

Multilayer Ceramic Chip Capacitors

General use(Metal cap type)

CKG series

Type: **CKG32K**
 CKG45K
 CKG45N
 CKG57K
 CKG57N

Issue date: August 2011

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 - Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.
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REMINDERS

Please read this before using the product.

SAFETY REMINDERS

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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.
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8. The descriptions in this catalog apply as of August, 2011.

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General Use(Metal Cap Type)

Conformity to RoHS Directive

CKG Series

FEATURES

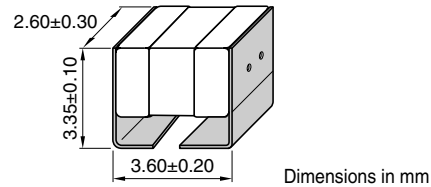
- A unique structure that ensures high reliability.
- The series realizes high reliability, even when used on aluminum or alumina substrates with a significantly different coefficient of thermal expansion, through the use of metal caps that absorb stress caused by heat and mechanical shock.
- Ideal for switching regulators that operate at high frequencies due to small ESR and ESL.

APPLICATION EXAMPLES

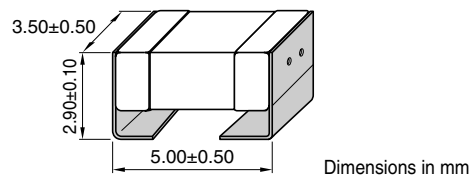
- Power sources using aluminum substrates focusing on heat dissipation, etc.
- Devices with strict low or high temperature ambient conditions
- Replacement of electrolytic capacitors in devices that require maintenance by replacement
- High-reliability devices, such as communications infrastructures or on-board units

SHAPES AND DIMENSIONS

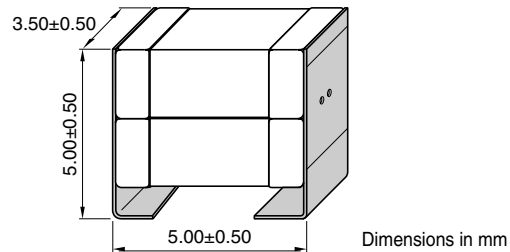
CKG32K



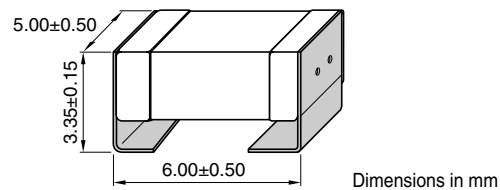
CKG45K



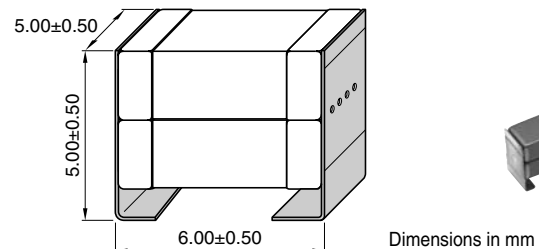
CKG45N



CKG57K



CKG57N



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PRODUCT IDENTIFICATION

CKG 57 K X7R 1E 476 M (500 J C)
 (1) (2) (3) (4) (5) (6) (7) (8) (9) (10)

(1) Series name

(2) Dimensions L×W

32	3.8×2.9mm (Element: 3.2×2.5mm)
45	5.5×4.0mm (Element: 4.5×3.2mm)
57	6.5×5.5mm (Element: 5.7×5.0mm)

(3) Structure

K	Single layer
N	Two stacked layers

(4) Capacitance temperature characteristics

Class 2 (Temperature stable and general purpose)

Temperature characteristics	Capacitance change	Temperature range
X5R	±15%	-55 to +85°C
X7R	±15%	-55 to +125°C
X7S	±22%	-55 to +125°C
X7T	+22, -33%	-55 to +125°C

(5) Rated voltage E_{dc}

1C	16V
1E	25V
1H	50V
2A	100V
2E	250V
2W	450V
2J	630V

(6) Nominal capacitance

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.

474	470,000pF
225	2,200,000pF (2.2μF)

(7) Capacitance tolerance

Symbol	Tolerance
M	±20%

(8) Dimensions T

Expressed by a three-digit number in mm units.

