



MULTILAYER CERAMIC CHIP CAPACITORS



CLL Series Commercial Grade Ultra Low Inductance

Type: **CLLC1A [EIA CC0603]**
 CLLE1A [EIA CC0805]
 CLLG1A [EIA CC1206]

Issue date:
Dec 2014



REMINDERS

Please read before using this product

SAFETY REMINDERS



REMINDERS

1. If you intend to use a product listed in this catalog for a purpose that may cause loss of life or other damage, you must contact our company's sales window.
2. We may modify products or discontinue production of a product listed in this catalog without prior notification.
3. We provide "Delivery Specification" that explain precautions for the specifications and safety of each product listed in this catalog. We strongly recommend that you exchange these delivery specifications with customers that use one of these products.
4. If you plan to export a product listed in this catalog, keep in mind that it may be a restricted item according to the "Foreign Exchange and Foreign Trade Control Law". In such cases, it is necessary to acquire export permission in harmony with this law.
5. Any reproduction or transferring of the contents of this catalog is prohibited without prior permission from our company.
6. We are not responsible for problems that occur related to the intellectual property rights or other rights of our company or a third party when you use a product listed in this catalog. We do not grant license of these rights.
7. This catalog only applies to products purchased through our company or one of our company's official agencies. This catalog does not apply to products that are purchased through other third parties.

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.

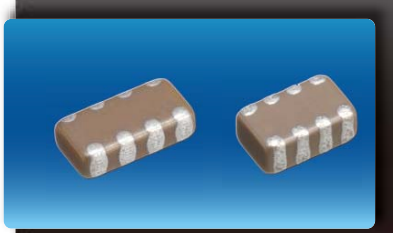
(Example)

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



CLL Series Ultra Low Inductance

Type: CLLC1A [EIA CC0603], CLLE1A [EIA CC0805],
CLLG1A [EIA CC1206]



Features



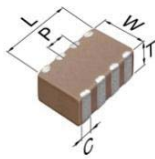
- Features a unique internal structure that cancels magnetic fields to reduce equivalent series inductance.
- Eight side terminal electrodes in one capacitor.
- Small and low profile design enables undersurface mounting for semiconductor packages.

Applications



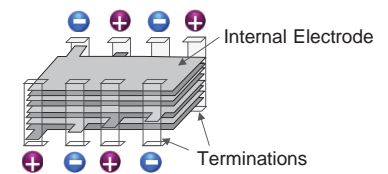
- Decoupling CPU power line
- High speed digital IC, decoupling
- GPU, CPU

Shape & Dimensions



L	Body Length
W	Body Width
T	Body Height
C	Terminal Width
P	Terminal Spacing

Design Structure



Catalog Number Construction

CLL • E1A • X7S • 0G • 685 • M • 050 • A • C

Series Name

Dimensions L x W (mm)

Code	Length	Width
C1A	1.60 ± 0.10	0.80 ± 0.10
E1A	2.00 ± 0.15	1.25 ± 0.15
G1A	3.20 ± 0.15	1.60 ± 0.15

Temperature Characteristics

Temperature Characteristics	Capacitance Change	Temperature Range
X6S	±22%	-55 to +105°C
X7R	±15%	-55 to +125°C
X7S	±22%	-55 to +125°C

Rated Voltage (DC)

Code	Voltage (DC)
0G	4.0V
0J	6.3V
1A	10V

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 = 100nF = 1μF

Capacitance Tolerance

Code	Tolerance
M	± 20%

Nominal Thickness

Code	Thickness
050	0.50 mm
055	0.55 mm
085	0.85 mm

Packaging Style

Code	Style
A	178 mm Reel, 4 mm Pitch

Special Reserved Code

Code	Description
C	TDK Internal Code



Capacitance Range Chart

CLLC1A(1608) [EIA CC0603]

Capacitance Range Chart

Temperature Characteristics: X6S ($\pm 22\%$), X7R ($\pm 15\%$), X7S ($\pm 22\%$)
 Rated Voltage: 4V (0G)

Capacitance (pF)	Code	Tolerance	X6S	X7R	X7S
			0G (4V)	0G (4V)	0G (4V)
47,000	473	M: $\pm 20\%$			
100,000	104				
330,000	334				
470,000	474				
680,000	684				
1,000,000	105				
2,200,000	225				
4,700,000	475				



Capacitance Range Chart

CLLE1A(2012) [EIA CC0805]

Capacitance Range Chart

Temperature Characteristics: X7R ($\pm 15\%$), X7S ($\pm 22\%$)
 Rated Voltage: 10V (1A), 6.3V (0J), 4V (0G)

Capacitance (pF)	Code	Tolerance	X7R			X7S		
			1A (10V)	0J (6.3V)	0G (4V)	1A (10V)	0J (6.3V)	0G (4V)
47,000	473	M: $\pm 20\%$						
100,000	104							
150,000	154							
220,000	224							
330,000	334							
470,000	474							
680,000	684							
1,000,000	105							
1,500,000	155							
2,200,000	225							
4,700,000	475							
6,800,000	685							



