

# 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

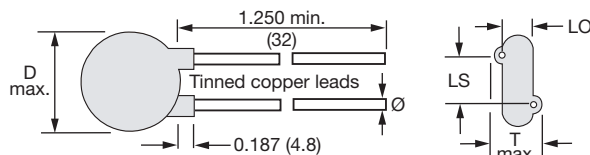
- 25 °C to + 85 °C

### 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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