

High Voltage Ceramic DC Disc Capacitors 10 kV_{DC} and 15 kV_{DC}


RoHS
COMPLIANT

FEATURES

- 20 kV rated voltage available on request
- 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

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_{DC} 15 000 V_{DC}, 2 s
 15 kV_{DC} 24 000 V_{DC}, 2 s
 (in dielectric fluid)

CERAMIC DIELECTRIC

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

DESIGN SUPPORT TOOLS

[click logo to get started](#)



| QUICK REFERENCE DATA | | | | |
|----------------------------|-------------|--------|--------------------|--------|
| DESCRIPTION | VALUE | | | |
| Ceramic Class | 1 | | 2 | |
| Ceramic Dielectric | T3M (N4700) | | X5F, Y5R, Y5U, Z5U | |
| Voltage (V _{DC}) | 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

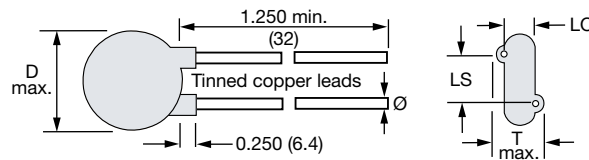
-25 °C to +85 °C

CLIMATIC CATEGORY ACC. TO EN 60068-1

25/85/21

OPERATING TEMPERATURE RANGE

-25 °C to +105 °C

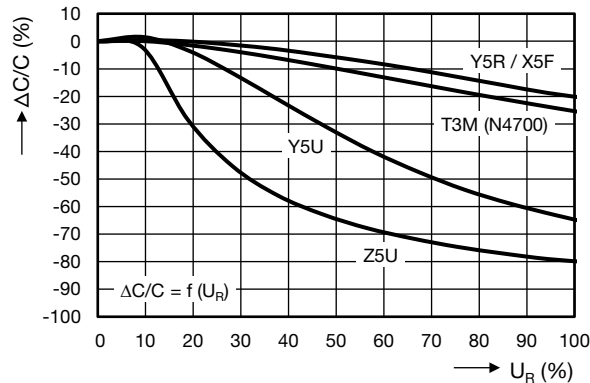
DIMENSIONS in inches (millimeters)

ORDERING INFORMATION, CERAMIC 10 kV_{DC}

| C (pF) | TOL. (%) | D _{max.} DIAMETER INCH (mm) | T _{max.} THICKNESS INCH (mm) | LS LEAD SPACE INCH (mm) ± 0.040" (± 1 mm) | LO LEAD OFFSET INCH (mm) ± 0.020" (± 0.5 mm) | WIRE SIZE | | ORDERING CODE |
|--------------------|-------------|--|---|---|--|-----------|--------------|------------------|
| | | | | | | AWG | INCH (mm) | |
| T3M (N4700) | | | | | | | | |
| 250 | ± 20 | 0.490 (12.4) | 0.290 (7.4) | 0.375 (9.5) | 0.193 (4.9) | 20 | 0.032 (0.81) | 615R100GATT25 |
| 500 | | 0.680 (17.3) | 0.272 (6.9) | 0.500 (12.7) | 0.173 (4.4) | | | 615R100GATT50 |
| 680 | | 0.750 (19.1) | 0.300 (7.6) | | 0.181 (4.6) | | | 615R100GATT68 |
| 820 | | 0.810 (20.6) | 0.300 (7.6) | | 0.181 (4.6) | | | 615R100GATT82 |
| 1000 | | 0.980 (24.9) | 0.320 (8.1) | 0.189 (4.8) | 615R100GATD10 | | | |
| X5F | | | | | | | | |
| 100 | ± 20 | 0.680 (17.3) | 0.382 (9.7) | 0.500 (12.7) | 0.283 (7.2) | 20 | 0.032 (0.81) | 615R100GAT10 |
| 250 | | | 0.300 (7.6) | | 0.201 (5.1) | | | 615R100GAT25 |
| 500 | | | 0.345 (8.8) | | 0.248 (6.3) | | | 615R100GAT50 |
| Y5R | | | | | | | | |
| 100 | ± 20 | 0.490 (12.4) | 0.320 (8.1) | 0.375 (9.5) | 0.220 (5.6) | 20 | 0.032 (0.81) | 615R100GAST10 |
| 250 | | | 0.331 (8.4) | | 0.232 (5.9) | | | 615R100GAST25 |
| 500 | | | 0.310 (7.9) | | 0.213 (5.4) | | | 615R100GAST50 |
| 1000 | | 0.750 (19.1) | 0.320 (8.1) | 0.500 (12.7) | 0.220 (5.6) | | | 615R100GAD10 |
| Y5U | | | | | | | | |
| 1000 | + 80 / - 20 | 0.680 (17.3) | 0.330 (8.4) | 0.500 (12.7) | 0.232 (5.9) | 20 | 0.032 (0.81) | 615R100GASD10 |
| 2500 | ± 20 | 0.980 (24.9) | | | | | | 615R100GATD25 |
| Z5U | | | | | | | | |
| 2500 | + 80 / - 20 | 0.750 (19.1) | 0.350 (8.9) | 0.500 (12.7) | 0.256 (6.5) | 20 | 0.032 (0.81) | 615R100GAD25 |
| 3300 | | 0.980 (24.9) | 0.390 (9.9) | | 0.303 (7.7) | | | 615R100GAD33 |