Capacitance Range Chart

CLLG1A(3216) [EIA CC1206]

Capacitance Range Chart

Temperature Characteristics: X7R ($\pm 15\%$)
 Rated Voltage: 10V (1A), 6.3V (0J)

Capacitance (pF)	Code	Tolerance	X7R	
			1A (10V)	0J (6.3V)
1,000,000	105	M: $\pm 20\%$		
2,200,000	225			

Standard Thickness

- 0.50 mm
- 0.85 mm



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: 10V	Rated Voltage Edc: 6.3V	Rated Voltage Edc: 4.0V
4.7 µF	1608	0.50 ± 0.05	± 20%			CLLC1AX6S0G475M050AC

Class 2 (Temperature Stable)

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

Capacitance	Size	Thickness (mm)	Capacitance Tolerance	Catalog Number		
				Rated Voltage Edc: 10V	Rated Voltage Edc: 6.3V	Rated Voltage Edc: 4.0V
47 nF	2012	0.50 ± 0.05	± 20%			CLLE1AX7R0G473M050AC
	1608	0.50 ± 0.05	± 20%			CLLC1AX7R0G104M050AC
100 nF	2012	0.50 +0.05/-0.10	± 20%	CLLE1AX7R1A104M050AC		
		0.50 ± 0.05	± 20%			CLLE1AX7R0G104M050AC
150 nF	2012	0.50 +0.05/-0.10	± 20%	CLLE1AX7R1A154M050AC		
220 nF	2012	0.50 +0.05/-0.10	± 20%	CLLE1AX7R1A224M050AC		
330 nF	2012	0.50 +0.05/-0.10	± 20%	CLLE1AX7R1A334M050AC		
470 nF	2012	0.50 +0.05/-0.10	± 20%		CLLE1AX7R0J474M050AC	
680 nF	2012	0.50 +0.05/-0.10	± 20%		CLLE1AX7R0J684M050AC	
1 µF	2012	0.85 ± 0.10	± 20%		CLLE1AX7R0J105M085AC	CLLE1AX7R0G105M085AC
	3216	0.85 ± 0.10	± 20%	CLLG1AX7R1A105M085AC		
1.5 µF	2012	0.85 ± 0.10	± 20%		CLLE1AX7R0J155M085AC	
2.2 µF	3216	0.85 ± 0.10	± 20%		CLLG1AX7R0J225M085AC	

Class 2 (Temperature Stable)

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

Capacitance	Size	Thickness (mm)	Capacitance Tolerance	Catalog Number		
				Rated Voltage Edc: 10V	Rated Voltage Edc: 6.3V	Rated Voltage Edc: 4.0V
47 nF	1608	0.50 ± 0.05	± 20%			CLLC1AX7S0G473M050AC
	2012	0.50 ± 0.05	± 20%			CLLE1AX7S0G473M050AC
100 nF	1608	0.50 ± 0.05	± 20%			CLLC1AX7S0G104M050AC
	2012	0.50 ± 0.05	± 20%			CLLE1AX7S0G104M050AC
150 nF	2012	0.50 ± 0.05	± 20%	CLLE1AX7S1A154M050AC		
220 nF	2012	0.50 ± 0.05	± 20%	CLLE1AX7S1A224M050AC		
330 nF	1608	0.50 +0.05/-0.10	± 20%			CLLC1AX7S0G334M050AC
	2012	0.50 ± 0.05	± 20%	CLLE1AX7S1A334M050AC		
470 nF	1608	0.50 +0.05/-0.10	± 20%			CLLC1AX7S0G474M050AC
	2012	0.50 ± 0.05	± 20%		CLLE1AX7S0J474M050AC	
680 nF	1608	0.50 +0.05/-0.10	± 20%			CLLC1AX7S0G684M050AC
	2012	0.50 ± 0.05	± 20%		CLLE1AX7S0J684M050AC	
1 µF	1608	0.50 +0.05/-0.10	± 20%			CLLC1AX7S0G105M050AC
	2012	0.50 +0.05/-0.10	± 20%			CLLE1AX7S0G105M050AC
1.5 µF	2012	0.50 +0.05/-0.10	± 20%			CLLE1AX7S0G155M050AC
		0.85 ± 0.10	± 20%		CLLE1AX7S0J155M085AC	
2.2 µF	1608	0.50 ± 0.05	± 20%			CLLC1AX7S0G225M050AC
		0.50 +0.05/-0.10	± 20%			CLLE1AX7S0G225M050AC
		0.85 ± 0.10	± 20%			CLLE1AX7S0G225M085AC
4.7 µF	2012	0.50 ± 0.05	± 20%			CLLE1AX7S0G475M050AC
		0.85 ± 0.10	± 20%			CLLE1AX7S0G475M085AC
6.8 µF	2012	0.50 ± 0.05	± 20%			CLLE1AX7S0G685M050AC



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.