The second and third digits denote the first and second decimal places, respectively.

290	2.90mm
335	3.35mm
500	5.00mm

(9) Packaging style

A	ø178mm reel with 4mm-pitch
B	ø178mm reel with 2mm-pitch
C	ø178mm reel with 1mm-pitch
D	ø330mm reel with 4mm-pitch
E	ø330mm reel with 2mm-pitch
F	ø330mm reel with 1mm-pitch
H	Bulk(bag)
J	ø330mm reel with 8mm-pitch
K	ø178mm reel with 8mm-pitch

(10) TDK internal code

In brochures issued in August, 2011 and later, the product thickness and packing specifications are described at the end of the ordering name [the product name described in brochures] in parentheses.

Since the existing ordering name could not clearly express the product thickness and packing specifications, it has been changed to a new product description method that solves this inconvenience.

Please be aware that the last five digits of the ordering name on the delivery label and those in the brochure differ.

No changes have been made to the delivery name.

(Example)

Brochure issued date	Ordering name (description in the brochure)	Delivery name (description on the delivery label)
Prior to July, 2011	C1608X5R1C105K	C1608X5R1C105KT000N
August, 2011 or later	C1608X5R1C105K(080AA)	C1608X5R1C105KT000N

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CAPACITANCE RANGES: CLASS 2
TEMPERATURE CHARACTERISTICS: X5R(±15%)

Capacitance	Dimension L×W	Thickness T(mm)	Capacitance tolerance	Part No.			
				Rated voltage Edc: 630V	Rated voltage Edc: 450V	Rated voltage Edc: 250V	Rated voltage Edc: 100V
10μF	6555	5.00±0.50	±20%	CKG57NX5R2A106M(500JA)			

TEMPERATURE CHARACTERISTICS: X5R(±15%)

Capacitance	Dimension L×W	Thickness T(mm)	Capacitance tolerance	Part No.		
				Rated voltage Edc: 50V	Rated voltage Edc: 25V	Rated voltage Edc: 16V
22μF	6555	5.00±0.50	±20%	CKG57NX5R1H226M(500JA)		
47μF	6555	5.00±0.50	±20%	CKG57NX5R1E476M(500JA)		
100μF	6555	5.00±0.50	±20%	CKG57NX5R1C107M(500JA)		

TEMPERATURE CHARACTERISTICS: X7R(±15%)

Capacitance	Dimension L×W	Thickness T(mm)	Capacitance tolerance	Part No.			
				Rated voltage Edc: 630V	Rated voltage Edc: 450V	Rated voltage Edc: 250V	Rated voltage Edc: 100V
47nF	3829	3.35±0.10	±20%	CKG32KX7R2J473M(335AA)			
100nF	3829	3.35±0.10	±20%	CKG32KX7R2E104M(335AA)			
	5540	2.90±0.10	±20%	CKG45KX7R2J104M(290JA)			
220nF	3829	3.35±0.10	±20%	CKG32KX7R2E224M(335AA)			
	5540	2.90±0.10	±20%	CKG45KX7R2E224M(290JA)			
470nF	5540	5.00±0.50	±20%	CKG45NX7R2J224M(500JA)			
	6555	3.35±0.15	±20%	CKG57KX7R2J224M(335JA)			
1μF	3829	3.35±0.10	±20%	CKG32KX7R2A474M(335AA)			
	5540	2.90±0.10	±20%	CKG45KX7R2E474M(290JA)			
2.2μF	5540	5.00±0.50	±20%	CKG45NX7R2E474M(500JA)			
	6555	3.35±0.15	±20%	CKG57KX7R2E474M(335JA)			
3.3μF	3829	3.35±0.10	±20%	CKG32KX7R2A105M(335AA)			
	5540	2.90±0.10	±20%	CKG45KX7R2A105M(290JA)			
4.7μF	5540	5.00±0.50	±20%	CKG45NX7R2E105M(500JA)			
	6555	3.35±0.15	±20%	CKG57KX7R2E105M(335JA)			
10μF	3829	3.35±0.10	±20%	CKG57NX7R2E105M(500JA)			
	5540	2.90±0.10	±20%	CKG32KX7R2A225M(335AA)			
2.2μF	5540	5.00±0.50	±20%	CKG45KX7R2A225M(290JA)			
	6555	3.35±0.15	±20%	CKG45NX7R2A225M(500JA)			
3.3μF	6555	5.00±0.50	±20%	CKG57KX7R2A225M(335JA)			
	5540	3.35±0.15	±20%	CKG57NX7R2E225M(500JA)			
4.7μF	6555	5.00±0.50	±20%	CKG57NX7R2A225M(500JA)			
	5540	3.35±0.15	±20%	CKG57KX7R2A335M(335JA)			
10μF	6555	5.00±0.50	±20%	CKG45NX7R2A475M(500JA)			
	5540	3.35±0.15	±20%	CKG57KX7R2A475M(335JA)			
4.7μF	6555	5.00±0.50	±20%	CKG57NX7R2A475M(500JA)			
	5540	3.35±0.15	±20%	CKG57KX7R2A106M(500JA)			

