



## MULTILAYER CERAMIC CHIP CAPACITORS

### **CKC Series Automotive Grade 2 in 1 Array**

**Type:** CKCM25 [EIA CC0504]  
CKCL22 [EIA CC0805]

**Issue date:**  
Dec 2014



## REMINDERS

Please read before using this product

### SAFETY REMINDERS



### REMINDERS

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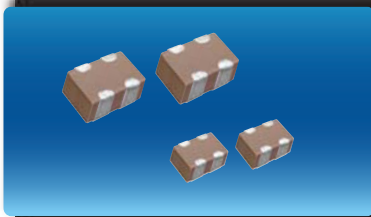
(Example)

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



## CKC Series 2in1 Array

Type: CKCM25 [EIA CC0504], CKCL22 [EIA CC0805]



### Features



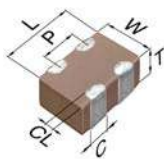
- Multiple capacitors are fitted in a single product, contributing to reduced installation costs.
- Unique electrode construction reduces crosstalk.
- AEC-Q200 compliant and available in soft termination.

### Applications



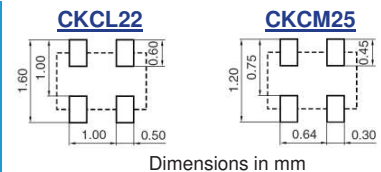
- Interface cable circuit
- PC and peripherals
- CPU bus line
- High frequency circuit
- Noise bypass circuit

### Shape & Dimensions



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

### PC Board Pattern



### Catalog Number Construction

## CKC • L22 • X7R • 1A • 224 • M • 085 • A • L

#### Series Name

#### Dimensions L x W (mm)

Code	Length	Width
M25	1.37 ± 0.15	1.00 ± 0.15
L22	2.00 ± 0.15	1.25 ± 0.15

#### Temperature Characteristics

Temperature Characteristics	Temperature Coefficient or Capacitance Change	Temperature Range
C0G	0±30 ppm/°C	-55 to +125°C
X7R	±15%	-55 to +125°C
X8R	±15%	-55 to +150°C

#### Rated Voltage (DC)

Code	Voltage (DC)
1A	10V
1E	25V
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
F	± 1pF
K	± 10%
M	± 20%

#### Nominal Thickness

Code	Thickness
060	0.60 mm
085	0.85 mm

#### Packaging Style

Code	Style
A	178 mm Reel, 4 mm Pitch

#### Special Reserved Code

Code	Description
L	Soft Termination (Auto)



## Capacitance Range Chart

## CKCM25(C1310)[EIA CC0504]

### Capacitance Range Chart

Temperature Characteristics: COG ( $0 \pm 30\text{ppm}/^\circ\text{C}$ ), X7R ( $\pm 15\%$ ), X8R ( $\pm 15\%$ )  
 Rated Voltage: 100V (2A), 50V (1H), 25V (1E)

Capacitance (pF)	Code	Tolerance	COG		X7R		X8R
			2A (100V)	1H (50V)	1H (50V)	1E (25V)	1H (50V)
10	100	F: $\pm 1\text{pF}$ K: $\pm 10\%$ M: $\pm 20\%$	█	█			
22	220		█	█			
47	470		█	█			
100	101						
220	221						█
470	471						█
1,000	102				█		█
2,200	222				█		█
4,700	472					█	█
10,000	103						█

Standard Thickness

█ 0.60 mm



## Capacitance Range Chart

## CKCL22(2012) [EIA CC0805]

### Capacitance Range Chart

Temperature Characteristics: COG ( $0 \pm 30\text{ppm}/^\circ\text{C}$ ), X7R ( $\pm 15\%$ )  
 Rated Voltage: 100V (2A), 50V (1H), 25V (1E), 10V (1A)

Capacitance (pF)	Code	Tolerance	COG		X7R			
			2A (100V)	1H (50V)	2A (100V)	1H (50V)	1E (25V)	1A (10V)
10	100	F: $\pm 1\text{pF}$ K: $\pm 10\%$ M: $\pm 20\%$	█	█				
22	220		█	█				
47	470		█	█				
100	101							
220	221							
470	471							
1,000	102				█	█		
2,200	222				█	█		
4,700	472					█		
10,000	103					█		
22,000	223					█		
47,000	473					█		
100,000	104						█	
220,000	224						█	

