



Ultra High Voltage Ceramic Capacitors

With metal terminals

For distribution lines

FD/MD series

FD-9A to FD-36A

MD-1A


PRECAUTIONS
(1) During transportation and storage

Do not transport or store where the products will be exposed to high temperature or high humidity.

Do not expose to poisonous gases such as H₂SO₄, HCl, or HNO₃.

Avoid excessive impact such as that caused by falling.

(2) During operation

Avoid contact with electrolytes such as perspiration. Do not touch with bare hands.

Avoid excessive impact such as that caused by falling.

Do not apply solder to stud terminals.

Do not re-machine the terminals.

(3) Usage

Make sure that the products are not exposed to radiant heat from chambers or transformers.

(4) Others

The products listed on this catalog are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property.

If you intend to use the products in the applications listed below or if you have special requirements exceeding the range or conditions set forth in the each catalog, please contact us.

(1) Aerospace/Aviation equipment

(2) Transportation equipment (electric trains, ships, etc.)

(3) Medical equipment

(4) Power-generation control equipment

(5) Atomic energy-related equipment

(6) Seabed equipment

(7) Transportation control equipment

(8) Public information-processing equipment

(9) Military equipment

(10) Electric heating apparatus, burning equipment

(11) Disaster prevention/crime prevention equipment

(12) Safety equipment

(13) Other applications that are not considered general-purpose applications

When designing your equipment even for general-purpose applications, you are kindly requested to take into consideration securing protection circuit/device or providing backup circuits in your equipment.

Ultra High Voltage Ceramic Capacitors

Product compatible with RoHS directive

With metal terminals

For distribution lines

Overview of the FD/MD Series

FEATURES

- FD Series (rated voltage Eac: 10 to 25 kV) and MD Series (rated voltage Eac: 20 kV) available.
- Molded type metal screw terminals for easy mounting.
- Uses high-reliability mold resin.

APPLICATION

High-voltage power circuits (for medical devices, lithography, industrial analyzers)

OPERATING TEMPERATURE RANGE, PRODUCT WEIGHT

Part No.	Temperature range		Individual weight (g)
	Operating temperature	Storage temperature	
	(°C)	(°C)	
FD-9A	-30 to +85	-30 to +85	10
FD-10A	-30 to +85	-30 to +85	16
FD-11A	-30 to +85	-30 to +85	30
FD-12A	-30 to +85	-30 to +85	54
FD-16A	-30 to +85	-30 to +85	31
FD-18A	-30 to +85	-30 to +85	71
FD-20A	-30 to +85	-30 to +85	141
FD-22A	-30 to +85	-30 to +85	67
FD-24A	-30 to +85	-30 to +85	127
FD-33A	-30 to +85	-30 to +85	107
FD-36A	-30 to +85	-30 to +85	117
MD-1A	-30 to +85	-30 to +85	101

○ RoHS Directive Compliant Product: See the following for more details related to RoHS Directive compliant products. <http://www.tdk.co.jp/rohs/>

• All specifications are subject to change without notice.

FD series

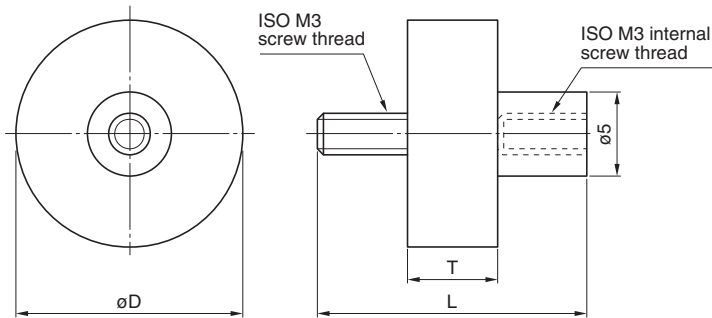
FD-9A to FD-36A



SHAPE & DIMENSIONS

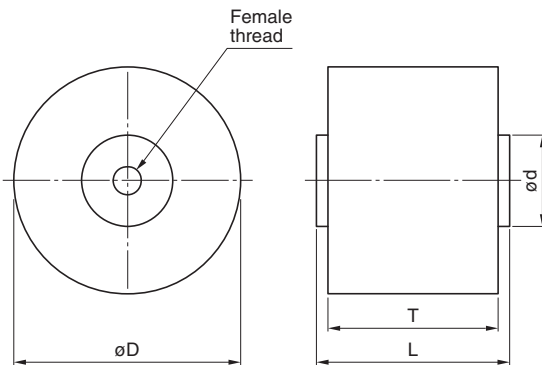
Molded type

FD-9A to FD-16A



Part No.	$\varnothing D$	T	L
FD-9A	16	15	27
FD-10A	21	15	27
FD-11A	28	15	27
FD-12A	38	15	27
FD-16A	26	18.5	30.5

