Disc Type Capacitors with Lead

High Voltage Ceramic Capacitors
Commercial Grade

Safety Standard Approved
CS series

Issue date: March 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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BASIC INSULATION TYPE
CLASS 2 HIGH DIELECTRIC

FEATURES

- Compliant with IEC and the safety standards of various countries.
- Rated at a withstand voltage of AC.2600V.
- Flame-resistant reinforced outer insulation prevents fires, electrical shock, and other potential hazards.
- Compatible with halogen-free external resin coating.

OPERATING TEMPERATURE RANGE: –25 to +125°C

TEMPERATURE CHARACTERISTICS AND TOLERANCE

Temperature characteristics	Test temperature range	Capacitance tolerance
SL (+350 to –1000ppm/°C)	+20 to +85°C	J (±5%)
B (±10%)	–25 to +85°C	K (±10%)
Z5U (+22, –56%)	+10 to +85°C	M (±20%)
F (+30, –80%)	–25 to +85°C	M (±20%)

PRODUCT IDENTIFICATION

CS	80	ZU	2GA	222	M	Y	N	K	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) Class
(8) Lead type
(9) Safety standard
(10) Halogen-free compatible product

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CAPACITANCE AND DIMENSIONS

Part No.	Temperature characteristics	Capacitance (pF)	Capacitance tolerance	Dimensions (mm) D max.	T max.	F	d	Taping dimensions
CS45SL2GA100JY□*KA	SL (+350 to −1000ppm/°C)	10	J (±5%)	7.0	5.0	7.5±1.5	0.6±0.05	V2
CS45SL2GA150JY□KA		15	J (±5%)	7.0	5.0	7.5±1.5	0.6±0.05	V2
CS45SL2GA220JY□KA		22	J (±5%)	7.0	5.0	7.5±1.5	0.6±0.05	V2
CS45SL2GA330JY□KA		33	J (±5%)	7.0	5.0	7.5±1.5	0.6±0.05	V2
CS45SL2GA470JY□KA		47	J (±5%)	7.0	5.0	7.5±1.5	0.6±0.05	V2
CS45SL2GA680JY□KA		68	J (±5%)	7.5	5.0	7.5±1.5	0.6±0.05	V2
CS65-B2GA101KY□KA	B (±10%)	100	K (±10%)	7.0	5.0	7.5±1.5	0.6±0.05	V2
CS65-B2GA151KY□KA		150	K (±10%)	7.0	5.0	7.5±1.5	0.6±0.05	V2
CS65-B2GA221KY□KA		220	K (±10%)	7.0	5.0	7.5±1.5	0.6±0.05	V2
CS70-B2GA331KY□KA		330	K (±10%)	7.0	5.0	7.5±1.5	0.6±0.05	V2
CS75-B2GA471KY□KA		470	K (±10%)	7.5	5.0	7.5±1.5	0.6±0.05	V2
CS85-B2GA681KY□KA		680	K (±10%)	8.5	5.0	7.5±1.5	0.6±0.05	V2
CS65ZU2GA102MY□KA	Z5U (+22, −56%)	1,000	M (±20%)	7.0	5.0	7.5±1.5	0.6±0.05	V2
CS75ZU2GA152MY□KA		1,500	M (±20%)	7.5	5.0	7.5±1.5	0.6±0.05	V2
CS80ZU2GA222MY□KA		2,200	M (±20%)	8.0	5.0	7.5±1.5	0.6±0.05	V2
CS95ZU2GA332MY□KA		3,300	M (±20%)	9.5	5.0	7.5±1.5	0.6±0.05	V2
CS11ZU2GA472MY□KA		4,700	M (±20%)	10.5	5.0	7.5±1.5	0.6±0.05	V2
CS14-F2GA103MY□KA	F (+30, −80%)	10,000	M (±20%)	14.5	5.0	7.5±1.5	0.6±0.05	V3

