

## Lower Voltage Ceramic DC Disc Capacitors 1000 V<sub>DC</sub> Temperature and Voltage Stabilized



### FEATURES

- Low losses
- High stability
- High capacitance in small size
- Complete range of capacitance values
- 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

- Bypassing
- Resonant circuit
- Coupling

### DESIGN

The capacitors consist of a ceramic disc of which both sides are silver-plated. Connection leads are made of tinned copper or tinned copper clad steel having diameters of 0.020" (0.51 mm) or 0.025" (0.64 mm).

The capacitors may be supplied with radial kinked or straight leads having lead spacing of 0.250" (6.35 mm) or 0.375" (9.5 mm).

The standard tolerance is  $\pm 10\%$ .

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

### CAPACITANCE RANGE

10 pF to 10 nF

### RATED VOLTAGE

1000 V<sub>DC</sub>

### DIELECTRIC STRENGTH BETWEEN LEADS

Component test:

2500 V<sub>DC</sub>, 2 s

### CERAMIC DIELECTRIC

C0G, U2J (Class 1)

X5F, X7R (Class 2)

### QUICK REFERENCE DATA

| DESCRIPTION                | VALUE  |     |      |        |
|----------------------------|--------|-----|------|--------|
| Ceramic Class              | 1      |     | 2    |        |
| Ceramic Dielectric         | C0G    | U2J | X5F  | X7R    |
| Voltage (V <sub>DC</sub> ) | 1000   |     |      |        |
| Min. Capacitance (pF)      | 10     | 27  | 56   | 10 000 |
| Max. Capacitance (pF)      | 10     | 39  | 4700 | 10 000 |
| Mounting                   | Radial |     |      |        |

### INSULATION RESISTANCE

Min. 1000  $\Omega$ F or 50 000 M $\Omega$

### TOLERANCE ON CAPACITANCE

$\pm 10\%$

### DISSIPATION FACTOR

2.0 % max. at 1 kHz; 1 V

### CATEGORY TEMPERATURE RANGE

(-55 to +125) °C C0G, U2J, X7R

(-25 to +85) °C X5F

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

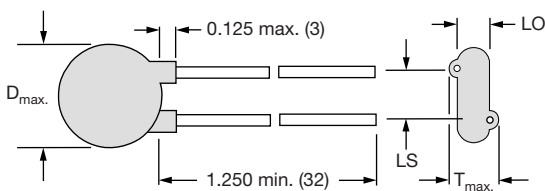
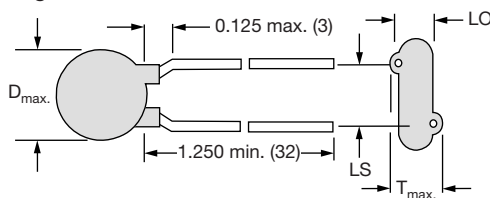
55/125/21 C0G, U2J, X7R

