

# High Voltage Ceramic DC Disc Capacitors

## 10 kV<sub>DC</sub> and 15 kV<sub>DC</sub>



### FEATURES

- Low losses
- High capacitance in small sizes
- High stability
- Radial leads
- Ceramic singlelayer capacitor
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### APPLICATIONS

- TV and monitors
- SMPS
- DC and pulse high voltage
- X-ray equipment

### DESIGN

The capacitors consist of a ceramic disc of which both sides are silver-plated. Connection leads are made of tinned copper having diameters of 0.032" (0.81 mm).

The capacitors may be supplied with straight leads having lead spacing of 0.375" (9.5 mm), 0.500" (12.7 mm) or 0.750" (19.2 mm).

Coating is made of flame retardant epoxy resin in accordance with "UL 94 V-0".

### CAPACITANCE RANGE

100 pF to 3300 pF

### DIELECTRIC STRENGTH BETWEEN LEADS

|                     |                              |
|---------------------|------------------------------|
| 10 kV <sub>DC</sub> | 15 000 V <sub>DC</sub> , 2 s |
| 15 kV <sub>DC</sub> | 24 000 V <sub>DC</sub> , 2 s |
|                     | (in dielectric fluid)        |

### CERAMIC DIELECTRIC

T3M (Class 1)  
X5F, Y5R, Y5U, Z5U (Class 2)

### QUICK REFERENCE DATA

| DESCRIPTION                | VALUE       |        |                    |        |
|----------------------------|-------------|--------|--------------------|--------|
| Ceramic Class              | 1           |        | 2                  |        |
| Ceramic Dielectric         | T3M (N4700) |        | X5F, Y5R, Y5U, Z5U |        |
| Voltage (V <sub>DC</sub> ) | 10 000      | 15 000 | 10 000             | 15 000 |
| Min. Capacitance (pF)      | 250         | 100    | 100                | 100    |
| Max. Capacitance (pF)      | 1000        | 750    | 3300               | 2500   |
| Mounting                   | Radial      |        |                    |        |

### INSULATION RESISTANCE

Min. 1000 ΩF or 200 000 MΩ

### TOLERANCE ON CAPACITANCE

± 20 % or + 80 %/- 20 %

### DISSIPATION FACTOR

0.2 % max. at 1 kHz; 1 V (Class 1)  
2.0 % max. at 1 kHz; 1 V (Class 2)

### CATEGORY TEMPERATURE RANGE

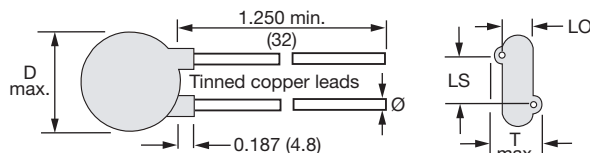
- 25 °C to + 85 °C

### CLIMATIC CATEGORY ACC. TO EN 60068-1

25/85/21

### OPERATING TEMPERATURE RANGE

- 25 °C to + 105 °C

**DIMENSIONS** in inches (millimeters)

**LEAD OFFSET "LO" (nominal)**

|                     |            |
|---------------------|------------|
| 10 kV <sub>DC</sub> | 0.20 (5.0) |
| 15 kV <sub>DC</sub> | 0.30 (7.6) |

