TDK

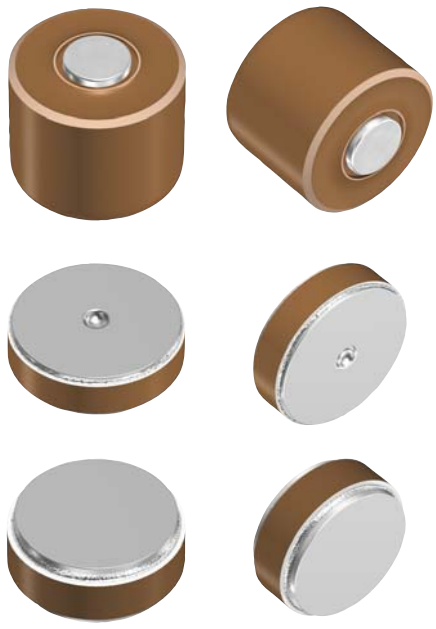
February 2017

Ultra high voltage ceramic capacitors

With metal terminals

For GCB/GIS

TSF/H/GA series



⚠ REMINDERS FOR USING THESE PRODUCTS

(1) During transportation and storage
Do not transport or store where the prodcuts will be exposed to high temperature or high humidity.
Do not expose to poisonous gases such as H_2SO_4, HCl, or HNO_3.
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 prodcuts 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 (cars, 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 GCB/GIS

Overview of TSF/H/GA series

FEATURES

- TSF series with molded metal terminals (rated voltage Eac: 20 kV), H series with non-insulated metal terminals (rated voltage Eac: 8 kV), and GA series with non-insulated metal terminals (rated voltage Eac: 10 kV) available
- Strong impulse voltage
- High capacitance and excellent temperature characteristics
- Low-loss and low distortion factor
- Excellent voltage-capacitance characteristics

APPLICATION

Circuit breakers for gas insulation switchgears (supporting SF6 gas)

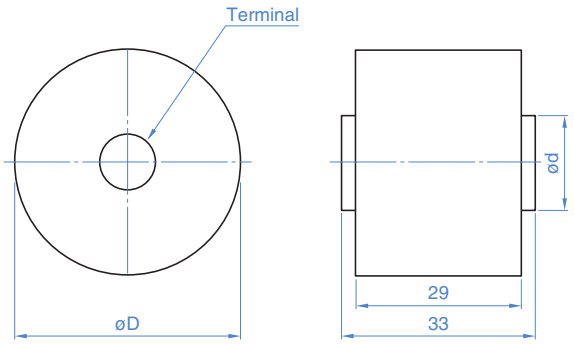
OPERATING TEMPERATURE RANGE, PRODUCT WEIGHT

Part No.	Sub part No.	Temperature range		Individual weight
		Operating temperature (°C)	Storage temperature (°C)	(g)
TSF-40C	60734ZT112J4DA	–30 to +85	–30 to +85	149
TSF-30	60722ZT401K4DAA	–30 to +85	–30 to +85	80
H-11	60739ZT292K4AA	–20 to +70	–20 to +70	79
GA-14	60739ZT172K4AA	–20 to +70	–20 to +70	124

- RoHS Directive Compliant Product: See the following for more details.https://product.tdk.com/info/en/environment/rohs/index.html

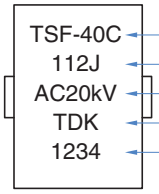
TSF series

SHAPE & DIMENSIONS



Molded with epoxide resin; alumina filler.

MARKINGS



Part No.
Nominal capacitance and tolerance code
Rated voltage
Manufacturer's name (TDK or TDK logo mark)
Lot No.

Part No.	Sub part No.	øD (mm)	ød (mm)
TSF-40C	60734ZT112J4DA	40	15
TSF-30	60722ZT401K4DAA	30	10