* □ : Lead shape symbol

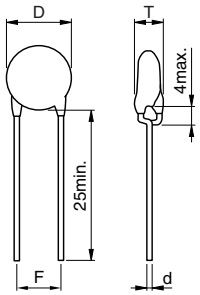
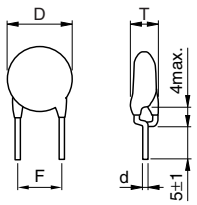
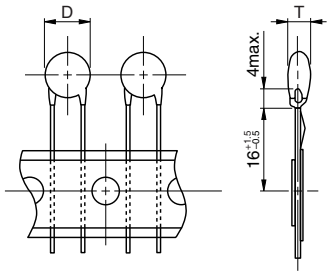
LIST OF STANDARD LEAD SHAPES

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

Example) TDK Product Name: **CS80ZU2GA222MYNKA**

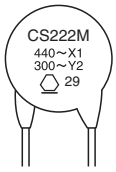
└N: Lead type (Vertical kink, Short)

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.

MARKINGS

Item	Markings	Specifications	Marking examples
1. Series	CS	CS series	
2. Nominal capacitance	222	2200pF	
3. Capacitance tolerance	M	±20%	
4. Rated voltage Eac	440～X1	X1: AC.440V	
	300～Y2	Y2: AC.300V	
5. TDK's logogram	⬡	Production base code	
6. Date code	29	2012.9*	

(Marking position is reference.)

* Year and month of production: last digit of year + month denoted by 1, 2, 3, 4, 5, 6, 7, 8, 9, O (October), N (November), or D (December).
* The expression has become simplified due to a revision in the standards.

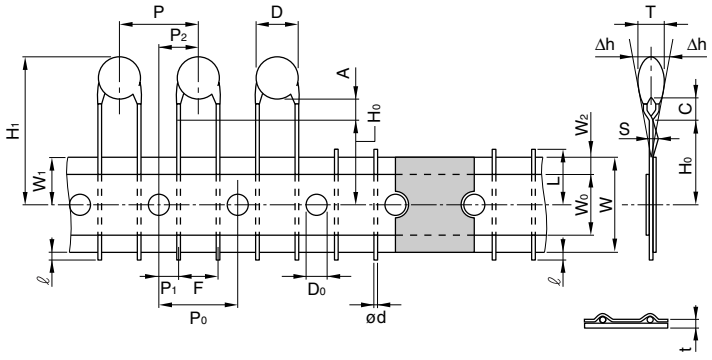
CERTIFIED STATUS OF VARIOUS COUNTRIES

Safety standard	Standard No.	Temperature characteristics	Insulation sub-class	Rated voltage	Approval report No.	
					Taiwan	Xiamen
BSI	BS EN60384-14	SL, B, Z5U, F	X1, Y2	X1: AC.440V Y2: AC.300V	KM37103	KM37103
VDE	EN 60384-14				40017930	40017930
SEV	EN 60384-14				12.0263	12.0263
SEMKO	EN 60384-14				1125249	1125249
NEMKO	EN 60384-14				P12215336	P12215336
DEMKO	EN 60384-14				D-01153	D-01153
FIMKO	EN 60384-14				FI 27399	FI 27399
IMQ	EN 60384-14				V3692	V3692
SAA	AS3250				CS6268	CS6268
UL	UL 60384-14				E37861	E37861
CSA	CAN/CSA-E60384-14				1785515	1785515
CQC	GB/T14472-1998				CQC12001082619	CQC10001052862

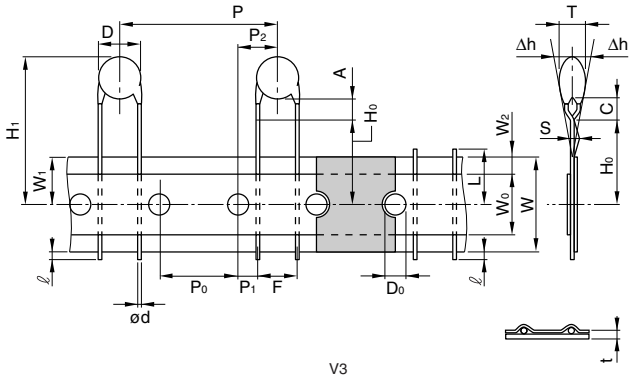
• Certificate numbers shall be changed owing to the revisions of the related standards.

TAPING DIMEMSIONS

VERTICAL KINK LEAD TYPE



V1, V2



V3

Item	Symbol	Dimensions (mm) V1	V2	V3	Remarks
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.