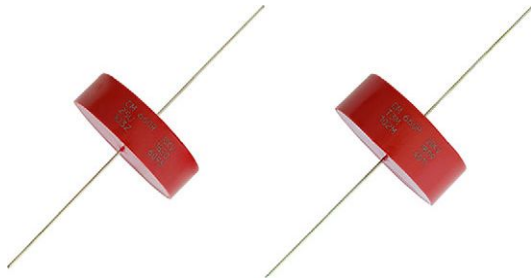


High Voltage Ceramic DC Disc Capacitors with Axial Leads, 10 kV_{DC} to 30 kV_{DC}



FEATURES

- Class 1 and class 2 ceramic
- High insulation resistance
- Epoxy encapsulated
- Wide capacitance range
- Ceramic singlelayer capacitor
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS
COMPLIANT

LINKS TO ADDITIONAL RESOURCES


[3D Models](#)

| QUICK REFERENCE DATA | | | | | | | | | | | | |
|----------------------------|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| DESCRIPTION | VALUE | | | | | | | | | | | |
| Ceramic class | 1 | | | | 2 | | | | 2 | | | |
| Ceramic dielectric | N4700 (T3M) | | | | X7R | | | | Z5U | | | |
| Voltage (V _{DC}) | 10 000 | 15 000 | 20 000 | 30 000 | 10 000 | 15 000 | 20 000 | 30 000 | 10 000 | 15 000 | 20 000 | 30 000 |
| Min. capacitance (pF) | 470 | 390 | 220 | 180 | 180 | 100 | 100 | 100 | 1500 | 1000 | 680 | 470 |
| Max. capacitance (pF) | 2000 | 1500 | 1000 | 680 | 4700 | 3900 | 2700 | 2000 | 10 000 | 6800 | 5000 | 3300 |
| Mounting | Axial | | | | | | | | | | | |

MARKING

Capacitance value and tolerance, rated DC voltage, T/C code, production date code, CM mark.

MATERIAL

Capacitor elements made from class 1 or class 2 ceramic in a molded case, high temperature epoxy construction.
Leads: tinned copper clad steel.

DIELECTRIC STRENGTH

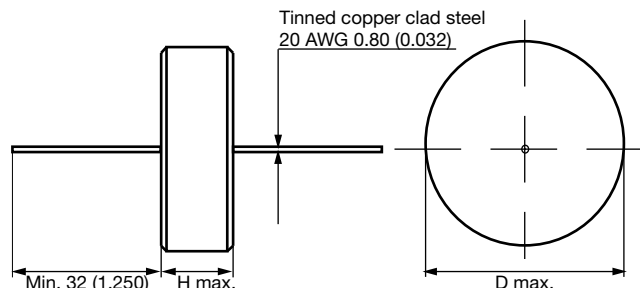
150 % of rated voltage (in dielectric fluid), charging current limited to 50 mA.

DISSIPATION FACTOR $\tan \delta$

N4700 (T3M): $\leq 2 \times 10^{-3}$ (1 kHz)

X7R, Z5U: $\leq 20 \times 10^{-3}$ (1 kHz)

DIMENSIONS in millimeters (inches)



INSULATION RESISTANCE

Min. 200 000 M Ω , at 180 V_{DC} or 1000 Ω F

OPERATING TEMPERATURE RANGE

-30 °C to +85 °C

RATED VOLTAGE ⁽¹⁾

- 660R10A### 10 kV_{DC} (3.5 kV_{RMS})
- 660R15A### 15 kV_{DC} (5.6 kV_{RMS})
- 660R20A### 20 kV_{DC} (7.0 kV_{RMS})
- 660R30A### 30 kV_{DC} (10.6 kV_{RMS})

Note

⁽¹⁾ All kV_{RMS} values up to 60 Hz



| ORDERING INFORMATION | | | | |
|----------------------|---------------------|-------------------|-----------|---------|
| 660R30ACT47 | 30 kV _{DC} | 470 pF | ± 20 % | X7R |
| MODEL | RATED VOLTAGE | CAPACITANCE VALUE | TOLERANCE | CERAMIC |

