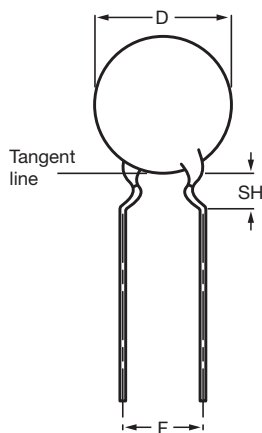


## Ceramic Disc Capacitors Class 1, 500 V<sub>DC</sub>, Narrow Tolerance



Capacitor with 5 mm (0.20") lead spacing

### QUICK REFERENCE DATA

| DESCRIPTION                | CLASS 1 (NP0, N750) |
|----------------------------|---------------------|
| Voltage (V <sub>DC</sub> ) | 500                 |
| Min. Capacitance (pF)      | 1.0                 |
| Max. Capacitance (pF)      | 150                 |
| Mounting                   | Through hole        |

### MARKING

Marking indicates capacitance value and tolerance in accordance with "EIA 198".

### OPERATING TEMPERATURE RANGE

Class 1, - 55 °C to + 125 °C

### TEMPERATURE COEFFICIENTS

Class 1, NP0; N750

### SECTIONAL SPECIFICATIONS

Class 1, IEC 60 384-8,  
EIA 198

### CLIMATIC CATEGORY

Class 1, 55/125/21

### FEATURES

- Low losses
- High stability
- High capacitance in small size
- Kinked (preferred) or straight leads
- Compliant to RoHS directive 2002/95/EC



**RoHS**  
COMPLIANT

### APPLICATIONS

- Bypassing
- Coupling
- Resonant circuit

### DESIGN

The capacitors consist of a ceramic disc both sides of which are silver-plated. Connection leads are made of tinned copper having a diameter of 0.6 mm.

The capacitors have inward kinked leads with a spacing of 5 mm (0.200") and a lead length from 4 mm to 30 mm. Encapsulation is made of phenolic resin.

### CAPACITANCE RANGE

Class 1, at 1 MHz, 1.2 V<sub>RMS</sub>: 1.0 pF to 150 pF

1 kHz, 1 V<sub>RMS</sub> ± 0.2 V<sub>RMS</sub> for capacitance values higher than 1000 pF

### RATED VOLTAGE DC

500 V

### DIELECTRIC STRENGTH

250 % of rated voltage

### INSULATION RESISTANCE AT 500 V<sub>DC</sub>

≥ 10 000 MΩ

### TOLERANCE ON CAPACITANCE

± 0.25 pF; ± 2 %

### DISSIPATION FACTOR

Class 1, C ≤ 30 pF; ≤ 20 x (10/C + 0.7) x 10<sup>-4</sup> maximum

Class 1, C > 30 pF; ≤ 0.2 %

### Note

The capacitors meet the essential requirements of "EIA 198". Unless stated otherwise all electrical values apply at an ambient temperature of 25 °C ± 3 °C, at normal atmospheric conditions.

# D Series Narrow Tolerance

Vishay BCcomponents

Ceramic Disc Capacitors  
Class 1, 500 V<sub>DC</sub>, Narrow Tolerance



| ORDERING INFORMATION CLASS 1, 500 V <sub>DC</sub> , KINKED |             |                           |                      |                           |                                                                                                          |
|------------------------------------------------------------|-------------|---------------------------|----------------------|---------------------------|----------------------------------------------------------------------------------------------------------|
| C<br>(pF)                                                  | TOL.<br>(%) | D <sub>MAX.</sub><br>(mm) | LEAD SPACING<br>(mm) | SH <sup>(1)</sup><br>(mm) | CLEAR TEXT CODE                                                                                          |
|                                                            |             |                           |                      |                           | 13 <sup>TH</sup> DIGIT:<br>T = REEL; U = AMMO; 3 = BULK<br>16 <sup>TH</sup> DIGIT:<br>R = RoHS COMPLIANT |
| CLASS 1 NP0                                                |             |                           |                      |                           |                                                                                                          |
| 1.0                                                        | ± 0.25 pF   | 5.0                       | 5.0                  | 4.0                       | D109C20C0KL6.J5.                                                                                         |
| 1.5                                                        |             |                           |                      |                           | D159C20C0KL6.J5.                                                                                         |
| 2.2                                                        |             |                           |                      |                           | D229C20C0JL6.J5.                                                                                         |
| 3.3                                                        |             |                           |                      |                           | D339C20C0JL6.J5.                                                                                         |
| 4.7                                                        |             |                           |                      |                           | D479C20C0HL6.J5.                                                                                         |
| 6.8                                                        |             |                           |                      |                           | D689C20C0HL6.J5.                                                                                         |
| 10                                                         | ± 2         | 6.5                       |                      |                           | D100G20C0GL6.J5.                                                                                         |
| 15                                                         |             |                           |                      |                           | D150G20C0GL6.J5.                                                                                         |
| 22                                                         |             |                           |                      |                           | D220G25C0GL6.J5.                                                                                         |
| 33                                                         |             |                           |                      |                           | D330G25C0GL6.J5.                                                                                         |
| 47                                                         |             |                           |                      |                           | D470G29C0GL6.J5.                                                                                         |
| 68                                                         |             |                           |                      |                           | D680G33C0GL6.J5.                                                                                         |
| 100                                                        |             |                           |                      |                           | D101G39C0GL6.J5.                                                                                         |
| 150                                                        |             |                           |                      |                           | D151G47C0GL6.J5.                                                                                         |