ELECTRICAL CHARACTERISTICS

CHARACTERISTICS SPECIFICATION TABLES

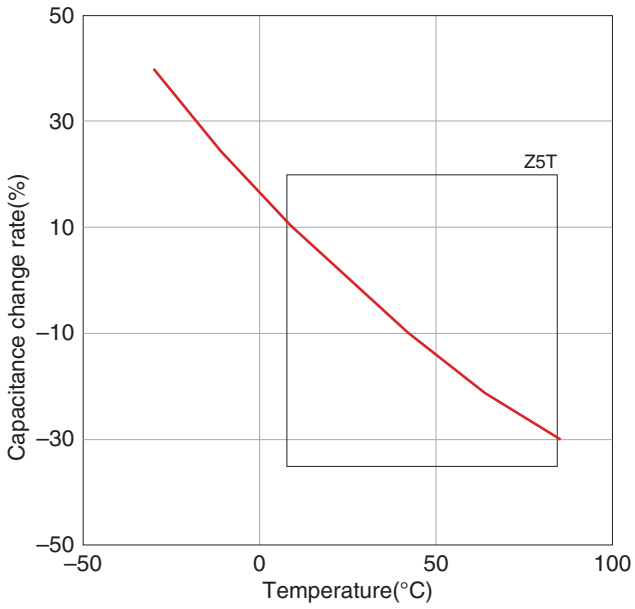
Class 2 (Temperature stable)

Temperature characteristics: Z5T(+10 to +85°C, +22/–33%)

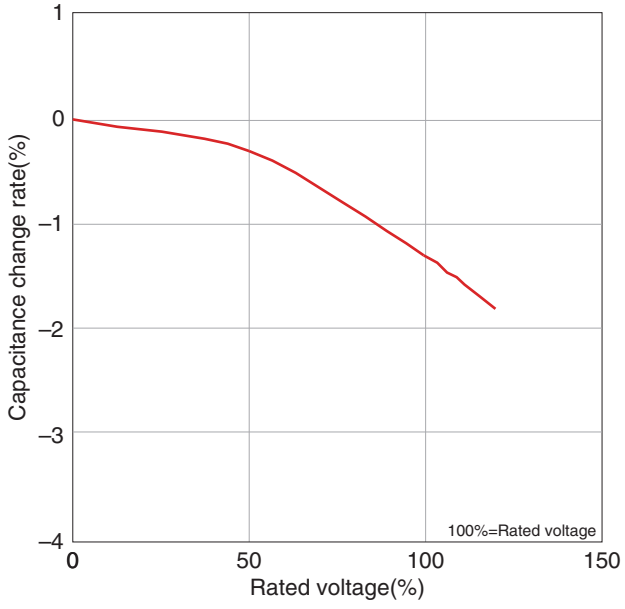
Part No.	Sub part No.	Rated voltage (kV)	Capacitance (pF)	Withstanding voltage (kV)	Dissipation factor (tanδ) (%) max.	Insulation resistance (MΩ) min.	AC corona starting voltage [3PC*] (kV) min.
TSF-40C	60734ZT112J4DA	20	1080±10%	42	0.2	100000	25
TSF-30	60722ZT401K4DAA	20	400±10%	42	0.2	100000	25

* PC : Pico coulomb.

CAPACITANCE VS. TEMPERATURE CHARACTERISTICS



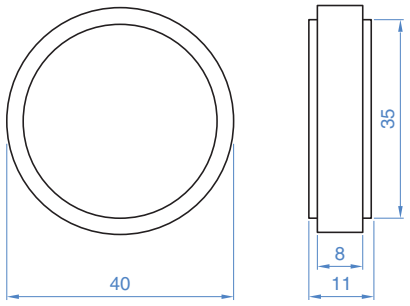
CAPACITANCE VS. AC VOLTAGE CHARACTERISTICS



H series

SHAPE & DIMENSIONS

Non-insulated type



Dimensions in mm

ELECTRICAL CHARACTERISTICS

CHARACTERISTICS SPECIFICATION TABLES

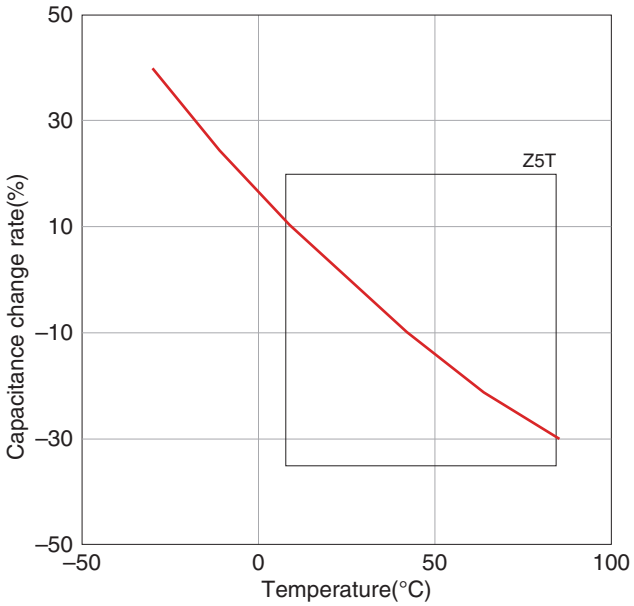
Class 2 (Temperature stable)

