

# Multilayer Ceramic Chip Capacitors

2-chip piled type

## CKG series

Type:           CKG32K  
                  CKG45K  
                  CKG45N  
                  CKG57K  
                  CKG57N

Issue date:     September 2007

- All specifications are subject to change without notice.
- 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.

## REMINDERS

Please read this before using the product.

### SAFETY REMINDERS

#### REMINDERS

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8. The descriptions in this catalog apply as of September 2007.

# 2-chip Piled Multilayer Ceramic Capacitors

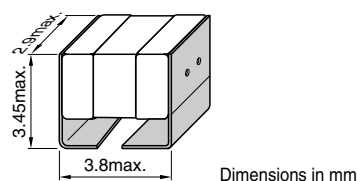
## CKG Series CKG32K Type

Conformity to RoHS Directive

### FEATURES

- No polarity.
- Twice the capacitance is obtainable on a single capacitor space.
- Unique construction provides high reliability.
- The metal caps absorbs stress from thermal and mechanical shocks, ensuring excellent performance on aluminum circuit substrates.
- Low ESR and ESL promises excellent characteristics for high frequency switching power supply.

### CASE SIZE



### APPLICATIONS

Smoothing circuits, temperature variable applications,  
Maintenance free power supplies, DC to DC converters, automo-  
tive applications.

### CAPACITANCE RANGES: CLASS 2

#### TEMPERATURE CHARACTERISTICS: X7R(±15%)

RATED VOLTAGE Edc: 630V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
47,000	±20%	3.45max.	CKG32KX7R2J473M

RATED VOLTAGE Edc: 250V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
100,000	±20%	3.45max.	CKG32KX7R2E104M
220,000	±20%	3.45max.	CKG32KX7R2E224M

RATED VOLTAGE Edc: 100V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
470,000	±20%	3.45max.	CKG32KX7R2A474M
1,000,000	±20%	3.45max.	CKG32KX7R2A105M

RATED VOLTAGE Edc: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
1,000,000	±20%	3.45max.	CKG32KX7R1H105M

RATED VOLTAGE Edc: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
4,700,000	±20%	3.45max.	CKG32KX7R1E475M
10,000,000	±20%	3.45max.	CKG32KX7R1E106M

- For more information about the products of other capacitance or data, please contact us.
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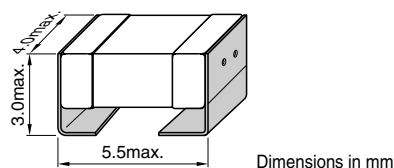
# CKG Series CKG45K Type

Conformity to RoHS Directive

## FEATURES

- No polarity.
- Twice the capacitance is obtainable on a single capacitor space.
- Unique construction provides high reliability.
- The metal caps absorbs stress from thermal and mechanical shocks, ensuring excellent performance on aluminum circuit substrates.
- Low ESR and ESL promises excellent characteristics for high frequency switching power supply.

## CASE SIZE



## APPLICATIONS

Smoothing circuits, temperature variable applications,  
Maintenance free power supplies, DC to DC converters, automotive applications.

## CAPACITANCE RANGES: CLASS 2

### TEMPERATURE CHARACTERISTICS: X7R(±15%)

RATED VOLTAGE Edc: 630V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
100,000	±20%	3.0max.	CKG45KX7R2J104M

RATED VOLTAGE Edc: 250V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
220,000	±20%	3.0max.	CKG45KX7R2E224M
470,000	±20%	3.0max.	CKG45KX7R2E474M

RATED VOLTAGE Edc: 100V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
1,000,000	±20%	3.0max.	CKG45KX7R2A105M
2,200,000	±20%	3.0max.	CKG45KX7R2A225M

RATED VOLTAGE Edc: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
1,500,000	±20%	3.0max.	CKG45KX7R1H155M
3,300,000	±20%	3.0max.	CKG45KX7R1H335M
4,700,000	±20%	3.0max.	CKG45KX7R1H475M

RATED VOLTAGE Edc: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
4,700,000	±20%	3.0max.	CKG45KX7R1E475M

RATED VOLTAGE Edc: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
10,000,000	±20%	3.0max.	CKG45KX7R1C106M
22,000,000	±20%	3.0max.	CKG45KX7R1C226M

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# CKG Series CKG45N Type

Conformity to RoHS Directive

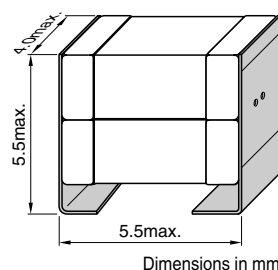
## FEATURES

- No polarity.
- Twice the capacitance is obtainable on a single capacitor space.
- Unique construction provides high reliability.
- The metal caps absorb stress from thermal and mechanical shocks, ensuring excellent performance on aluminum circuit substrates.
- Low ESR and ESL promises excellent characteristics for high frequency switching power supply.

