Disc Type Capacitors with Lead

High Voltage Ceramic Capacitors
Automotive Grad

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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FEATURES

- AEC-Q200 compliant.
- 1,000 cycles guaranteed under heat shock testing at –55°C to +125°C.
- It can be used as a capacitor for snubber circuits used in automobiles (EV, HEV).
- 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.
- Low dissipation factor, and decreased self-heating temperature in the high frequency, and high voltage application.
- Compatible with halogen-free external resin coating.

OPERATING TEMPERATURE RANGE: –40 to +125°C

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

PRODUCT IDENTIFICATION

CK	45	-R	3AD	102	K	A	N	R	A
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

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

TEMPERATURE 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 Edc: 1kV

Part No.	Capacitance (pF)	Dimensions (mm)				Taping dimensions
		D max.	T max.	F	d	
CK45-R3AD101KA□*RA	100	6.0	5.0	5.0±1.5	0.6±0.05	V1
CK45-R3AD151KA□RA	150	6.0	5.0	5.0±1.5	0.6±0.05	V1
CK45-R3AD221KA□RA	220	7.0	5.0	5.0±1.5	0.6±0.05	V1
CK45-R3AD331KA□RA	330	7.5	5.0	5.0±1.5	0.6±0.05	V1
CK45-R3AD471KA□RA	470	8.5	5.0	5.0±1.5	0.6±0.05	V1
CK45-R3AD681KA□RA	680	9.5	5.0	5.0±1.5	0.6±0.05	V1
CK45-R3AD102KA□RA	1,000	11.0	5.0	5.0±1.5	0.6±0.05	V1
CK45-R3AD152KA□RA	1,500	12.5	5.0	7.5±1.5	0.6±0.05	V2
CK45-R3AD222KA□RA	2,200	15.0	5.0	7.5±1.5	0.6±0.05	V3

* □ : Lead shape symbol

RATED VOLTAGE Edc: 2kV

Part No.	Capacitance (pF)	Dimensions (mm)				Taping dimensions
		D max.	T max.	F	d	
CK45-R3DD101KA□*RA	100	6.0	6.0	7.5±1.5	0.6±0.05	V2
CK45-R3DD151KA□RA	150	7.0	6.0	7.5±1.5	0.6±0.05	V2
CK45-R3DD221KA□RA	220	7.5	6.0	7.5±1.5	0.6±0.05	V2
CK45-R3DD331KA□RA	330	8.5	6.0	7.5±1.5	0.6±0.05	V2
CK45-R3DD471KA□RA	470	9.5	6.0	7.5±1.5	0.6±0.05	V2
CK45-R3DD681KA□RA	680	10.5	6.0	7.5±1.5	0.6±0.05	V2
CK45-R3DD102KA□RA	1,000	12.5	6.0	7.5±1.5	0.6±0.05	V2

* □ : Lead shape symbol

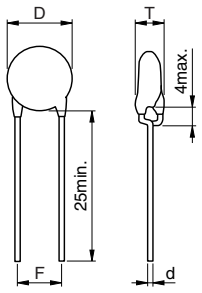
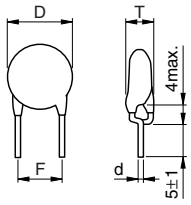
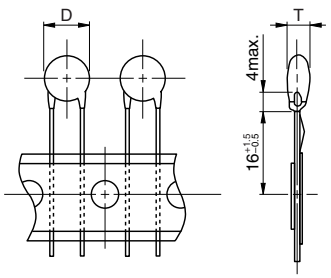
LIST OF STANDARD LEAD SHAPES

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

Example) TDK Product Name: **CK45-R3AD102KANRA**

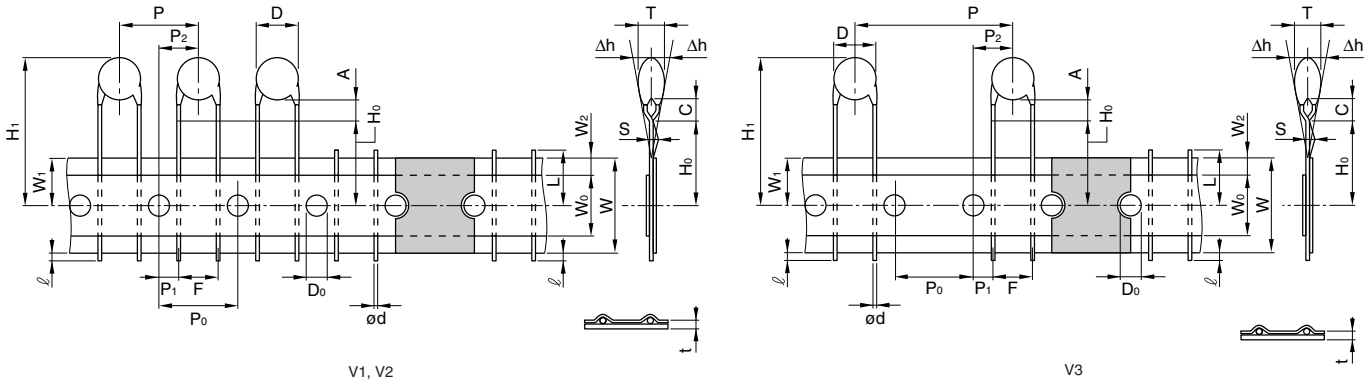
└ N: Lead type (Vertical kink, Short)

Dimensions in mm

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

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

TAPING DIMEMSIONS
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 snipped 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.