Temperature characteristics: Z5T(+10 to +85°C, +22/–33%)

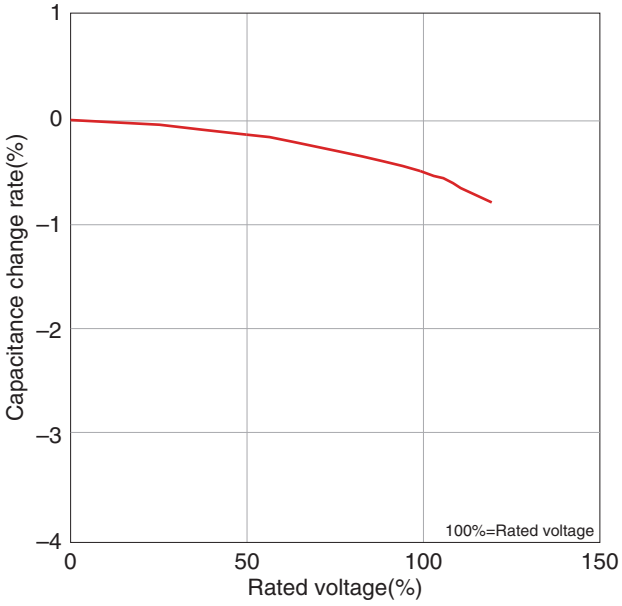
Part No.	Sub part No.	Rated voltage (kV)	Capacitance (pF)	Withstanding voltage (kV)	Dissipation factor (tanδ) (%) max.	Insulation resistance (MΩ) min.	AC corona starting voltage [3PC*] (kV) min.
H-11	60739ZT292K4AA	8	2900±10%	16	0.2	100000	8

* PC：Pico coulomb.

CAPACITANCE VS. TEMPERATURE CHARACTERISTICS



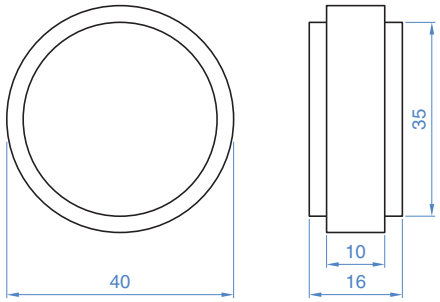
CAPACITANCE VS. AC VOLTAGE CHARACTERISTICS



GA series

SHAPE & DIMENSIONS

Non-insulated type



Dimensions in mm

ELECTRICAL CHARACTERISTICS

CHARACTERISTICS SPECIFICATION TABLES

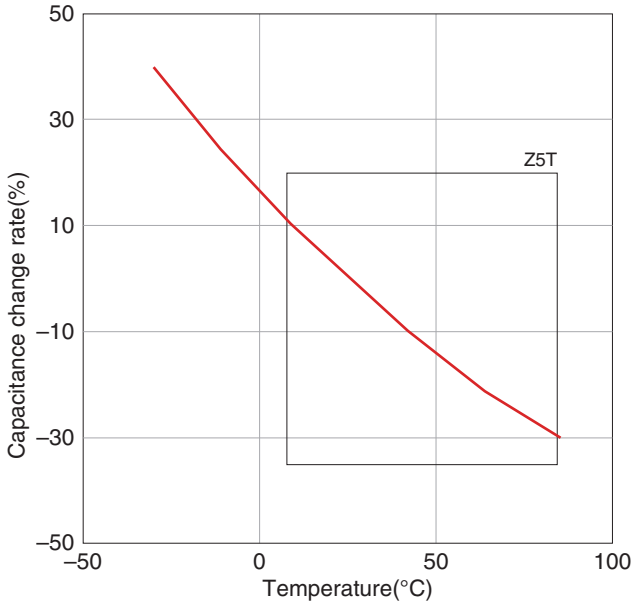
Class 2 (Temperature stable)

Temperature characteristics: Z5T(+10 to +85°C, +22/–33%)

Part No.	Sub part No.	Rated voltage (kV)	Capacitance (pF)	Withstanding voltage (kV)	Dissipation factor (tanδ) (%) max.	Insulation resistance (MΩ) min.	AC corona starting voltage [3PC*] (kV) min.
GA-14	60739ZT172K4AA	10	1700±10%	20	0.2	100000	10

* PC：Pico coulomb.

CAPACITANCE VS. TEMPERATURE CHARACTERISTICS



CAPACITANCE VS. AC VOLTAGE CHARACTERISTICS