TEMPERATURE CHARACTERISTICS: X7R(±15%)

Capacitance	Dimension L×W	Thickness T(mm)	Capacitance tolerance	Part No.		
				Rated voltage Edc: 50V	Rated voltage Edc: 25V	Rated voltage Edc: 16V
1μF	3829	3.35±0.10	±20%	CKG32KX7R1H105M(335AA)		
1.5μF	5540	2.90±0.10	±20%	CKG45KX7R1H155M(290JA)		
3.3μF	5540	2.90±0.10	±20%	CKG45KX7R1H335M(290JA)		
	5540	5.00±0.50	±20%	CKG45NX7R1H335M(500JA)		
4.7μF	3829	3.35±0.10	±20%	CKG32KX7R1E475M(335AA)		
	5540	2.90±0.10	±20%	CKG45KX7R1H475M(290JC)		
6.8μF	6555	3.35±0.15	±20%	CKG45KX7R1E475M(290JA)		
	5540	5.00±0.50	±20%	CKG57KX7R1H475M(335JA)		
10μF	5540	5.00±0.50	±20%	CKG45NX7R1H685M(500JA)		
	3829	3.35±0.10	±20%	CKG32KX7R1E106M(335AC)		
15μF	5540	2.90±0.10	±20%	CKG45KX7R1C106M(290JA)		
	6555	5.00±0.50	±20%	CKG45NX7R1H106M(500JC)		
22μF	6555	3.35±0.15	±20%	CKG45NX7R1E106M(500JA)		
	5540	5.00±0.50	±20%	CKG57KX7R1H106M(335JC)		
33μF	6555	5.00±0.50	±20%	CKG57KX7R1E106M(335JA)		
	5540	3.35±0.15	±20%	CKG57NX7R1H106M(500JA)		
47μF	6555	5.00±0.50	±20%	CKG57KX7R1C156M(335JA)		
	5540	2.90±0.10	±20%	CKG45KX7R1C226M(290JC)		
100μF	6555	5.00±0.50	±20%	CKG45NX7R1C226M(500JA)		
	5540	3.35±0.15	±20%	CKG57KX7R1E226M(335JA)		
33μF	6555	5.00±0.50	±20%	CKG57NX7R1H226M(500JC)		
	5540	3.35±0.15	±20%	CKG57NX7R1E226M(500JA)		
47μF	6555	5.00±0.50	±20%	CKG57NX7R1C336M(500JA)		
	5540	3.35±0.15	±20%	CKG45NX7R1C476M(500JC)		
100μF	6555	5.00±0.50	±20%	CKG57KX7R1C476M(335JC)		
	5540	3.35±0.15	±20%	CKG57NX7R1E476M(500JC)		
100μF	6555	5.00±0.50	±20%	CKG57NX7R1C107M(500JC)		

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CAPACITANCE RANGES: CLASS 2
TEMPERATURE CHARACTERISTICS: X7S(±22%)