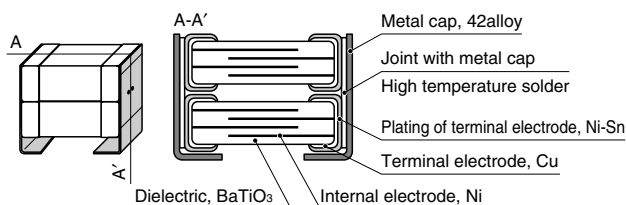
## APPLICATIONS

Smoothing circuits, temperature variable applications, Maintenance free power supplies, DC to DC converters, automotive applications.

## CASE SIZE



## INTERNAL CONSTRUCTION



## CAPACITANCE RANGES: CLASS 2

### TEMPERATURE CHARACTERISTICS: X5R(±15%)

RATED VOLTAGE Edc: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.
10,000,000	±20%	5.5max.	CKG45NX5R1H106M

RATED VOLTAGE Edc: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.
47,000,000	±20%	5.5max.	CKG45NX5R1C476M

### TEMPERATURE CHARACTERISTICS: X7R(±15%)

RATED VOLTAGE Edc: 630V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.
220,000	±20%	5.5max.	CKG45NX7R2J224M

RATED VOLTAGE Edc: 250V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.
470,000	±20%	5.5max.	CKG45NX7R2E474M
1,000,000	±20%	5.5max.	CKG45NX7R2E105M

RATED VOLTAGE Edc: 100V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.
2,200,000	±20%	5.5max.	CKG45NX7R2A225M
4,700,000	±20%	5.5max.	CKG45NX7R2A475M

RATED VOLTAGE Edc: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.
3,300,000	±20%	5.5max.	CKG45NX7R1H335M
6,800,000	±20%	5.5max.	CKG45NX7R1H685M

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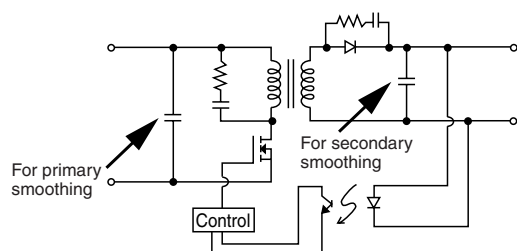
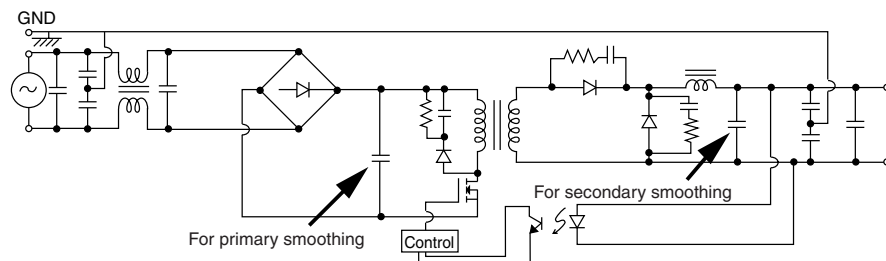
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**RATED VOLTAGE Edc: 25V**

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
10,000,000	±20%	5.5max.	CKG45NX7R1E106M

**RATED VOLTAGE Edc: 16V**

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
22,000,000	±20%	5.5max.	CKG45NX7R1C226M

**TYPICAL APPLICATION EXAMPLES****DC TO DC CONVERTER****SWITCHING POWER SUPPLY**

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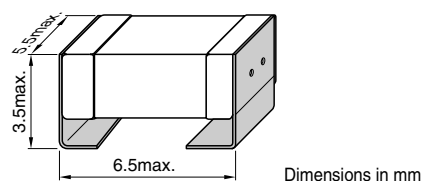
# CKG Series CKG57K Type

Conformity to RoHS Directive

## FEATURES

- No polarity.
- Twice the capacitance is obtainable on a single capacitor space.
- Unique construction provides high reliability.
- The metal caps absorbs stress from thermal and mechanical shocks, ensuring excellent performance on aluminum circuit substrates.
- Low ESR and ESL promises excellent characteristics for high frequency switching power supply.

## CASE SIZE



## APPLICATIONS

Smoothing circuits, temperature variable applications,  
Maintenance free power supplies, DC to DC converters, automotive applications.