Standard Thickness

█ 0.85 mm



## Capacitance Range Table

### Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (-55 to +125°C, 0±30 ppm/°C)

Capacitance	Size	Thickness (mm)	Capacitance Tolerance	Catalog Number			
				Rated Voltage Edc: 100V	Rated Voltage Edc: 50V	Rated Voltage Edc: 25V	Rated Voltage Edc: 10V
10 pF	1310	0.60 ± 0.10	± 1pF	CKCM25C0G2A100F060AL	CKCM25C0G1H100F060AL		
	2012	0.85 ± 0.15	± 1pF	CKCL22C0G2A100F085AL	CKCL22C0G1H100F085AL		
22 pF	1310	0.60 ± 0.10	± 10%	CKCM25C0G2A220K060AL	CKCM25C0G1H220K060AL		
	2012	0.85 ± 0.15	± 10%	CKCL22C0G2A220K085AL	CKCL22C0G1H220K085AL		
47 pF	1310	0.60 ± 0.10	± 10%	CKCM25C0G2A470K060AL	CKCM25C0G1H470K060AL		
	2012	0.85 ± 0.15	± 10%	CKCL22C0G2A470K085AL	CKCL22C0G1H470K085AL		
100 pF	1310	0.60 ± 0.10	± 10%	CKCM25C0G2A101K060AL	CKCM25C0G1H101K060AL		
	2012	0.85 ± 0.15	± 10%	CKCL22C0G2A101K085AL	CKCL22C0G1H101K085AL		
220 pF	2012	0.85 ± 0.15	± 10%	CKCL22C0G2A221K085AL	CKCL22C0G1H221K085AL		
470 pF	2012	0.85 ± 0.15	± 10%	CKCL22C0G2A471K085AL	CKCL22C0G1H471K085AL		

### Class 2 (Temperature Stable)

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

Capacitance	Size	Thickness (mm)	Capacitance Tolerance	Catalog Number			
				Rated Voltage Edc: 100V	Rated Voltage Edc: 50V	Rated Voltage Edc: 25V	Rated Voltage Edc: 10V
1 nF	1310	0.60 ± 0.10	± 20%		CKCM25X7R1H102M060AL		
	2012	0.85 ± 0.15	± 20%	CKCL22X7R2A102M085AL	CKCL22X7R1H102M085AL		
2.2 nF	1310	0.60 ± 0.10	± 20%		CKCM25X7R1H222M060AL		
	2012	0.85 ± 0.15	± 20%	CKCL22X7R2A222M085AL	CKCL22X7R1H222M085AL		
4.7 nF	1310	0.60 ± 0.10	± 20%		CKCM25X7R1H472M060AL		
	2012	0.85 ± 0.15	± 20%	CKCL22X7R2A472M085AL	CKCL22X7R1H472M085AL		
10 nF	1310	0.60 ± 0.10	± 20%			CKCM25X7R1E103M060AL	
	2012	0.85 ± 0.15	± 20%	CKCL22X7R2A103M085AL	CKCL22X7R1H103M085AL		
22 nF	2012	0.85 ± 0.15	± 20%		CKCL22X7R1H223M085AL		
47 nF	2012	0.85 ± 0.15	± 20%		CKCL22X7R1H473M085AL	CKCL22X7R1E473M085AL	
100 nF	2012	0.85 ± 0.15	± 20%		CKCL22X7R1H104M085AL	CKCL22X7R1E104M085AL	
220 nF	2012	0.85 ± 0.15	± 20%				CKCL22X7R1A224M085AL

### Class 2 (Temperature Stable)

Temperature Characteristics: X8R (-55 to +125°C, ±15%)

Capacitance	Size	Thickness (mm)	Capacitance Tolerance	Catalog Number			
				Rated Voltage Edc: 100V	Rated Voltage Edc: 50V	Rated Voltage Edc: 25V	Rated Voltage Edc: 10V
220 pF	1310	0.60 ± 0.10	± 20%		CKCM25X8R1H221M060AL		
470 pF	1310	0.60 ± 0.10	± 20%		CKCM25X8R1H471M060AL		
1 nF	1310	0.60 ± 0.10	± 20%		CKCM25X8R1H102M060AL		
2.2 nF	1310	0.60 ± 0.10	± 20%		CKCM25X8R1H222M060AL		
4.7 nF	1310	0.60 ± 0.10	± 20%		CKCM25X8R1H472M060AL		