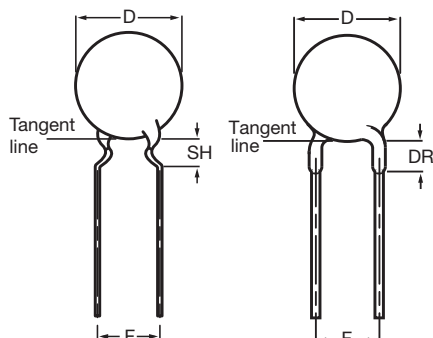


## Ceramic Disc Capacitors Class 1, 100 V<sub>DC</sub>, Narrow Tolerance



Capacitors with 5 mm (0.20") and 2.5 mm (0.10") lead spacing

| QUICK REFERENCE DATA       |                     |
|----------------------------|---------------------|
| DESCRIPTION                | CLASS 1 (NP0, N750) |
| Voltage (V <sub>DC</sub> ) | 100                 |
| Min. Capacitance (pF)      | 1.5                 |
| Max. Capacitance (pF)      | 330                 |
| Mounting                   | Through hole        |

### MARKING

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

### OPERATING TEMPERATURE RANGE

Class 1, - 55 to + 125 °C

### TEMPERATURE COEFFICIENTS

Class 1, NP0; N750

### SECTIONAL SPECIFICATIONS

Class 1, IEC 60 384-8,  
EIA 198

### CLIMATIC CATEGORY

Class 1, 55/125/56

### FEATURES

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

### 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 (0.20") and 2.5 mm (0.10") and a lead length from 4 mm to 30 mm. Encapsulation is made of phenolic resin.

### CAPACITANCE RANGE

1.5 pF to 330 pF; Class 1, at 1 MHz, 1.2 V<sub>RMS</sub>;

