

Disc Type Capacitors with Lead

High Voltage Ceramic Capacitors
Commercial Grade

Low dissipation at high frequency
CK45-RR series

Issue date: February 2013

- 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.

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Conformity to RoHS Directive

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Low Dissipation at High Frequency CK45-RR Series

FEATURES

- High voltage ceramic capacitors series, low dissipation factor and higher reliability has been achieved through the use of TDK original dielectric and copper for electrode material due to nice matching of the ceramic dielectrics material for low dissipation factor, and copper for electrode.
- Mainly used as withstand voltage protection for power transistors and diodes of switching power sources, for controlling noise, and for absorbing highfrequency pulses.
- Low dissipation factor, and decreased self-heating temperature in the high frequency, and high voltage application.
- These products shall conform to RoHS Directive due to lead(Pb) free of lead wire and internal solder material.
- Compatible with halogen-free external resin coating.

OPERATING TEMPERATURE RANGE: -25 to +125°C

(The maximum operating temperature of 125°C includes capacitor self-generated heat of up to 20°C.)

CAPACITANCE AND DIMENSIONS

TEMPERATURE CHARACTERISTICS: R (+15, -30%)

RATED VOLTAGE E_{dc}: 1kV

Part No.	Capacitance (pF)	Dimensions (mm)				Taping dimensions
		D max.	T max.	F	d	
CK45-R3AD101K-□*RA	100	6.0	5.0	5.0±1.5	0.6±0.05	V1
CK45-R3AD151K-□*RA	150	6.0	5.0	5.0±1.5	0.6±0.05	V1
CK45-R3AD221K-□*RA	220	6.0	5.0	5.0±1.5	0.6±0.05	V1
CK45-R3AD331K-□*RA	330	6.5	5.0	5.0±1.5	0.6±0.05	V1
CK45-R3AD471K-□*RA	470	7.0	5.0	5.0±1.5	0.6±0.05	V1
CK45-R3AD681K-□*RA	680	8.0	5.0	5.0±1.5	0.6±0.05	V1
CK45-R3AD102K-□*RA	1,000	9.0	5.0	5.0±1.5	0.6±0.05	V1
CK45-R3AD152K-□*RA	1,500	10.0	5.0	5.0±1.5	0.6±0.05	V1
CK45-R3AD222K-□*RA	2,200	11.5	5.0	7.5±1.5	0.6±0.05	V2

* □ : Lead shape symbol

RATED VOLTAGE E_{dc}: 2kV

Part No.	Capacitance (pF)	Dimensions (mm)				Taping dimensions
		D max.	T max.	F	d	
CK45-R3DD101K-□*RA	100	6.0	5.0	5.0±1.5	0.6±0.05	V1
CK45-R3DD151K-□*RA	150	6.0	5.0	5.0±1.5	0.6±0.05	V1
CK45-R3DD221K-□*RA	220	7.0	5.0	5.0±1.5	0.6±0.05	V1
CK45-R3DD331K-□*RA	330	7.5	5.0	5.0±1.5	0.6±0.05	V1
CK45-R3DD471K-□*RA	470	8.5	5.0	5.0±1.5	0.6±0.05	V1
CK45-R3DD681K-□*RA	680	9.5	5.0	5.0±1.5	0.6±0.05	V1
CK45-R3DD102K-□*RA	1,000	11.0	5.0	5.0±1.5	0.6±0.05	V1
CK45-R3DD152K-□*RA	1,500	12.0	5.0	7.5±1.5	0.6±0.05	V2
CK45-R3DD222K-□*RA	2,200	14.5	5.0	7.5±1.5	0.6±0.05	V3

* □ : Lead shape symbol

PRODUCT IDENTIFICATION

CK	45	-R	3AD	102	K	-N	R	A
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

- (1) Type
- (2) Shape
- (3) Temperature characteristics
- (4) Rated voltage
- (5) Nominal capacitance
- (6) Capacitance tolerance
- (7) Lead type
- (8) Low dissipation
- (9) Halogen-free compatible product



CHARACTERISTICS AND TOLERANCE

Temperature characteristics	Test temperature range	Capacitance tolerance
R (+15, -30%)	-25 to +125°C	K (±10%)

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CAPACITANCE AND DIMENSIONS

TEMPERATURE CHARACTERISTICS: R (+15, -30%)

RATED VOLTAGE E_{dc}: 3kV

Part No.	Capacitance (pF)	Dimensions (mm)				Taping dimensions
		D max.	T max.	F	d	
CK45-R3FD101K-□*RA	100	6.0	6.0	7.5±1.5	0.6±0.05	V2
CK45-R3FD151K-□RA	150	7.0	6.0	7.5±1.5	0.6±0.05	V2
CK45-R3FD221K-□RA	220	7.5	6.0	7.5±1.5	0.6±0.05	V2
CK45-R3FD331K-□RA	330	8.5	6.0	7.5±1.5	0.6±0.05	V2
CK45-R3FD471K-□RA	470	9.5	6.0	7.5±1.5	0.6±0.05	V2
CK45-R3FD681K-□RA	680	10.5	6.0	7.5±1.5	0.6±0.05	V2
CK45-R3FD102K-□RA	1,000	12.0	6.0	7.5±1.5	0.6±0.05	V2
CK45-R3FD152K-□RA	1,500	14.5	6.0	7.5±1.5	0.6±0.05	V3
CK45-R3FD222K-□RA	2,200	16.5	6.0	10.0±2	0.6±0.05	—

* □ : Lead shape symbol

LIST OF STANDARD LEAD SHAPES

The lead type is indicated by the letter which is the 15th character of the product name.