25/085/21 X5F

### OPERATING TEMPERATURE RANGE

(-55 to +105) °C

**DIMENSIONS** in inches (millimeters)

**Fig. 1**

**Fig. 2**

**ORDERING INFORMATION, CERAMIC 1000 V<sub>DC</sub> TEMPERATURE AND VOLTAGE STABILIZED**

| C<br>(pF)  | TOL.<br>(%)  | D <sub>max.</sub><br>DIAMETER<br>INCH (mm) | T <sub>max.</sub><br>THICKNESS<br>INCH (mm) | LS<br>LEAD SPACE<br>INCH (mm)<br>± 1 mm | LO<br>LEAD OFFSET<br>INCH (mm)<br>± 0.5 mm | WIRE SIZE    |              | FIG.        | ORDERING<br>CODE |
|------------|--------------|--------------------------------------------|---------------------------------------------|-----------------------------------------|--------------------------------------------|--------------|--------------|-------------|------------------|
| C0G (NP0)  |              |                                            |                                             |                                         |                                            |              |              |             |                  |
| 10         | ± 10         | 0.250 (6.4)                                | 0.156 (4.0)                                 | 0.250 (6.4)                             | 0.051 (1.3)                                | 24           | 0.020 (0.51) | 2           | 561R10TSQ10      |
| U2J (N750) |              |                                            |                                             |                                         |                                            |              |              |             |                  |
| 27         | ± 10         | 0.290 (7.4)                                | 0.156 (4.0)                                 | 0.250 (6.4)                             | 0.047 (1.2)                                | 24           | 0.020 (0.51) | 2           | 561R10TSQ27      |
| 30         |              |                                            |                                             |                                         | 0.039 (1.0)                                |              |              |             | 561R10TSQ30      |
| 33         |              |                                            |                                             |                                         | 0.039 (1.0)                                |              |              |             | 561R10TSQ33      |
| 39         |              |                                            |                                             |                                         | 0.039 (1.0)                                |              |              |             | 561R10TSQ39      |
| X5F        |              |                                            |                                             |                                         |                                            |              |              |             |                  |
| 56         | ± 10         | 0.250 (6.4)                                | 0.156 (4.0)                                 | 0.250 (6.4)                             | 0.075 (1.9)                                | 24           | 0.020 (0.51) | 2           | 562R10TSQ56      |
| 68         |              |                                            |                                             |                                         | 0.063 (1.6)                                |              |              |             | 562R10TSQ68      |
| 75         |              |                                            |                                             |                                         | 0.059 (1.5)                                |              |              |             | 562R10TSQ75      |
| 82         |              |                                            |                                             |                                         | 0.055 (1.4)                                |              |              |             | 562R10TSQ82      |
| 100        |              |                                            |                                             |                                         | 0.055 (1.4)                                |              |              |             | 562R10TST10      |
| 120        |              |                                            |                                             |                                         | 0.051 (1.3)                                |              |              |             | 562R10TST12      |
| 150        |              |                                            |                                             |                                         | 0.043 (1.1)                                |              |              |             | 562R10TST15      |
| 180        |              |                                            |                                             |                                         | 0.043 (1.1)                                |              |              |             | 562R10TST18      |
| 200        |              |                                            |                                             |                                         | 0.039 (1.0)                                |              |              |             | 562R10TST20      |
| 220        |              |                                            |                                             |                                         | 0.051 (1.3)                                |              |              |             | 562R10TST22      |
| 250        |              |                                            |                                             |                                         | 0.047 (1.2)                                |              |              |             | 562R10TST25      |
| 270        |              |                                            |                                             |                                         | 0.043 (1.1)                                |              |              |             | 562R10TST27      |
| 300        |              |                                            |                                             |                                         | 0.039 (1.0)                                |              |              |             | 562R10TST30      |
| 330        |              |                                            |                                             |                                         | 0.039 (1.0)                                |              |              |             | 562R10TST33      |
| 390        |              |                                            |                                             |                                         | 0.043 (1.1)                                |              |              |             | 562R10TST39      |
| 470        |              |                                            |                                             |                                         | 0.039 (1.0)                                |              |              |             | 562R10TST47      |
| 500        |              |                                            |                                             |                                         | 0.039 (1.0)                                |              |              |             | 562R10TST50      |
| 560        |              | 0.290 (7.4)                                | 0.156 (4.0)                                 | 0.250 (6.4)                             | 0.047 (1.2)                                |              |              |             | 562R10TST56      |
| 680        |              |                                            |                                             |                                         | 0.043 (1.1)                                |              |              |             | 562R10TST68      |
| 750        |              |                                            |                                             |                                         | 0.039 (1.0)                                |              |              |             | 562R10TST75      |
| 820        |              |                                            |                                             |                                         | 0.039 (1.0)                                |              |              |             | 562R10TST82      |
| 1000       |              |                                            |                                             |                                         | 0.035 (0.9)                                |              |              |             | 562R10TSD10      |
| 1500       | 0.440 (11.2) | 0.156 (4.0)                                | 0.250 (6.4)                                 | 0.051 (1.3)                             | 22                                         | 0.025 (0.64) | 1            | 562R10TSD15 |                  |
| 2000       | 0.490 (12.4) | 0.156 (4.0)                                | 0.375 (9.5)                                 | 0.051 (1.3)                             |                                            |              |              | 562R10TSD20 |                  |
| 2200       | 0.490 (12.4) | 0.156 (4.0)                                | 0.375 (9.5)                                 | 0.047 (1.2)                             |                                            |              |              | 562R10TSD22 |                  |
| 2700       | 0.560 (14.2) | 0.156 (4.0)                                | 0.375 (9.5)                                 | 0.051 (1.3)                             |                                            |              |              | 562R10TSD27 |                  |
| 3300       | 0.560 (14.2) | 0.156 (4.0)                                | 0.375 (9.5)                                 | 0.047 (1.2)                             |                                            |              |              | 562R10TSD33 |                  |
| 4700       | 0.680 (17.3) | 0.156 (4.0)                                | 0.375 (9.5)                                 | 0.051 (1.3)                             |                                            |              |              | 562R10TSD47 |                  |
| X7R        |              |                                            |                                             |                                         |                                            |              |              |             |                  |
| 0.010 µF   | ± 10         | 0.680 (17.3)                               | 0.156 (4.0)                                 | 0.375 (9.5)                             | 0.047 (1.2)                                | 22           | 0.025 (0.64) | 1           | 562R10TSS10      |

**TAPE AND REEL OPTIONS**

- Tape and reel available on diameter sizes 0.250" to 0.680"
- Part number codes and specifications for tape and reel packaging are found in the general information document - find web-link below

**RELATED DOCUMENTS**

General Information

[www.vishay.com/doc?23140](http://www.vishay.com/doc?23140)



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