| ORDERING INFORMATION, CERAMIC 15 kV _{DC} | | | | | | | | |
|---|-------------|--|---|---|--|-----------|--------------|------------------|
| C (pF) | TOL. (%) | D _{max.} DIAMETER INCH (mm) | T _{max.} THICKNESS INCH (mm) | LS LEAD SPACE INCH (mm) ± 0.040" (± 1 mm) | LO LEAD OFFSET INCH (mm) ± 0.020" (± 0.5 mm) | WIRE SIZE | | ORDERING CODE |
| | | | | | | AWG | INCH (mm) | |
| T3M (N4700) | | | | | | | | |
| 100 | ± 20 | 0.490 (12.4) | 0.470 (11.9) | 0.750 (19.1) | 0.370 (9.4) | 20 | 0.032 (0.81) | 615R150GATT10 |
| 250 | | 0.670 (17.0) | 0.460 (11.7) | | 0.362 (9.2) | | | 615R150GATT25 |
| 390 | | 0.750 (19.1) | 0.425 (10.8) | | 0.283 (7.2) | | | 615R150GATT39 |
| 500 | | 0.810 (20.6) | 0.382 (9.7) | | 0.283 (7.2) | | | 615R150GATT50 |
| 750 | | 1.063 (27.0) | 0.430 (10.9) | | 0.331 (8.4) | | | 615R150GATT75 |
| X5F | | | | | | | | |
| 100 | ± 20 | 0.670 (17.0) | 0.430 (10.9) | 0.750 (19.1) | 0.331 (8.4) | 20 | 0.032 (0.81) | 615R150GAT10 |
| 250 | | | 0.455 (11.6) | | 0.358 (9.1) | | | 615R150GAT25 |
| Y5R | | | | | | | | |
| 100 | ± 20 | 0.490 (12.4) | 0.449 (11.4) | 0.500 (12.7) | 0.350 (8.9) | 20 | 0.032 (0.81) | 615R150GAST10 |
| 250 | | | 0.480 (12.2) | | 0.382 (9.7) | | | 615R150GAST25 |
| 500 | | 0.670 (17.0) | 0.450 (11.4) | 0.750 (19.1) | 0.331 (8.4) | | | 615R150GAT50 |
| 1000 | | 0.980 (24.9) | 0.460 (11.7) | | 0.362 (9.2) | | | 615R150GATD10 |
| Y5U | | | | | | | | |
| 500 | + 80 / - 20 | 0.490 (12.4) | 0.375 (9.5) | 0.500 (12.7) | 0.276 (7.0) | 20 | 0.032 (0.81) | 615R150GAST50 |
| 1000 | | 0.670 (17.0) | 0.420 (10.7) | 0.750 (19.1) | 0.323 (8.2) | | | 615R150GAD10 |
| Z5U | | | | | | | | |
| 2200 | + 80 / - 20 | 0.980 (24.9) | 0.510 (13.0) | 0.750 (19.1) | 0.413 (10.5) | 20 | 0.032 (0.81) | 615R150GAD22 |
| 2500 | | | 0.450 (11.4) | | 0.350 (8.9) | | | 615R150GAD25 |

CAPACITANCE CHANGE VS. VOLTAGE (typical)



| RELATED DOCUMENTS | |
|---------------------|--|
| General Information | www.vishay.com/doc?23140 |



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