| ORDERING INFORMATION CLASS 1, 500 V <sub>DC</sub> , KINKED |             |                           |                      |                           |                                                                                                          |                  |
|------------------------------------------------------------|-------------|---------------------------|----------------------|---------------------------|----------------------------------------------------------------------------------------------------------|------------------|
| C<br>(pF)                                                  | TOL.<br>(%) | D <sub>MAX.</sub><br>(mm) | LEAD SPACING<br>(mm) | SH <sup>(1)</sup><br>(mm) | CLEAR TEXT CODE                                                                                          |                  |
|                                                            |             |                           |                      |                           | 13 <sup>TH</sup> DIGIT:<br>T = REEL; U = AMMO; 3 = BULK<br>16 <sup>TH</sup> DIGIT:<br>R = RoHS COMPLIANT |                  |
| CLASS 1 N750                                               |             |                           |                      |                           |                                                                                                          |                  |
| 6.8                                                        | ± 0.25      | 5                         | 5                    | 4.0                       | D689C20U2JL6.J5.                                                                                         |                  |
| 10                                                         | ± 2         |                           |                      |                           | 5                                                                                                        | D100G20U2JL6.J5. |
| 15                                                         |             |                           |                      |                           |                                                                                                          | D150G20U2JL6.J5. |
| 22                                                         |             |                           |                      |                           |                                                                                                          | D220G20U2JL6.J5. |
| 33                                                         |             | 6.5                       |                      |                           |                                                                                                          | D330G25U2JL6.J5. |
| 47                                                         |             | 7.5                       |                      |                           |                                                                                                          | D470G29U2JL6.J5. |
| 68                                                         |             | 8.5                       |                      |                           |                                                                                                          | D680G33U2JL6.J5. |
| 100                                                        |             | 10                        |                      |                           |                                                                                                          | D101G39U2JL6.J5. |
| 150                                                        |             | 12                        |                      |                           |                                                                                                          | D151G47U2JL6.J5. |

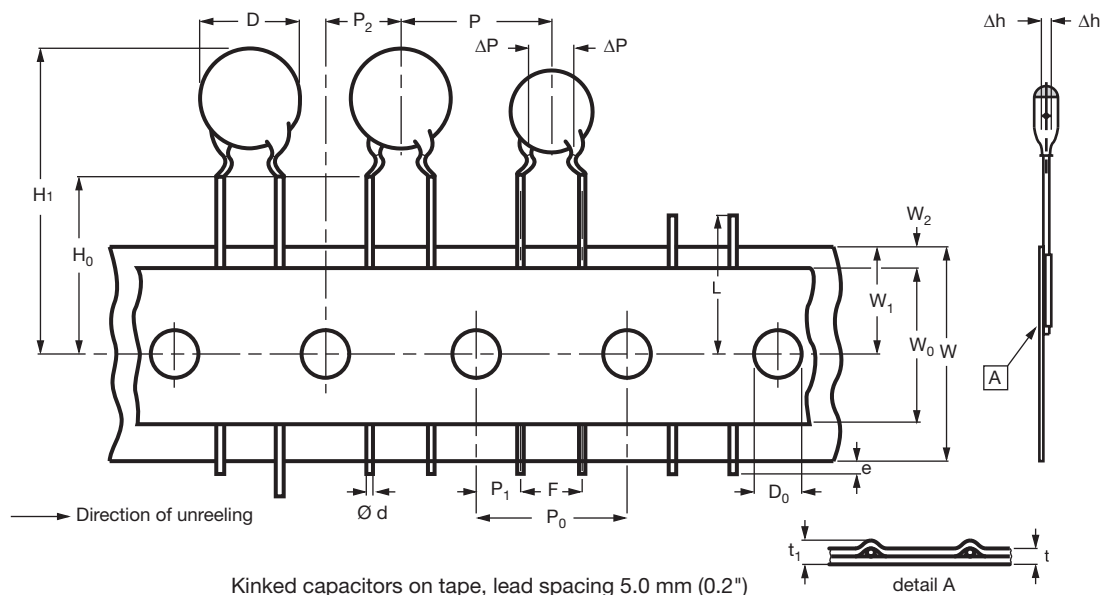
## Notes

- <sup>(1)</sup> SH = seated height
- Maximum thickness 4.0 mm
- Lead style codes refer to inward kinked leads. Other styles available on request
- Other capacitance values E12 series available

| PACKAGING                 |           |                      |      |      |
|---------------------------|-----------|----------------------|------|------|
| D <sub>MAX.</sub><br>(mm) | SIZE CODE | PACKAGING QUANTITIES |      |      |
|                           |           | BULK                 | REEL | AMMO |
| 5.0 (0.20")               | 20        | 1000                 | 2000 | 2000 |
| 6.5 (0.25")               | 25        |                      |      |      |
| 7.5 (0.29")               | 29        |                      |      |      |
| 8.5 (0.33")               | 33        |                      |      |      |
| 10.0 (0.39")              | 39        |                      |      |      |
| 11.0 (0.43")              | 43        |                      |      |      |
| 12.0 (0.47")              | 47        |                      |      |      |

## Note

- The capacitors are supplied in bulk packaging (cardboard boxes), in tape on reel or in ammpack.



