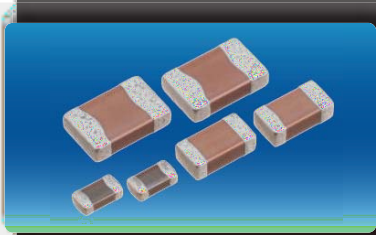
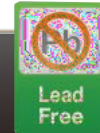
(Example)

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

CGB Series

Low Profile

Type: CGB1 [EIA CC0201], CGB2 [EIA CC0402], CGB3 [EIA CC0603], CGB4 [EIA CC0805]



Features

- Available in four sizes (0201, 0402, 0603, 0805) and as thin as 0.22mm.
- Capacitance offering from 0.1 μ F and up to 10 μ F.
- Ideal for height-restricted applications such as mobile phone.

Applications



- Smart Phone
- LCD modules
- Height restricted applications

Shape & Dimensions



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



CGB • 3 • C • 1 • X5R • 0J • 106 • M • 065 • A • C

Series Name

Dimensions L x W (mm)

Code	Length	Width	Terminal
1	0.60 \pm 0.03	0.30 \pm 0.03	0.10 min.
2	1.00 \pm 0.05	0.50 \pm 0.05	0.10 min.
3	1.60 \pm 0.10	0.80 \pm 0.10	0.20 min.
4	2.00 \pm 0.20	1.25 \pm 0.20	0.20 min.

Temperature Characteristics

Temperature Characteristics	Capacitance Change	Temperature Range
JB	\pm 10%	-25 to +85°C
X5R	\pm 15%	-55 to +85°C
X6S	\pm 22%	-55 to +105°C
X7R	\pm 15%	-55 to +125°C
X7S	\pm 22%	55 to +125°C

Rated Voltage (DC)

Code	Voltage (DC)
0G	4.0V
0J	6.3V
1A	10V
1C	16V
1E	25V

Nominal Capacitance (pF)

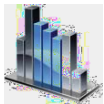
Capacitance Tolerance

Code	Tolerance
K	\pm 10%
M	\pm 20%

Nominal Thickness

Packaging Style

Code	Style
A	178 mm Reel, 4 mm Pitch
B	178 mm Reel, 2 mm Pitch



Capacitance Range Chart

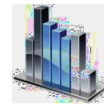
CGB1(0603) [EIA CC0201]

Capacitance Range Chart

Temperature Characteristics: X5R ($\pm 15\%$), X6S ($\pm 22\%$)
 Rated Voltage: 6.3V (0J), 4V (0G)

Capacitance (pF)	Code	Tolerance	X5R	X6S
			0J (6.3V)	0G (4V)
100,000	104	M : $\pm 20\%$		

Standard Thickness 0.22 mm



Capacitance Range Chart

CGB2(1005) [EIA CC0402]

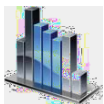
Capacitance Range Chart

Temperature Characteristics: JB ($\pm 10\%$), X5R ($\pm 15\%$), X6S ($\pm 22\%$), X7S ($\pm 22\%$)
 Rated Voltage: 25V (1E), 16V (1C), 10V (1A), 6.3V (0J), 4V (0G)

Capacitance (pF)	Code	Tolerance	JB					X5R					
			1E (25V)	1C (16V)	1A (10V)	0J (6.3V)	0G (4V)	1E (25V)	1C (16V)	1A (10V)	0J (6.3V)	0G (4V)	
220,000	224	K : $\pm 10\%$											
470,000	474	M : $\pm 20\%$											
1,000,000	105												
2,200,000	225												

Capacitance (pF)	Code	Tolerance	X6S			X7S	
			1A (10V)	0J (6.3V)	0G (4V)	0J (6.3V)	0G (4V)
220,000	224	K : $\pm 10\%$					
470,000	474	M : $\pm 20\%$					
1,000,000	105						

Standard Thickness 0.22 mm max.
 0.33 mm max.



Capacitance Range Chart

CGB3(1608) [EIA CC0603]

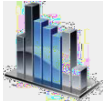
Capacitance Range Chart

Temperature Characteristics: JB ($\pm 10\%$), X5R ($\pm 15\%$), X6S ($\pm 22\%$), X7R ($\pm 15\%$), X7S ($\pm 22\%$)
 Rated Voltage: 25V (1E), 16V (1C), 10V (1A), 6.3V (0J), 4V (0G)

Capacitance (pF)	Code	Tolerance	JB					X5R					
			1E (25V)	1C (16V)	1A (10V)	0J (6.3V)	0G (4V)	1E (25V)	1C (16V)	1A (10V)	0J (6.3V)	0G (4V)	
470,000	474	K : $\pm 10\%$											
1,000,000	105	M : $\pm 20\%$											
2,200,000	225												
4,700,000	475												
10,000,000	106												

Capacitance (pF)	Code	Tolerance	X6S				X7R		X7S
			1C (16V)	1A (10V)	0J (6.3V)	0G (4V)	1A (10V)	0J (6.3V)	0G (4V)
1,000,000	105	K : $\pm 10\%$							
2,200,000	225	M : $\pm 20\%$							
4,700,000	475								

Standard Thickness 0.50 mm max.
 0.55 mm max.