FD-18A to FD-36A



Part No.	$\varnothing D$	T	L	$\varnothing d$	Internal screw
FD-18A	34	23.5	27.5	10	ISO M4
FD-20A	48	23.5	27.5	15	ISO M5
FD-22A	30	29	33	10	ISO M4
FD-24A	40	29	33	15	ISO M5
FD-33A	34	35	39	10	ISO M4
FD-36A	48	35	39	15	ISO M5

MARKING

Item	Marking example
1. Part No.	1 → FD-22A
2. Nominal capacitance and tolerance code	2 → 251K
3. Rated voltage	3 → AC20kV
4. Manufacturer's name (TDK or TDK logo mark)	4 → TDK
5. Lot No.	5 → 1234

FD series **FD-9A to FD-36A**

■ ELECTRICAL CHARACTERISTICS

□ CHARACTERISTICS SPECIFICATION TABLE

Class 2 (Temperature Stable)

Temperature Characteristics: Y5P(±10%)

Part No.	Rated voltage	Capacitance	Insulation class	Withstanding voltage	Dissipation factor (tanδ)	Insulation resistance	AC Corona starting voltage
	(kV)	(pF)±10% nom.		(kV) [1min, in insulating liquid]	(%) max.	(MΩ) min.	(kV) min. [3PC*]
FD-9A	10	100	—	15	0.2	10000	12
FD-10A	10	250	—	15	0.2	10000	12
FD-11A	10	500	—	15	0.2	10000	12
FD-12A	10	1,000	—	15	0.2	10000	12
FD-16A	13	250	—	20	0.2	10000	16
FD-18A	13	500	—	20	0.2	10000	16
FD-20A	13	1,000	—	20	0.2	10000	16
FD-22A	20	250	6A	30	0.2	10000	24
FD-24A	20	500	6A	30	0.2	10000	24
FD-33A	25	250	10A	40	0.2	10000	32
FD-36A	25	500	10A	40	0.2	10000	32

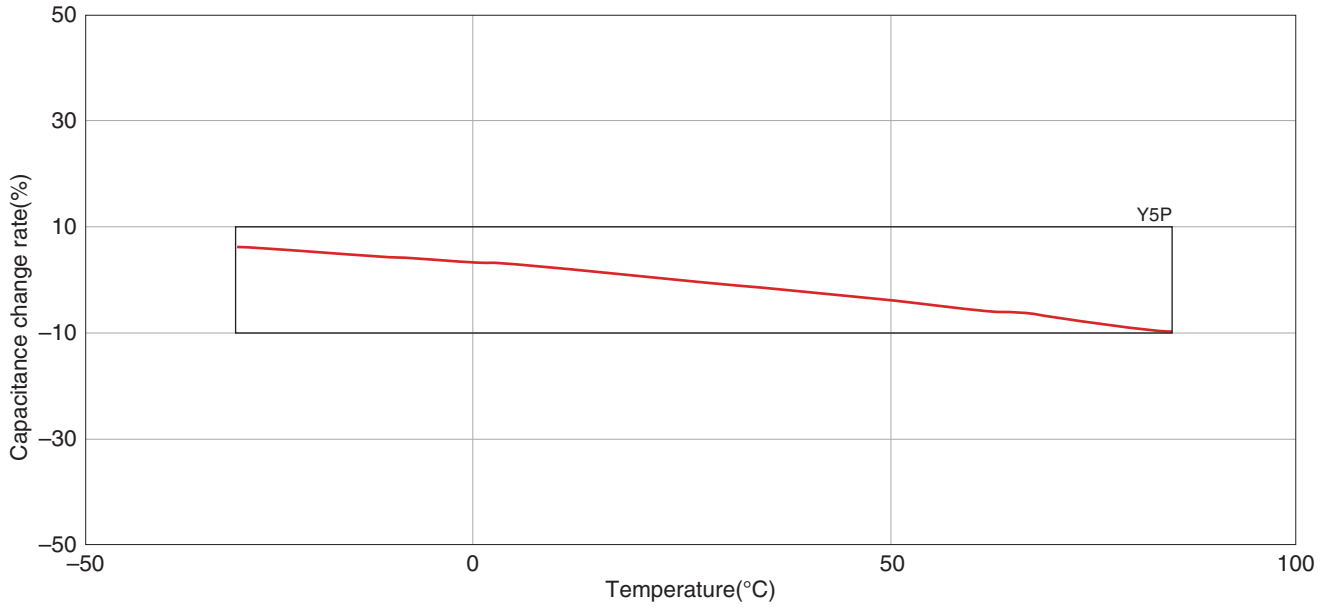
* PC : Pico coulomb.