**ORDERING INFORMATION, CERAMIC 10 kV<sub>DC</sub>**

| C<br>(pF)   | TOL.<br>(%) | D<br>DIAMETER<br>INCH (mm) | T<br>THICKNESS<br>INCH (mm) | LS<br>LEAD SPACE<br>INCH (mm) | AWG | WIRE SIZE<br>INCH (mm) | ORDERING<br>CODE |
|-------------|-------------|----------------------------|-----------------------------|-------------------------------|-----|------------------------|------------------|
| T3M (N4700) |             |                            |                             |                               |     |                        |                  |
| 250         | ± 20        | 0.490 (12.4)               | 0.290 (7.4)                 | 0.375 (9.5)                   | 20  | 0.032 (0.81)           | 615R100GATT25    |
| 500         |             | 0.680 (17.3)               | 0.320 (8.1)                 | 0.500 (12.7)                  |     |                        | 615R100GATT50    |
| 680         |             | 0.750 (19.1)               | 0.300 (7.6)                 |                               |     |                        | 615R100GATT68    |
| 820         |             | 0.810 (20.6)               |                             |                               |     |                        | 615R100GATT82    |
| 1000        |             | 0.980 (24.9)               | 0.320 (8.1)                 |                               |     |                        | 615R100GATD10    |
| X5F         |             |                            |                             |                               |     |                        |                  |
| 100         | ± 20        | 0.680 (17.3)               | 0.370 (9.4)                 | 0.500 (12.7)                  | 20  | 0.032 (0.81)           | 615R100GAT10     |
| 250         |             |                            | 0.300 (7.6)                 |                               |     |                        | 615R100GAT25     |
| 500         |             |                            | 0.345 (8.8)                 |                               |     |                        | 615R100GAT50     |
| Y5R         |             |                            |                             |                               |     |                        |                  |
| 100         | ± 20        | 0.490 (12.4)               | 0.320 (8.1)                 | 0.375 (9.5)                   | 20  | 0.032 (0.81)           | 615R100GAST10    |
| 250         |             |                            | 0.340 (8.6)                 |                               |     |                        | 615R100GAST25    |
| 500         |             |                            | 0.310 (7.9)                 |                               |     |                        | 615R100GAST50    |
| 1000        |             | 0.750 (19.1)               | 0.320 (8.1)                 | 0.500 (12.7)                  |     |                        | 615R100GAD10     |
| 2500        |             | 0.980 (24.9)               | 0.330 (8.4)                 |                               |     |                        | 615R100GATD25    |
| Y5U         |             |                            |                             |                               |     |                        |                  |
| 1000        | + 80/- 20   | 0.680 (17.3)               | 0.330 (8.4)                 | 0.500 (12.7)                  | 20  | 0.032 (0.81)           | 615R100GASD10    |
| Z5U         |             |                            |                             |                               |     |                        |                  |
| 2500        | + 80/- 20   | 0.750 (19.1)               | 0.350 (8.9)                 | 0.500 (12.7)                  | 20  | 0.032 (0.81)           | 615R100GAD25     |
| 3300        |             | 0.980 (24.9)               | 0.390 (9.9)                 |                               |     |                        | 615R100GAD33     |

**ORDERING INFORMATION, CERAMIC 15 kV<sub>DC</sub>**

| C<br>(pF)          | TOL.<br>(%) | D<br>DIAMETER<br>INCH (mm) | T<br>THICKNESS<br>INCH (mm) | LS<br>LEAD SPACE<br>INCH (mm) | WIRE SIZE |              | ORDERING<br>CODE |
|--------------------|-------------|----------------------------|-----------------------------|-------------------------------|-----------|--------------|------------------|
| AWG      INCH (mm) |             |                            |                             |                               |           |              |                  |
| T3M (N4700)        |             |                            |                             |                               |           |              |                  |
| 100                | ± 20        | 0.490 (12.4)               | 0.470 (11.9)                | 0.500 (12.7)                  | 20        | 0.032 (0.81) | 615R150GATT10    |
| 250                |             | 0.670 (17.0)               | 0.460 (11.7)                | 0.750 (19.1)                  |           |              | 615R150GATT25    |
| 390                |             | 0.750 (19.1)               | 0.425 (10.8)                |                               |           |              | 615R150GATT39    |
| 500                |             | 0.810 (20.6)               | 0.410 (10.4)                |                               |           |              | 615R150GATT50    |
| 750                |             | 1.063 (27.0)               | 0.430 (10.9)                |                               |           |              | 615R150GATT75    |
| X5F                |             |                            |                             |                               |           |              |                  |
| 100                | ± 20        | 0.670 (17.0)               | 0.430 (10.9)                | 0.750 (19.1)                  | 20        | 0.032 (0.81) | 615R150GAT10     |
| 250                |             |                            | 0.455 (11.6)                |                               |           |              | 615R150GAT25     |
| Y5R                |             |                            |                             |                               |           |              |                  |
| 100                | ± 20        | 0.490 (12.4)               | 0.490 (12.4)                | 0.500 (12.7)                  | 20        | 0.032 (0.81) | 615R150GAST10    |
| 250                |             |                            | 0.480 (12.2)                | 0.750 (19.1)                  |           |              | 615R150GAST25    |
| 500                |             | 0.670 (17.0)               | 0.450 (11.4)                |                               |           |              | 615R150GAT50     |
| 1000               |             | 0.980 (24.9)               | 0.460 (11.7)                |                               |           |              | 615R150GATD10    |
| Y5U                |             |                            |                             |                               |           |              |                  |
| 500                | + 80/- 20   | 0.490 (12.4)               | 0.375 (9.5)                 | 0.500 (12.7)                  | 20        | 0.032 (0.81) | 615R150GAST50    |
| 1000               |             | 0.670 (17.0)               | 0.420 (10.7)                | 0.750 (19.1)                  |           |              | 615R150GAD10     |
| Z5U                |             |                            |                             |                               |           |              |                  |
| 2200               | + 80/- 20   | 0.980 (24.9)               | 0.510 (13.0)                | 0.750 (19.1)                  | 20        | 0.032 (0.81) | 615R150GAD22     |
| 2500               |             |                            | 0.450 (11.4)                |                               |           |              | 615R150GAD25     |



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Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: [ocean@oceanchips.ru](mailto:ocean@oceanchips.ru)

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А