

# Mid-high Voltage Ceramic Capacitors

Disk type with lead

Safety standard approved

CD series

Issue date: January 2011

- 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.

# Mid-high Voltage Ceramic Capacitors(Disk with Lead) Safety Standard Approved CD Series

Conformity to RoHS Directive

**REINFORCED INSULATION TYPE/Operating temperature range: -25 to +105°C(UL standard: -25 to +85°C)  
CLASS 2 HIGH DIELECTRIC**

## FEATURES

- Smaller than conventional capacitors.
- Flame-resistant reinforced outer insulation prevents fires, electrical shock, and other potential hazards.
- Compliant with the safety standards of 11 countries.
- This ceramic capacitor meets European Class II (reinforced insulation) Safety Standards VDE, SEV, SEMKO, BS. Since it is rated at a withstand voltage of AC.4000V, it can be used in single-unit configurations within European Class II devices.

## CAPACITANCE TEMPERATURE CHARACTERISTICS AND TOLERANCE

Temperature characteristics	Test temperature range	Capacitance tolerance
B(±10%)	-25 to +85°C	K(±10%)
E(+20, -55%)	-25 to +85°C	M(±20%)

## PRODUCT IDENTIFICATION

CD	12	-E	2GA	222	M	Y	N	S
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

- (1) Type
- (2) Shape
- (3) Capacitance temperature characteristics
- (4) Rated voltage
- (5) Nominal capacitance
- (6) Capacitance tolerance
- (7) Class
- (8) Lead type
- (9) Safety standard

## MARKINGS

Item	Marking examples																											
1. Series	CD																											
2. Nominal capacitance	222(2200pF)																											
3. Capacitance tolerance	M(±20%)																											
4. Rated voltage Eac	250V ~ (AC.250V)																											
5. Withstand voltage Eac	T4KV ~ (AC.4kV)																											
6. Sub-class of safety performance	X1Y1																											
7. TDK's logogram																												
8. Date code	94 (2009.4)*																											
9. Regulatory body safety standards compliance markings	<table border="0"> <tr> <td>BSI (U.K.)</td> <td></td> <td>SEV (Switzerland)</td> <td></td> <td>TJ508</td> <td>FIMKO (Finland)</td> <td></td> <td>NEMKO (Norway)</td> <td></td> </tr> <tr> <td>SEMKO (Sweden)</td> <td></td> <td>UL (U.S.A.)</td> <td></td> <td></td> <td>DEMKO (Denmark)</td> <td></td> <td>IMQ (Italy)</td> <td></td> </tr> <tr> <td>VDE (Germany)</td> <td></td> <td>CSA (Canada)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	BSI (U.K.)		SEV (Switzerland)		TJ508	FIMKO (Finland)		NEMKO (Norway)		SEMKO (Sweden)		UL (U.S.A.)			DEMKO (Denmark)		IMQ (Italy)		VDE (Germany)		CSA (Canada)						
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	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Front</p> </div> <div style="text-align: center;"> <p>Back</p> </div> </div> <p>(Marking position of the monogram is reference.)</p>																											

\* 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).

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**INTERNATIONALLY CERTIFIED STATUS**  
**IEC60384-14 EN60384-14 Approved**

Safety standard	Standard No. of IEC	Standard No.	Temperature characteristics	Insulation sub-class	Rated voltage Eac(V)	Approval report No.		
						Japan	Taiwan	Xiamen
BSI	IEC 60065	BS EN 60065	B, E	X1, Y1	250	226495	226495	226495
	IEC 60384-14	BS EN60384-14						
VDE	IEC 60384-14	EN60384-14	B, E	X1	400	138526	138550	124321
				Y1	250			
SEV	IEC 60384-14	EN60384-14	B, E	X1	400	09.0963	09.0963	09.0963
				Y1	250			
SEMKO	IEC 60384-14	EN60384-14	B, E	X1, Y1	250	915564	915564	915396
NEMKO	IEC 60384-14	EN60384-14	B, E	X1, Y1	250	P09211509	P09211509	P08209310
DEMKO	IEC 60384-14	EN60384-14	B, E	X1, Y1	250	315180-01	315180-01	314712-02
FIMKO	IEC 60384-14	EN60384-14	B, E	X1, Y1	250	FI 25452	FI 25452	FI 24307
IMQ	IEC 60384-14	EN60384-14	B, E	X1, Y1	250	V3691	V3691	V3691
SAA	IEC 60065	AS3250	B, E	—	400	6268	6268	6268
UL	—	UL 1414	B, E	(X, Y)	250	E37861	E37861	E37861
CSA	—	CSA C22.2 No.0 & No.1	B, E	(X, Y)	250	LR35801	LR65972	LR65972

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

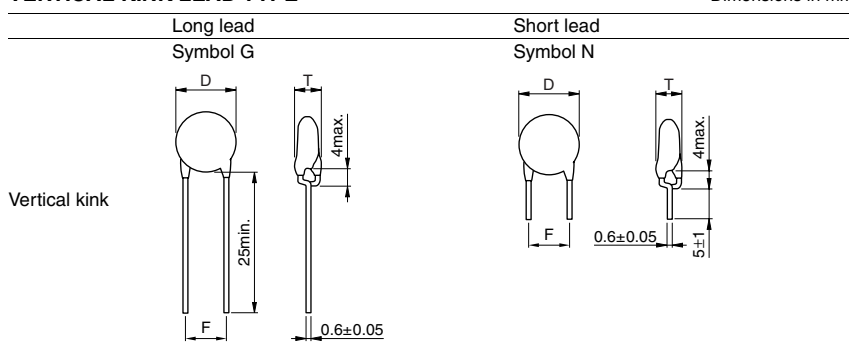
**CAPACITANCE AND DIMENSIONS**

Part No	Capacitance temperature characteristics	Capacitance (pF)	Capacitance tolerance	Dimensions (mm)		
				D max.	T max.	F
CD70-B2GA101KY□*S	B(±10%)	100	K(±10%)	7	7	10+2, -1
CD70-B2GA151KY□S		150	K(±10%)	7	7	10+2, -1
CD85-B2GA221KY□S		220	K(±10%)	8.5	7	10+2, -1
CD90-B2GA331KY□S		330	K(±10%)	9	7	10+2, -1
CD90-B2GA391KY□S		390	K(±10%)	9	7	10+2, -1
CD95-B2GA471KY□S		470	K(±10%)	9.5	7	10+2, -1
CD75-E2GA681MY□S		680	M(±20%)	7.5	7	10+2, -1
CD85-E2GA102MY□S		1,000	M(±20%)	8.5	7	10+2, -1
CD10-E2GA152MY□S		1,500	M(±20%)	10	7	10+2, -1
CD12-E2GA222MY□S		E(+20, -55%)	2,200	M(±20%)	11.5	7
CD14-E2GA332MY□S	3,300		M(±20%)	13.5	7	10+2, -1
CD15-E2GA392MY□S	3,900		M(±20%)	14.5	7	10+2, -1
CD16-E2GA472MY□S	4,700		M(±20%)	15.5	7	10+2, -1

\* □ : Lead shape symbol

**SHAPES AND DIMENSIONS**
**VERTICAL KINK LEAD TYPE**

Dimensions in mm



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

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

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