• Secondary-molded AU type is also available.

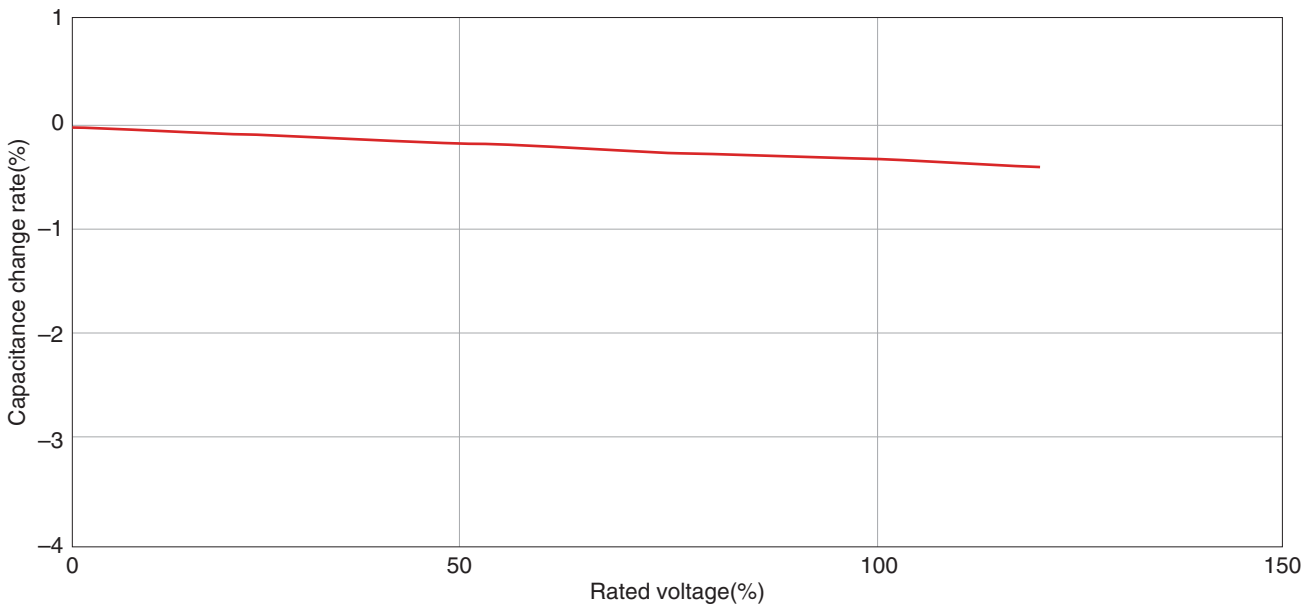
FD series **FD-9A to FD-36A**

■ ELECTRICAL CHARACTERISTICS

□ CAPACITANCE VS. TEMPERATURE CHARACTERISTICS



□ CAPACITANCE VS. AC VOLTAGE CHARACTERISTICS



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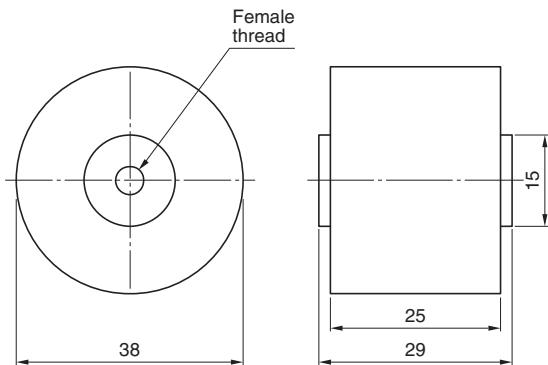
MD series

MD-1A



SHAPE & DIMENSIONS

Molded type



MARKING

Item	Marking example
1. Part No.	1 → MD-1A
2. Nominal capacitance and tolerance code	2 → 5 0 0 J
3. Rated voltage	3 → AC20kV
4. Manufacturer's name (TDK or TDK logo mark)	4 → T D K
5. Lot No.	5 → 1 2 3 4

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MD series MD-1A

■ ELECTRICAL CHARACTERISTICS

□ CHARACTERISTICS SPECIFICATION TABLE

Class 1 (Temperature Compensating)

Temperature Characteristics: C0H(± 60 ppm)

Part No.	Rated voltage (kV)	Capacitance (pF) $\pm 10\%$ nom.	Insulation class	Withstanding voltage (kV) [1min, in insulating liquid]	Dissipation factor ($\tan\delta$) (%) max.	Insulation resistance (M Ω) min.	AC Corona starting voltage (kV) min. [3PC*]
MD-1A	20	50	6A	30	0.2	10000	24

* PC : Pico coulomb.