| SAP NUMBER AND ELECTRICAL DATA | | | | | | | | | |
|--------------------------------|-------------|-----------------|---------------|-----------------------------------|------------------------------------|-------------|-----------------|-------------|-----------------|
| MODEL NUMBER | CERAMIC | CAP. VALUE (pF) | TOLERANCE (%) | RATED VOLTAGE (kV _{DC}) | RATED VOLTAGE (kV _{RMS}) | D MAX. (mm) | D MAX. (INCHES) | H MAX. (mm) | H MAX. (INCHES) |
| 660R10AZ### | | | | | | | | | |
| 660R10AZT47 | N4700 (T3M) | 470 | ± 20 | 10 | 3.5 | 21 | 0.83 | 13 | 0.50 |
| 660R10AZD10 | | 1000 | | | | 30 | 1.18 | | |
| 660R10AZD20 | | 2000 | | | | 37 | 1.45 | | |
| 660R10AC### | | | | | | | | | |
| 660R10ACT18 | X7R | 180 | ± 20 | 10 | 3.5 | 21 | 0.83 | 13 | 0.50 |
| 660R10ACT22 | | 220 | | | | | | | |
| 660R10ACT33 | | 330 | | | | | | | |
| 660R10ACT47 | | 470 | | | | | | | |
| 660R10ACT68 | | 680 | | | | | | | |
| 660R10ACD10 | | 1000 | | | | 30 | 1.18 | 15 | 0.60 |
| 660R10ACD15 | | 1500 | | | | | | 14 | 0.55 |
| 660R10ACD22 | | 2200 | | | | | | 13 | 0.50 |
| 660R10ACD33 | | 3300 | | | | | | | |
| 660R10ACD47 | | 4700 | | | | 37 | 1.45 | | |
| 660R10AE### | | | | | | | | | |
| 660R10AED15 | Z5U | 1500 | + 80 / - 20 | 10 | 3.5 | 21 | 0.83 | 13 | 0.50 |
| 660R10AED22 | | 2200 | | | | | | | |
| 660R10AED33 | | 3300 | | | | | | | |
| 660R10AED47 | | 4700 | | | | 37 | 1.45 | 11 | 0.45 |
| 660R10AED68 | | 6800 | | | | | | | |
| 660R10AES10 | | 10 000 | | | | | | | |
| 660R15AZ### | | | | | | | | | |
| 660R15AZT39 | N4700 (T3M) | 390 | ± 20 | 15 | 5.3 | 21 | 0.83 | 13 | 0.50 |
| 660R15AZT82 | | 820 | | | | 30 | 1.18 | | |
| 660R15AZD15 | | 1500 | | | | 37 | 1.45 | | |
| 660R15AC### | | | | | | | | | |
| 660R15ACT10 | X7R | 100 | ± 20 | 15 | 5.3 | 21 | 0.83 | 13 | 0.50 |
| 660R15ACT22 | | 220 | | | | | | | |
| 660R15ACT33 | | 330 | | | | | | | |
| 660R15ACT47 | | 470 | | | | | | | |
| 660R15ACT68 | | 680 | | | | | | | |
| 660R15ACD10 | | 1000 | | | | 30 | 1.18 | 15 | 0.60 |
| 660R15ACD15 | | 1500 | | | | | | 17 | 0.65 |
| 660R15ACD22 | | 2200 | | | | | | 15 | 0.60 |
| 660R15ACD33 | | 3300 | | | | | | | |
| 660R15ACD39 | | 3900 | | | | 37 | 1.45 | | |

