

## Ultra high voltage ceramic capacitors For high voltage power supplies/lasers

# UHV series



### FEATURES

- Lineup of rated voltage Edc: 20 to 50kV
- Low ESR, low loss and low distortion factor
- Molded type metal screw terminals for easy mounting
- Uses high-reliability mold resin

### APPLICATION

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

### PART NUMBER CONSTRUCTION

| 607                                   | 11            | ZT                             | 201                                                | K                     | 4D                                       | D                          | A                    |
|---------------------------------------|---------------|--------------------------------|----------------------------------------------------|-----------------------|------------------------------------------|----------------------------|----------------------|
| Product category                      | Internal code | Temperature characteristic     | Nominal capacitance                                | Capacitance tolerance | Rated voltage                            | Voltage classification     | Insulation structure |
| Ultra high voltage ceramic capacitors |               | ZT Z5T(+10 to +85°C, +22,-33%) | 201 200pF<br>941 940pF<br>252 2500pF<br>402 4000pF | K ±10%                | 4D 20kV<br>4F 30kV<br>4G 40kV<br>4H 50kV | D DC voltage specification | A Mold type          |

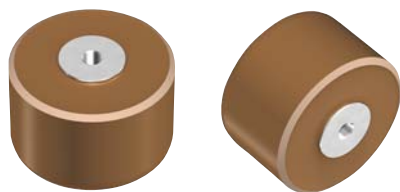
\* Please refer to P-3 about the product dimensions.

### OPERATING TEMPERATURE RANGE

| Series | Operating temperature(°C) | Storage temperature(°C) |
|--------|---------------------------|-------------------------|
| UHV    | -30 to +85                | -30 to +85              |

The maximum operating temperature of +85°C includes capacitor self-generated heat of up to 20°C.

### PRODUCT APPEARANCE



# UHV series

## ELECTRICAL CHARACTERISTICS

### CHARACTERISTICS SPECIFICATION TABLE

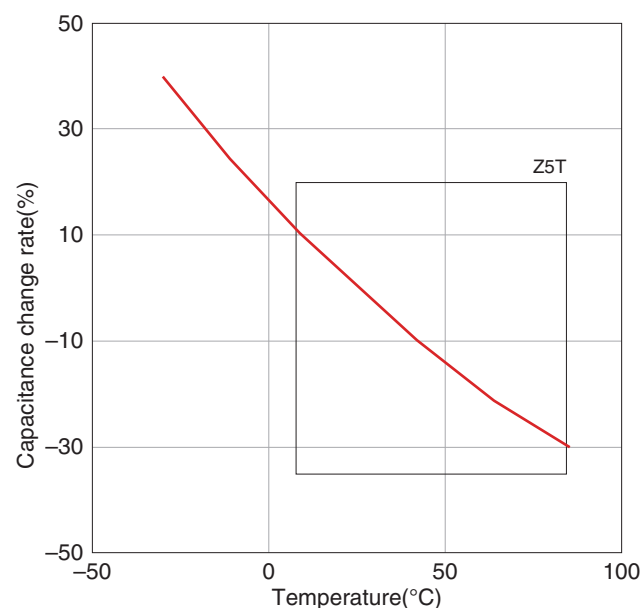
Class 2 (Temperature stable)

Temperature characteristic: Z5T (+10 to +85°C, +22,33%)