Example) TDK Product Name: **CK45-R3AD102K-NRA**

└ N: Lead type (Vertical kink, Short)

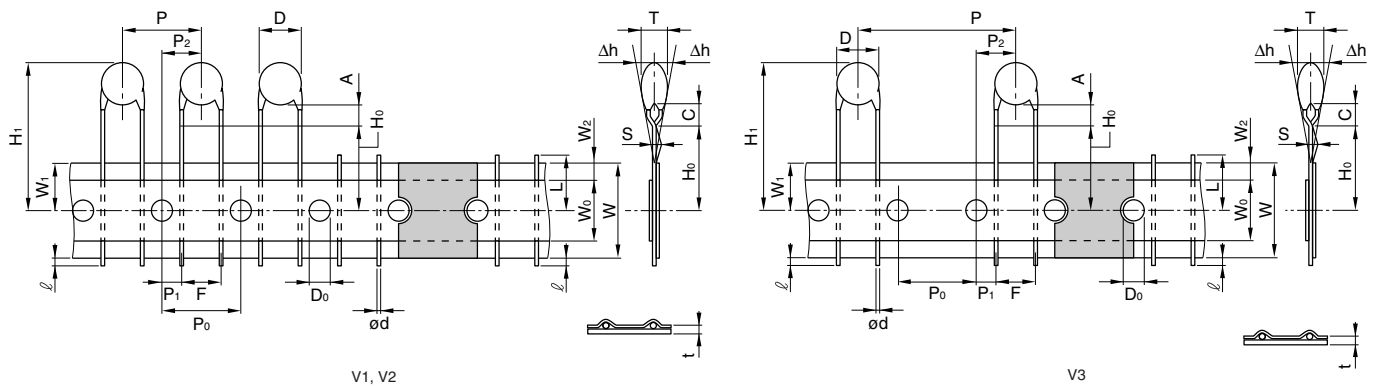
	Long lead Symbol G	Short lead Symbol N	Taping Symbol V
Vertical kink			

Dimensions in mm

- We recommend using a vertical kink type.
- For bulk products, we recommend a short lead type with the symbol N.

TAPING DIMENSIONS

VERTICAL KINK LEAD TYPE



Item	Symbol	Dimensions (mm)			Remarks
		V1	V2	V3	
Body diameter	D	Depends on the specification of each product.			
Body thickness	T	Depends on the specification of each product.			
Lead-wire diameter	ød	0.6±0.05	0.6±0.05	0.6±0.05	
Pitch of component	P	12.7±1.0	15.0±1.0	30.0±1.0	Including the slant of body
Feed hole pitch	P ₀	12.7±0.3	15.0±0.3	15.0±0.3	Excepting the tape splicing part
Feed hole center to lead	P ₁	3.85±0.7	3.75±0.7	3.75±0.7	
Feed hole center to component center	P ₂	6.35±1.3	7.5±1.3	7.5±1.3	
Lead-to lead distance	F	5+0.8, -0.2	7.5±0.8	7.5±0.8	Measuring point is bottom kink
Component alignment	Δh	0±2.0	0±2.0	0±2.0	Including the slanting body due to bending lead-wire
Tape width	W	18.0+1.0, -0.5	18.0+1.0, -0.5	18.0+1.0, -0.5	
Adhesive tape width	W ₀	10.0min.	10.0min.	10.0min.	
Hole position	W ₁	9.0±0.5	9.0±0.5	9.0±0.5	
Adhesive tape position	W ₂	4.0max.	4.0max.	4.0max.	Adhesive tape do not stick out the tape
Bottom of kink from tape center	H ₀	16.0+1.5, -0.5	16.0+1.5, -0.5	16.0+1.5, -0.5	
Height of body from tape center	H ₁	46.0max.	46.0max.	46.0max.	
Lead-wire protrusion	ℓ	1.0max.	1.0max.	1.0max.	
Feed hole diameter	D ₀	4.0±0.2	4.0±0.2	4.0±0.2	
Total tape thickness	t	0.6±0.3	0.6±0.3	0.6±0.3	Including adhesive tape
Length of snapped lead	L	11.0max.	11.0max.	11.0max.	
Coating on lead	C	4.0max.	4.0max.	4.0max.	
Height of kink	A	4.0max.	4.0max.	4.0max.	Measuring point is bottom kink
Spring action	S	2.0max.	2.0max.	2.0max.	

• For more information about products with other capacitance or other data, please contact us.

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