Capacitance Range Chart

CGB4(2012) [EIA CC0805]

Capacitance Range Chart

Temperature Characteristics: JB ($\pm 10\%$), X5R ($\pm 15\%$), X6S ($\pm 22\%$), X7R ($\pm 15\%$)
 Rated Voltage: 25V (1E), 16V (1C), 10V (1A), 6.3V (0J), 4V (0G)

Capacitance (pF)	Code	Tolerance	JB			X5R			X6S			X7R	
			1E (25V)	1C (16V)	1A (10V)	1E (25V)	1C (16V)	1A (10V)	1C (16V)	1A (10V)	0J (6.3V)	1A (10V)	0J (6.3V)
680,000	684	K: $\pm 10\%$											
1,000,000	105	M: $\pm 20\%$	■			■							
2,200,000	225		■	■	■	■	■	■	■	■	■	■	■

Standard Thickness

■ 0.55 mm max.

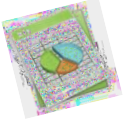


Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: JB (-25 to +85°C, ±10%)

Capacitance	Size	Thickness (mm)	Capacitance Tolerance	Catalog Number			
				Rated Voltage Edc: 25V	Rated Voltage Edc: 16V	Rated Voltage Edc: 10V	Rated Voltage Edc: 6.3V
470nF	1005	0.33max.	±10%				CGB2A3JB1A474K033BB
				CGB2A1JB1C474K033BC			
	±20%				CGB2A3JB1A474M033BB		
		CGB2A1JB1C474M033BC					
1µF	1005	0.33max.	±10%	CGB3B3JB1E474K055AB			CGB2A3JB0J105K033BB
				CGB2A1JB1E105K033BC	CGB2A1JB1C105K033BC	CGB2A1JB1A105K033BC	
	±20%	CGB2A1JB1E105M033BC	CGB2A1JB1C105M033BC	CGB2A1JB1A105M033BC	CGB2A3JB0J105M033BB		
		CGB3B3JB1C105K055AB					
1608	0.55max.	±10%					



Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X5R (-55 to +85°C, ±15%)



Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X6S (-55 to +105°C, ±22%)

Capacitance	Size	Thickness (mm)	Capacitance Tolerance	Catalog Number				
				Rated Voltage Edc: 16V	Rated Voltage Edc: 10V	Rated Voltage Edc: 6.3V	Rated Voltage Edc: 4.0V	
100nF	0603	0.22max.	±20%				CGB1T3X6S0G104M022BB	
220nF	1005	0.22max.	±20%				CGB2T1X6S0G224M022BC	
		0.22max.	±20%				CGB2T1X6S0G474M022BC	
470nF	1005	0.33max.	±10%		CGB2A1X6S1A474K033BC	CGB2A3X6S0J474K033BB	CGB2A1X6S0G474K033BC	
			±20%		CGB2A1X6S1A474M033BC	CGB2A3X6S0J474M033BB	CGB2A1X6S0G474M033BC	
		0.22max.	±20%					CGB2T1X6S0G105M022BC
			±10%		CGB2A1X6S1A105K033BC	CGB2A1X6S0J105K033BC	CGB2A1X6S0G105K033BC	
1µF	1005	0.33max.	±20%		CGB2A1X6S1A105M033BC	CGB2A1X6S0J105M033BC	CGB2A1X6S0G105M033BC	
			±10%		CGB3B1X6S1C105K055AC	CGB3B3X6S1A105K055AB		
2.2µF	1608	0.55max.	±20%		CGB3B1X6S1C105M055AC	CGB3B3X6S1A105M055AB		
			±10%		CGB3B1X6S1A225K055AC	CGB3B3X6S0J225K055AB	CGB3B3X6S0G225K055AB	
		0.55max.	±20%		CGB4B1X6S1C225K055AC	CGB4B3X6S1A225K055AB	CGB4B3X6S0J225K055AB	CGB4B3X6S0G225M055AB
			±10%		CGB4B1X6S1C225M055AC	CGB4B3X6S1A225M055AB	CGB4B3X6S0J225M055AB	
4.7µF	1608	0.55max.	±10%				CGB3B1X6S0G475K055AC	
			±20%				CGB3B1X6S0G475M055AC	

Class 2 (Temperature Stable)

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

Capacitance	Size	Thickness (mm)	Capacitance Tolerance	Catalog Number			
				Rated Voltage Edc: 16V	Rated Voltage Edc: 10V	Rated Voltage Edc: 6.3V	Rated Voltage Edc: 4.0V
1 µF	1608	0.55 max.	± 10%		CGB3B1X7R1A105K055AC	CGB3B3X7R0J105K055AB	
			± 20%		CGB3B1X7R1A105M055AC	CGB3B3X7R0J105M055AB	
2.2 µF	2012	0.55 max.	± 10%		CGB4B1X7R1A225K055AC	CGB4B3X7R0J225K055AB	
			± 20%		CGB4B1X7R1A225M055AC	CGB4B3X7R0J225M055AB	

Class 2 (Temperature Stable)

Temperature Characteristics: X7S (-55 to +125°C, ±22%)

Capacitance	Size	Thickness (mm)	Capacitance Tolerance	Catalog Number			
				Rated Voltage Edc: 16V	Rated Voltage Edc: 10V	Rated Voltage Edc: 6.3V	Rated Voltage Edc: 4.0V
470 nF	1005	0.33 max.	± 10%				CGB2A1X7S0G474K033BC
			± 20%				CGB2A1X7S0G474M033BC
1 µF	1005	0.33 max.	± 10%			CGB2A1X7S0J105K033BC	CGB2A1X7S0G105K033BC
			± 20%			CGB2A1X7S0J105M033BC	CGB2A1X7S0G105M033BC
2.2 µF	1608	0.55 max.	± 10%				CGB3B1X7S0G225K055AC
			± 20%				CGB3B1X7S0G225M055AC