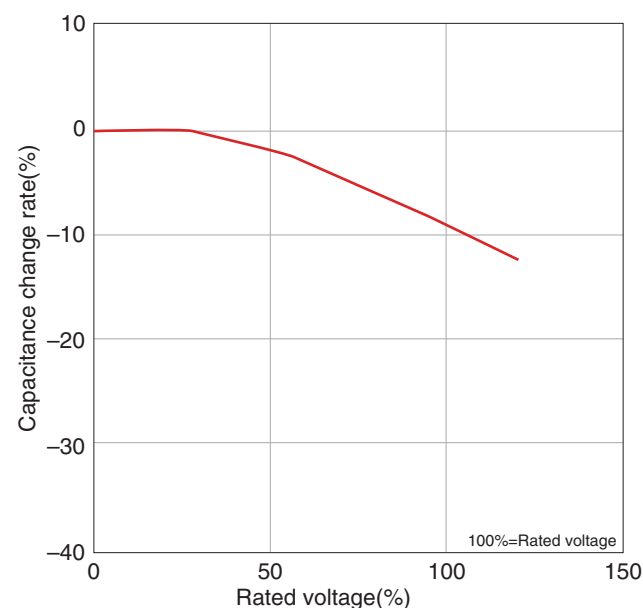
| Part numbers                    | Sub part numbers | Rated voltage<br>(kVDC) | Capacitance<br>(pF) | Withstanding voltage<br>[1min. insulating liquid]<br>(kVDC) | Dissipation factor(tanδ)<br>(%) max. | Insulation resistance<br>(MΩ) min. | AC corona starting voltage<br>[3pC* ]<br>(kVAC) min. |
|---------------------------------|------------------|-------------------------|---------------------|-------------------------------------------------------------|--------------------------------------|------------------------------------|------------------------------------------------------|
| <a href="#">60711ZT201K4DDA</a> | UHV-221A         | 20                      | 200±10%             | 30                                                          | 0.1                                  | 10,000                             | 10                                                   |
| <a href="#">60716ZT401K4DDA</a> | UHV-222A         | 20                      | 400±10%             | 30                                                          | 0.1                                  | 10,000                             | 10                                                   |
| <a href="#">60721ZT701K4DDA</a> | UHV-223A         | 20                      | 700±10%             | 30                                                          | 0.1                                  | 10,000                             | 10                                                   |
| <a href="#">60725ZT102K4DDA</a> | UHV-224A         | 20                      | 1000±10%            | 30                                                          | 0.1                                  | 10,000                             | 10                                                   |
| <a href="#">60729ZT142K4DDA</a> | UHV-1A           | 20                      | 1400±10%            | 30                                                          | 0.1                                  | 10,000                             | 10                                                   |
| <a href="#">60739ZT252K4DDA</a> | UHV-2A           | 20                      | 2500±10%            | 30                                                          | 0.1                                  | 10,000                             | 10                                                   |
| <a href="#">60750ZT402K4DDA</a> | UHV-3A           | 20                      | 4000±10%            | 30                                                          | 0.1                                  | 10,000                             | 10                                                   |
| <a href="#">60713ZT201K4FDA</a> | UHV-231A         | 30                      | 200±10%             | 45                                                          | 0.1                                  | 10,000                             | 15                                                   |
| <a href="#">60719ZT401K4FDA</a> | UHV-232A         | 30                      | 400±10%             | 45                                                          | 0.1                                  | 10,000                             | 15                                                   |
| <a href="#">60725ZT701K4FDA</a> | UHV-233A         | 30                      | 700±10%             | 45                                                          | 0.1                                  | 10,000                             | 15                                                   |
| <a href="#">60729ZT941K4FDA</a> | UHV-4A           | 30                      | 940±10%             | 45                                                          | 0.1                                  | 10,000                             | 15                                                   |
| <a href="#">60739ZT172K4FDA</a> | UHV-5A           | 30                      | 1700±10%            | 45                                                          | 0.1                                  | 10,000                             | 15                                                   |
| <a href="#">60750ZT272K4FDA</a> | UHV-6A           | 30                      | 2700±10%            | 45                                                          | 0.1                                  | 10,000                             | 15                                                   |
| <a href="#">60711ZT101K4GDA</a> | UHV-241A         | 40                      | 100±10%             | 60                                                          | 0.1                                  | 10,000                             | 20                                                   |
| <a href="#">60716ZT201K4GDA</a> | UHV-242A         | 40                      | 200±10%             | 60                                                          | 0.1                                  | 10,000                             | 20                                                   |
| <a href="#">60722ZT401K4GDA</a> | UHV-243A         | 40                      | 400±10%             | 60                                                          | 0.1                                  | 10,000                             | 20                                                   |
| <a href="#">60729ZT701K4GDA</a> | UHV-7A           | 40                      | 700±10%             | 60                                                          | 0.1                                  | 10,000                             | 20                                                   |
| <a href="#">60739ZT132K4GDA</a> | UHV-8A           | 40                      | 1300±10%            | 60                                                          | 0.1                                  | 10,000                             | 20                                                   |
| <a href="#">60750ZT202K4GDA</a> | UHV-9A           | 40                      | 2000±10%            | 60                                                          | 0.1                                  | 10,000                             | 20                                                   |
| <a href="#">60712ZT101K4HDA</a> | UHV-251A         | 50                      | 100±10%             | 75                                                          | 0.1                                  | 10,000                             | 25                                                   |
| <a href="#">60718ZT201K4HDA</a> | UHV-252A         | 50                      | 200±10%             | 75                                                          | 0.1                                  | 10,000                             | 25                                                   |
| <a href="#">60726ZT401K4HDA</a> | UHV-253A         | 50                      | 400±10%             | 75                                                          | 0.1                                  | 10,000                             | 25                                                   |
| <a href="#">60729ZT561K4HDA</a> | UHV-10A          | 50                      | 560±10%             | 75                                                          | 0.1                                  | 10,000                             | 25                                                   |
| <a href="#">60739ZT102K4HDA</a> | UHV-11A          | 50                      | 1000±10%            | 75                                                          | 0.1                                  | 10,000                             | 25                                                   |
| <a href="#">60750ZT172K4HDA</a> | UHV-12A          | 50                      | 1700±10%            | 75                                                          | 0.1                                  | 10,000                             | 25                                                   |