## CAPACITANCE RANGES: CLASS 2

### TEMPERATURE CHARACTERISTICS: X7R(±15%)

RATED VOLTAGE Edc: 630V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
220,000	±20%	3.5max.	CKG57KX7R2J224M

RATED VOLTAGE Edc: 250V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
470,000	±20%	3.5max.	CKG57KX7R2E474M
1,000,000	±20%	3.5max.	CKG57KX7R2E105M

RATED VOLTAGE Edc: 100V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
1,000,000	±20%	3.5max.	CKG57KX7R2A105M
2,200,000	±20%	3.5max.	CKG57KX7R2A225M
3,300,000	±20%	3.5max.	CKG57KX7R2A335M
4,700,000	±20%	3.5max.	CKG57KX7R2A475M

RATED VOLTAGE Edc: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
4,700,000	±20%	3.5max.	CKG57KX7R1H475M
10,000,000	±20%	3.5max.	CKG57KX7R1H106M

RATED VOLTAGE Edc: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
10,000,000	±20%	3.5max.	CKG57KX7R1E106M
22,000,000	±20%	3.5max.	CKG57KX7R1E226M

RATED VOLTAGE Edc: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
15,000,000	±20%	3.5max.	CKG57KX7R1C156M
47,000,000	±20%	3.5max.	CKG57KX7R1C476M

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# CKG Series CKG57N Type

Conformity to RoHS Directive

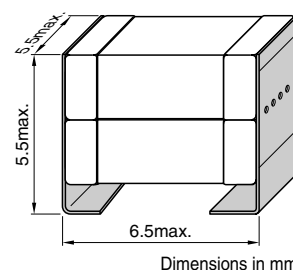
## FEATURES

- No polarity.
- Twice the capacitance is obtainable on a single capacitor space.
- Unique construction provides high reliability.
- The metal caps absorb stress from thermal and mechanical shocks, ensuring excellent performance on aluminum circuit substrates.
- Low ESR and ESL promises excellent characteristics for high frequency switching power supply.

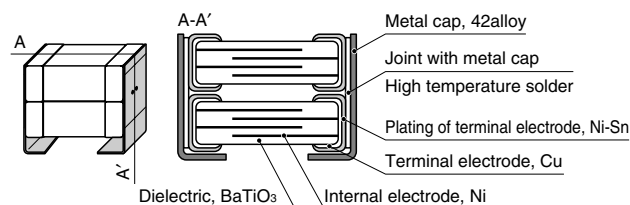
## APPLICATIONS

Smoothing circuits, temperature variable applications, Maintenance free power supplies, DC to DC converters, automotive applications.

## CASE SIZE



## INTERNAL CONSTRUCTION



## CAPACITANCE RANGES: CLASS 2

### TEMPERATURE CHARACTERISTICS: X5R(±15%)

RATED VOLTAGE Edc: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.
22,000,000	±20%	5.5max.	CKG57NX5R1H226M

RATED VOLTAGE Edc: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.
47,000,000	±20%	5.5max.	CKG57NX5R1E476M

RATED VOLTAGE Edc: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.
100,000,000	±20%	5.5max.	CKG57NX5R1C107M

### TEMPERATURE CHARACTERISTICS: X7R(±15%)

RATED VOLTAGE Edc: 630V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.
470,000	±20%	5.5max.	CKG57NX7R2J474M

RATED VOLTAGE Edc: 250V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.
1,000,000	±20%	5.5max.	CKG57NX7R2E105M
2,200,000	±20%	5.5max.	CKG57NX7R2E225M

RATED VOLTAGE Edc: 100V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.
2,200,000	±20%	5.5max.	CKG57NX7R2A225M
4,700,000	±20%	5.5max.	CKG57NX7R2A475M
10,000,000	±20%	5.5max.	CKG57NX7R2A106M

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**RATED VOLTAGE E<sub>dc</sub>: 50V**

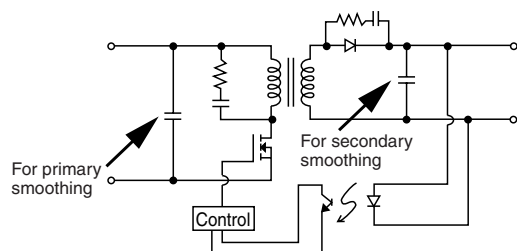
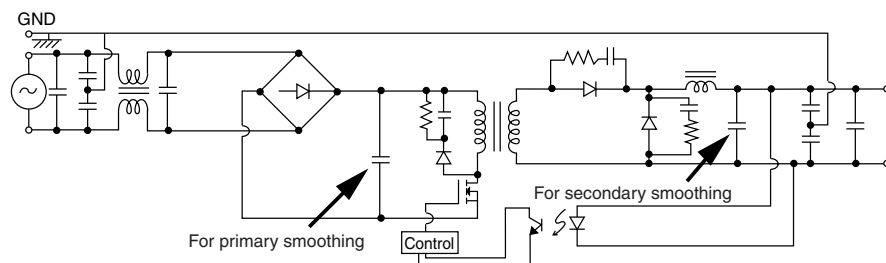
Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
10,000,000	±20%	5.5max.	CKG57NX7R1H106M

**RATED VOLTAGE E<sub>dc</sub>: 25V**

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
22,000,000	±20%	5.5max.	CKG57NX7R1E226M

**RATED VOLTAGE E<sub>dc</sub>: 16V**

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
33,000,000	±20%	5.5max.	CKG57NX7R1C336M

**TYPICAL APPLICATION EXAMPLES****DC TO DC CONVERTER****SWITCHING POWER SUPPLY**

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