## DIMENSIONS OF TAPE

| SYMBOL                        | PARAMETER                            | DIMENSIONS (mm) |               |
|-------------------------------|--------------------------------------|-----------------|---------------|
|                               |                                      | NOMINAL         | TOLERANCE     |
| D                             | Body diameter                        | 11.0 maximum    | -             |
| d                             | Lead diameter                        | 0.6             | ± 0.05        |
| P                             | Pitch between capacitors             | 12.7            | ± 1.0         |
| P <sub>0</sub> <sup>(1)</sup> | Feed-hole pitch                      | 12.7            | ± 0.3         |
| ΔP                            | Plane deviation                      | 1.0 maximum     | -             |
| P <sub>1</sub> <sup>(2)</sup> | Feed-hole center to lead center      | 3.85            | ± 0.7         |
| P <sub>2</sub> <sup>(2)</sup> | Feed-hole center to component center | 6.35            | ± 1.3         |
| F                             | Lead spacing                         | 5.0             | 0.6<br>- 0.4  |
| Δh                            | Component alignment                  | 0               | ± 1.0         |
| W                             | Tape width                           | 18.0            | 1.0<br>- 0.5  |
| W <sub>0</sub>                | Hold-down tape width                 | 5.0 minimum     | -             |
| W <sub>1</sub>                | Hole position                        | 9.0             | 0.75<br>- 0.5 |
| W <sub>2</sub>                | Hold-down tape margin                | 3.0 maximum     | -             |
| H <sub>0</sub>                | Height to seating plane              | 16.0            | ± 0.5         |
| H <sub>1</sub>                | Maximum component height             | 32.0            | -             |
| e                             | Lead end protrusion                  | 1.0 maximum     | -             |
| L                             | Maximum length of snapped lead       | 11.0            | -             |
| D <sub>0</sub>                | Feed-hole diameter                   | 4.0             | ± 0.2         |
| t                             | Total tape thickness                 | 0.9 maximum     | -             |
| t <sub>1</sub>                | Maximum thickness of tape and wires  | 1.5 maximum     | -             |

### Notes

<sup>(1)</sup> Cumulative pitch error: ± ≤ 1 mm/20 pitches

<sup>(2)</sup> Obliquity maximum 3°

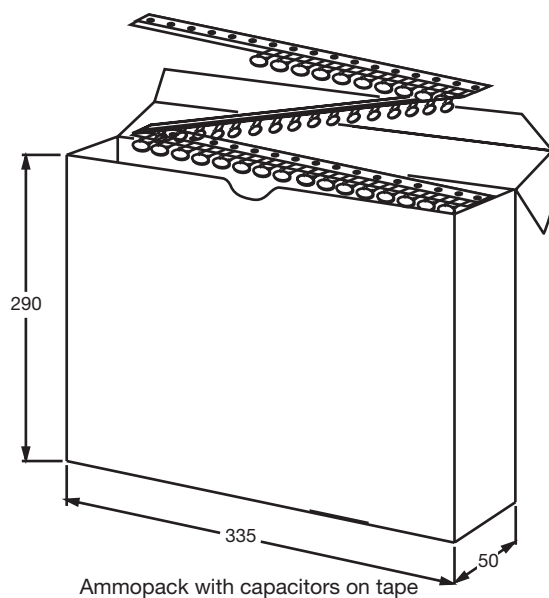
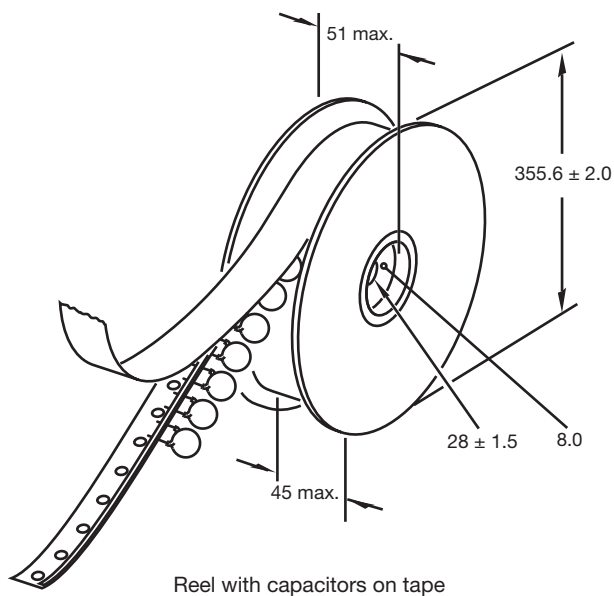
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### REEL AND TAPE DATA in millimeters





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