\* pC : Pico coulomb

### TEMPERATURE CHARACTERISTIC

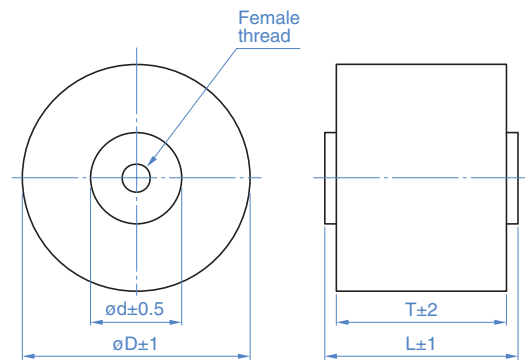


### DC VOLTAGE CHARACTERISTIC



# UHV series

## SHAPE & DIMENSIONS



Effective female thread depth 5+1/0mm

## MARKINGS

|        |                                            |
|--------|--------------------------------------------|
| UHV-5A | Sub part number                            |
| 172K   | Nominal capacitance and tolerance code     |
| DC30kV | Rated voltage                              |
| TDK    | Manufacturer's name (TDK or TDK logo mark) |
| 1234   | Lot number                                 |

| Part numbers                    | Sub part numbers | $\phi D$<br>(mm) | $\phi d$<br>(mm) | T<br>(mm) | L<br>(mm) | Internal screw |
|---------------------------------|------------------|------------------|------------------|-----------|-----------|----------------|
| <a href="#">60711ZT201K4DDA</a> | UHV-221A         | 20               | 6                | 19        | 23        | ISO M4         |
| <a href="#">60716ZT401K4DDA</a> | UHV-222A         | 25               | 8                | 19        | 23        | ISO M4         |
| <a href="#">60721ZT701K4DDA</a> | UHV-223A         | 30               | 10               | 19        | 23        | ISO M4         |
| <a href="#">60725ZT102K4DDA</a> | UHV-224A         | 34               | 10               | 19        | 23        | ISO M4         |
| <a href="#">60729ZT142K4DDA</a> | UHV-1A           | 38               | 15               | 19        | 23        | ISO M5         |
| <a href="#">60739ZT252K4DDA</a> | UHV-2A           | 48               | 15               | 19        | 23        | ISO M5         |
| <a href="#">60750ZT402K4DDA</a> | UHV-3A           | 60               | 15               | 19        | 23        | ISO M5         |
| <a href="#">60713ZT201K4FDA</a> | UHV-231A         | 25               | 8                | 22        | 26        | ISO M4         |
| <a href="#">60719ZT401K4FDA</a> | UHV-232A         | 30               | 10               | 22        | 26        | ISO M4         |
| <a href="#">60725ZT701K4FDA</a> | UHV-233A         | 34               | 10               | 22        | 26        | ISO M4         |
| <a href="#">60729ZT941K4FDA</a> | UHV-4A           | 38               | 15               | 22        | 26.2      | ISO M5         |
| <a href="#">60739ZT172K4FDA</a> | UHV-5A           | 48               | 15               | 22        | 26        | ISO M5         |
| <a href="#">60750ZT272K4FDA</a> | UHV-6A           | 60               | 15               | 22        | 26        | ISO M5         |
| <a href="#">60711ZT101K4GDA</a> | UHV-241A         | 20               | 6                | 28        | 32        | ISO M4         |
| <a href="#">60716ZT201K4GDA</a> | UHV-242A         | 25               | 8                | 28        | 32        | ISO M4         |
| <a href="#">60722ZT401K4GDA</a> | UHV-243A         | 34               | 10               | 28        | 32        | ISO M4         |
| <a href="#">60729ZT701K4GDA</a> | UHV-7A           | 38               | 15               | 28        | 32        | ISO M5         |
| <a href="#">60739ZT132K4GDA</a> | UHV-8A           | 48               | 15               | 28        | 32        | ISO M5         |
| <a href="#">60750ZT202K4GDA</a> | UHV-9A           | 60               | 15               | 28        | 32        | ISO M5         |
| <a href="#">60712ZT101K4HDA</a> | UHV-251A         | 20               | 6                | 31        | 35        | ISO M4         |
| <a href="#">60718ZT201K4HDA</a> | UHV-252A         | 30               | 10               | 31        | 35        | ISO M4         |
| <a href="#">60726ZT401K4HDA</a> | UHV-253A         | 34               | 10               | 31        | 35        | ISO M4         |
| <a href="#">60729ZT561K4HDA</a> | UHV-10A          | 38               | 15               | 31        | 35        | ISO M5         |
| <a href="#">60739ZT102K4HDA</a> | UHV-11A          | 48               | 15               | 31        | 35.2      | ISO M5         |
| <a href="#">60750ZT172K4HDA</a> | UHV-12A          | 60               | 15               | 31        | 35        | ISO M5         |

# REMINDERS FOR USING THESE PRODUCTS

Before using these products, be sure to request the delivery specifications.

## SAFETY REMINDERS

Please pay sufficient attention to the warnings for safe designing when using this products.

### REMINDERS

#### (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 H<sub>2</sub>SO<sub>4</sub>, HCl, or HNO<sub>3</sub>.
- 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.
- Please contact us when using in SF<sub>6</sub> gas.

#### (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 (excepting Pharmaceutical Affairs Law classification Class1,2)
- (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.