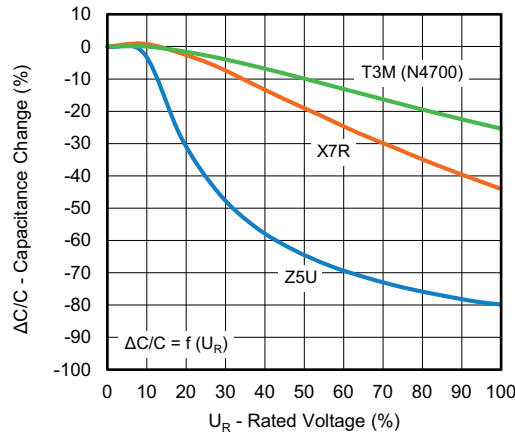


| SAP NUMBER AND ELECTRICAL DATA | | | | | | | | | |
|--------------------------------|-------------|-----------------|---------------|-----------------------------------|------------------------------------|-------------|-----------------|-------------|-----------------|
| MODEL NUMBER | CERAMIC | CAP. VALUE (pF) | TOLERANCE (%) | RATED VOLTAGE (kV _{DC}) | RATED VOLTAGE (kV _{RMS}) | D MAX. (mm) | D MAX. (INCHES) | H MAX. (mm) | H MAX. (INCHES) |
| 660R15AE### | | | | | | | | | |
| 660R15AED10 | Z5U | 1000 | + 80 / - 20 | 15 | 5.3 | 21 | 0.83 | 13 | 0.50 |
| 660R15AED15 | | 1500 | | | | | | | |
| 660R15AED22 | | 2200 | | | | | | | |
| 660R15AED33 | | 3300 | | | | | | | |
| 660R15AED47 | | 4700 | | | | | | | |
| 660R15AED68 | | 6800 | | | | 37 | 1.45 | | |
| 660R20AZ### | | | | | | | | | |
| 660R20AZT22 | N4700 (T3M) | 220 | ± 20 | 20 | 7 | 21 | 0.83 | 15 | 0.60 |
| 660R20AZT68 | | 680 | | | | 30 | 1.18 | | |
| 660R20AZD10 | | 1000 | | | | 37 | 1.45 | | |
| 660R20AC### | | | | | | | | | |
| 660R20ACT10 | X7R | 100 | ± 20 | 20 | 7 | 21 | 0.83 | 15 | 0.60 |
| 660R20ACT22 | | 220 | | | | | | | |
| 660R20ACT33 | | 330 | | | | | | | |
| 660R20ACT47 | | 470 | | | | | | 17 | 0.65 |
| 660R20ACT68 | | 680 | | | | | | | |
| 660R20ACD10 | | 1000 | | | | 30 | 1.18 | 15 | 0.60 |
| 660R20ACD15 | | 1500 | | | | | | | |
| 660R20ACD22 | | 2200 | | | | 37 | 1.45 | 19 | 0.70 |
| 660R20ACD25 | | 2500 | | | | | | | |
| 660R20ACD27 | | 2700 | | | | | | 19 | 0.75 |
| | | | | | | | | | |
| 660R20AE### | | | | | | | | | |
| 660R20AET68 | Z5U | 680 | + 80 / - 20 | 20 | 7 | 21 | 0.83 | 15 | 0.60 |
| 660R20AED10 | | 1000 | | | | | | | |
| 660R20AED15 | | 1500 | | | | | | | |
| 660R20AED22 | | 2200 | | | | 30 | 1.18 | 15 | 0.60 |
| 660R20AED33 | | 3300 | | | | | | | |
| 660R20AED47 | | 4700 | | | | 37 | 1.45 | 19 | 0.75 |
| 660R20AED50 | | 5000 | | | | | | | |
| 660R30AZ### | | | | | | | | | |
| 660R30AZT18 | N4700 (T3M) | 180 | ± 20 | 30 | 10.6 | 21 | 0.83 | 20 | 0.80 |
| 660R30AZT47 | | 470 | | | | 30 | 1.18 | | |
| 660R30AZT68 | | 680 | | | | 37 | 1.45 | | |
| 660R30AC### | | | | | | | | | |
| 660R30ACT10 | X7R | 100 | ± 20 | 30 | 10.6 | 21 | 0.83 | 20 | 0.80 |
| 660R30ACT22 | | 220 | | | | | | | |
| 660R30ACT33 | | 330 | | | | | | | |
| 660R30ACT47 | | 470 | | | | | | 19 | 0.75 |
| 660R30ACT68 | | 680 | | | | | | | |
| 660R30ACD10 | | 1000 | | | | 30 | 1.18 | 20 | 0.80 |
| 660R30ACD15 | | 1500 | | | | | | | |
| 660R30ACD20 | | 2000 | | | | 37 | 1.45 | | |
| | | | | | | | | | |



| SAP NUMBER AND ELECTRICAL DATA | | | | | | | | | |
|--------------------------------|---------|-----------------|---------------|-----------------------------------|------------------------------------|-------------|-----------------|-------------|-----------------|
| MODEL NUMBER | CERAMIC | CAP. VALUE (pF) | TOLERANCE (%) | RATED VOLTAGE (kV _{DC}) | RATED VOLTAGE (kV _{RMS}) | D MAX. (mm) | D MAX. (INCHES) | H MAX. (mm) | H MAX. (INCHES) |
| 660R30AE### | | | | | | | | | |
| 660R30AET47 | Z5U | 470 | + 80 / - 20 | 30 | 10.6 | 21 | 0.83 | 20 | 0.80 |
| 660R30AET68 | | 680 | | | | | | 19 | 0.75 |
| 660R30AET82 | | 820 | | | | | | 20 | 0.80 |
| 660R30AED10 | | 1000 | | | | 30 | 1.18 | 19 | 0.75 |
| 660R30AED12 | | 1200 | | | | | | | |
| 660R30AED15 | | 1500 | | | | | | | |
| 660R30AED18 | | 1800 | | | | | | | |
| 660R30AED20 | | 2000 | | | | 37 | 1.45 | 19 | 0.75 |
| 660R30AED22 | | 2200 | | | | | | | |
| 660R30AED25 | | 2500 | | | | | | | |
| 660R30AED30 | | 3000 | | | | | | | |
| 660R30AED33 | | 3300 | | | | | | | |

CAPACITANCE CHANGE VS. VOLTAGE (typical)



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



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