Capacitance	Dimension L×W	Thickness T(mm)	Capacitance tolerance	Part No.			
				Rated voltage Edc: 630V	Rated voltage Edc: 450V	Rated voltage Edc: 250V	Rated voltage Edc: 100V
3.3μF	3829	3.35±0.10	±20%				CKG32KX7S2A335M(335AA)
	5540	2.90±0.10	±20%				CKG45KX7S2A335M(290JA)
4.7μF	3829	3.35±0.10	±20%				CKG32KX7S2A475M(335AA)
	5540	2.90±0.10	±20%				CKG45KX7S2A475M(290JA)
6.8μF	5540	5.00±0.50	±20%				CKG45NX7S2A685M(500JA)
	6555	3.35±0.15	±20%				CKG57KX7S2A685M(335JA)
10μF	5540	5.00±0.50	±20%				CKG45NX7S2A106M(500JA)
	6555	3.35±0.15	±20%				CKG57KX7S2A106M(335JA)
15μF	6555	3.35±0.15	±20%				CKG57KX7S2A156M(335JA)
22μF	6555	5.00±0.50	±20%				CKG57NX7S2A226M(500JA)

TEMPERATURE CHARACTERISTICS: X7S(±22%)

Capacitance	Dimension L×W	Thickness T(mm)	Capacitance tolerance	Part No.		
				Rated voltage Edc: 50V	Rated voltage Edc: 25V	Rated voltage Edc: 16V
4.7μF	3829	3.35±0.10	±20%	CKG32KX7S1H475M(335AB)		
6.8μF	3829	3.35±0.10	±20%	CKG32KX7S1H685M(335AB)		
10μF	3829	3.35±0.10	±20%	CKG32KX7S1H106M(335AB)		
	5540	5.00±0.50	±20%	CKG45NX7S1H106M(500JC)		
47μF	5540	5.00±0.50	±20%			CKG45NX7S1C476M(500JC)

TEMPERATURE CHARACTERISTICS: X7T(+22, -33%)

Capacitance	Dimension L×W	Thickness T(mm)	Capacitance tolerance	Part No.			
				Rated voltage Edc: 630V	Rated voltage Edc: 450V	Rated voltage Edc: 250V	Rated voltage Edc: 100V
150nF	3829	3.35±0.10	±20%	CKG32KX7T2J154M(335AA)			
	5540	2.90±0.10	±20%	CKG45KX7T2J154M(290JA)			
220nF	3829	3.35±0.10	±20%	CKG32KX7T2W224M(335AA)			
	5540	2.90±0.10	±20%	CKG45KX7T2J224M(290JA)			
330nF	3829	3.35±0.10	±20%	CKG32KX7T2E334M(335AA)			
		2.90±0.10	±20%	CKG45KX7T2W334M(290JA)			
	5540	5.00±0.50	±20%	CKG45NX7T2J334M(500JA)			
		6555	3.35±0.15	±20%	CKG57KX7T2J334M(335JA)		
470nF	5540	2.90±0.10	±20%	CKG45KX7T2W474M(290JA)			
		5.00±0.50	±20%	CKG45NX7T2J474M(500JA)			
680nF	6555	3.35±0.15	±20%	CKG57KX7T2J474M(335JA)			
		5.00±0.50	±20%	CKG57NX7T2J684M(500JA)			
	5540	2.90±0.10	±20%	CKG45KX7T2E684M(290JA)			
		5.00±0.50	±20%	CKG45NX7T2W684M(500JA)			
1μF	6555	3.35±0.15	±20%	CKG57KX7T2W684M(335JA)			
		5.00±0.50	±20%	CKG57NX7T2J105M(500JA)			
	5540	2.90±0.10	±20%	CKG45KX7T2E105M(290JA)			
		5.00±0.50	±20%	CKG45NX7T2W105M(500JA)			
1.5μF	6555	3.35±0.15	±20%	CKG57KX7T2W105M(335JA)			
		5.00±0.50	±20%	CKG57NX7T2W155M(500JA)			
	5540	5.00±0.50	±20%	CKG45NX7T2E155M(500JA)			
2.2μF	6555	3.35±0.15	±20%	CKG57KX7T2E155M(335JA)			
		5.00±0.50	±20%	CKG45NX7T2E225M(500JA)			
	5540	5.00±0.50	±20%	CKG57NX7T2W225M(500JA)			
3.3μF	6555	5.00±0.50	±20%	CKG57NX7T2E335M(500JA)			

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