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

### RATED DC VOLTAGE

100 V

### DIELECTRIC STRENGTH

250 % of rated voltage

### INSULATION RESISTANCE AT 100 V<sub>DC</sub>

≥ 10 000 MΩ

### TOLERANCE ON CAPACITANCE

± 0.25 pF; ± 0.5 pF; ± 2 %

### DISSIPATION FACTOR

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

Class 1, C > 30 pF; ≤ 0.2 %



**RoHS**  
COMPLIANT

### Note

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



# D Series Narrow Tolerance

Ceramic Disc Capacitors  
Class 1, 100 V<sub>DC</sub>, Narrow Tolerance

Vishay BCcomponents

| ORDERING INFORMATION, CLASS 1, 100 V <sub>DC</sub> , KINKED AND STRAIGHT |           |                           |                           |                                              |                                                         |                  |
|--------------------------------------------------------------------------|-----------|---------------------------|---------------------------|----------------------------------------------|---------------------------------------------------------|------------------|
| C (PF)                                                                   | TOL. (%)  | D <sub>MAX.</sub><br>(mm) | LEAD SPACING<br>F<br>(mm) | SH/DR <sub>MAX.</sub> <sup>(1)</sup><br>(mm) | CLEAR TEXT CODE                                         |                  |
|                                                                          |           |                           |                           |                                              | 13 <sup>TH</sup> DIGIT:<br>T = REEL; U = AMMO; 3 = BULK |                  |
| CLASS 1 NP0                                                              |           |                           |                           |                                              |                                                         |                  |
| 1.5                                                                      | ± 0.25 pF | 5.0                       | 5.0                       | 4.0                                          | D159C20C0KH6.J5R                                        |                  |
|                                                                          |           |                           | 2.5                       | 1.5                                          | D159C20C0KH6.L2R                                        |                  |
| 1.8                                                                      |           |                           | 5.0                       | 4.0                                          | D189C20C0KH6.J5R                                        |                  |
|                                                                          |           |                           | 2.5                       | 1.5                                          | D189C20C0KH6.L2R                                        |                  |
| 2.2                                                                      |           |                           | 5.0                       | 4.0                                          | D229C20C0JH6.J5R                                        |                  |
|                                                                          |           |                           | 2.5                       | 1.5                                          | D229C20C0JH6.L2R                                        |                  |
| 3.3                                                                      |           |                           | 5.0                       | 4.0                                          | D339C20C0JH6.J5R                                        |                  |
|                                                                          |           |                           | 2.5                       | 1.5                                          | D339C20C0JH6.L2R                                        |                  |
| 4.7                                                                      |           |                           | 5.0                       | 4.0                                          | D479C20C0HH6.J5R                                        |                  |
|                                                                          |           |                           | 2.5                       | 1.5                                          | D479C20C0HH6.L2R                                        |                  |
| 6.8                                                                      |           |                           | 5.0                       | 4.0                                          | D689C20C0HH6.J5R                                        |                  |
|                                                                          |           |                           | 2.5                       | 1.5                                          | D689C20C0HH6.L2R                                        |                  |
| 10                                                                       | ± 2       |                           | 5.0                       | 4.0                                          | D100G20C0GH6.J5R                                        |                  |
|                                                                          |           |                           | 2.5                       | 1.5                                          | D100G20C0GH6.L2R                                        |                  |
| 15                                                                       |           |                           | 5.0                       | 4.0                                          | D150G20C0GH6.J5R                                        |                  |
|                                                                          |           |                           | 2.5                       | 1.5                                          | D150G20C0GH6.L2R                                        |                  |
| 22                                                                       |           |                           | 5.0                       | 4.0                                          | D220G20C0GH6.J5R                                        |                  |
|                                                                          |           |                           | 2.5                       | 1.5                                          | D220G20C0GH6.L2R                                        |                  |
| 33                                                                       |           |                           | 5.0                       | 4.0                                          | D330G20C0GH6.J5R                                        |                  |
|                                                                          |           |                           | 2.5                       | 1.5                                          | D330G20C0GH6.L2R                                        |                  |
| 47                                                                       | ± 2       |                           | 6.5                       | 5.0                                          | 4.0                                                     | D470G25C0GH6.J5R |
|                                                                          |           |                           |                           | 2.5                                          | 1.5                                                     | D470G25C0GH6.L2R |
| 68                                                                       |           |                           |                           | 5.0                                          | 4.0                                                     | D680G25C0GH6.J5R |
|                                                                          |           |                           |                           | 2.5                                          | 1.5                                                     | D680G25C0GH6.L2R |
| 100                                                                      |           | 7.5                       | 5.0                       | 4.0                                          | D101G29C0GH6.J5R                                        |                  |
|                                                                          |           |                           | 2.5                       | 1.5                                          | D101G29C0GH6.L2R                                        |                  |
| 150                                                                      |           | 8.5                       | 5.0                       | 4.0                                          | D151G33C0GH6.J5R                                        |                  |
|                                                                          |           |                           | 2.5                       | 1.5                                          | D151G33C0GH6.L2R                                        |                  |
| 220                                                                      |           | 11.0                      | 5.0                       | 4.0                                          | D221G43C0GH6.J5R                                        |                  |
|                                                                          |           |                           | 2.5                       | 1.5                                          | D221G43C0GH6.L2R                                        |                  |
| CLASS 1 N750                                                             |           |                           |                           |                                              |                                                         |                  |
| 6.8                                                                      |           | ± 0.25 pF                 | 5.5                       | 5.0                                          | 4.0                                                     | D689C20U2JH6.J5R |
|                                                                          | ± 2       | 2.5                       |                           | 1.5                                          | D689C20U2JH6.L2R                                        |                  |
| 10                                                                       |           | 5.0                       |                           | 4.0                                          | D100G20U2JH6.J5R                                        |                  |
|                                                                          |           | 2.5                       |                           | 1.5                                          | D100G20U2JH6.L2R                                        |                  |
| 15                                                                       |           | 5.0                       |                           | 4.0                                          | D150G20U2JH6.J5R                                        |                  |
|                                                                          |           | 2.5                       |                           | 1.5                                          | D150G20U2JH6.L2R                                        |                  |
| 22                                                                       |           | 5.0                       |                           | 4.0                                          | D220G20U2JH6.J5R                                        |                  |
|                                                                          |           | 2.5                       |                           | 1.5                                          | D220G20U2JH6.L2R                                        |                  |
| 33                                                                       |           | 5.0                       |                           | 4.0                                          | D330G20U2JH6.J5R                                        |                  |
|                                                                          |           | 2.5                       |                           | 1.5                                          | D330G20U2JH6.L2R                                        |                  |
| 47                                                                       |           | 5.0                       |                           | 4.0                                          | D470G20U2JH6.J5R                                        |                  |
|                                                                          |           | 2.5                       |                           | 1.5                                          | D470G20U2JH6.L2R                                        |                  |
| 68                                                                       | 6.5       | 5.0                       | 4.0                       | D680G25U2JH6.J5R                             |                                                         |                  |
|                                                                          |           | 2.5                       | 1.5                       | D680G25U2JH6.L2R                             |                                                         |                  |

# D Series Narrow Tolerance

Vishay BCcomponents

Ceramic Disc Capacitors  
Class 1, 100 V<sub>DC</sub>, Narrow Tolerance



## ORDERING INFORMATION, CLASS 1, 100 V<sub>DC</sub>, KINKED AND STRAIGHT

| C (PF)        | TOL. (%) | D <sub>MAX.</sub><br>(mm) | LEAD SPACING<br>F<br>(mm) | SH/DR <sub>MAX.</sub> <sup>(1)</sup><br>(mm) | CLEAR TEXT CODE                                         |
|---------------|----------|---------------------------|---------------------------|----------------------------------------------|---------------------------------------------------------|
|               |          |                           |                           |                                              | 13 <sup>TH</sup> DIGIT:<br>T = REEL; U = AMMO; 3 = BULK |
| CLASS 1 N 750 |          |                           |                           |                                              |                                                         |
| 100           | ± 2      | 7.5                       | 5.0                       | 4.0                                          | D101G29U2JH6.J5R                                        |
|               |          |                           | 2.5                       | 1.5                                          | D101G29U2JH6.L2R                                        |
| 150           |          | 8.5                       | 5.0                       | 4.0                                          | D151G33U2JH6.J5R                                        |
|               |          |                           | 2.5                       | 1.5                                          | D151G33U2JH6.L2R                                        |
| 220           |          | 10                        | 5.0                       | 4.0                                          | D221G39U2JH6.J5R                                        |
|               |          |                           | 2.5                       | 1.5                                          | D221G39U2JH6.L2R                                        |
| 330           |          | 12                        | 5.0                       | 4.0                                          | D331G47U2JH6.J5R                                        |
|               |          |                           | 2.5                       | 1.5                                          | D331G47U2JH6.L2R                                        |

### Note

<sup>(1)</sup> SH = seated height; DR = run down

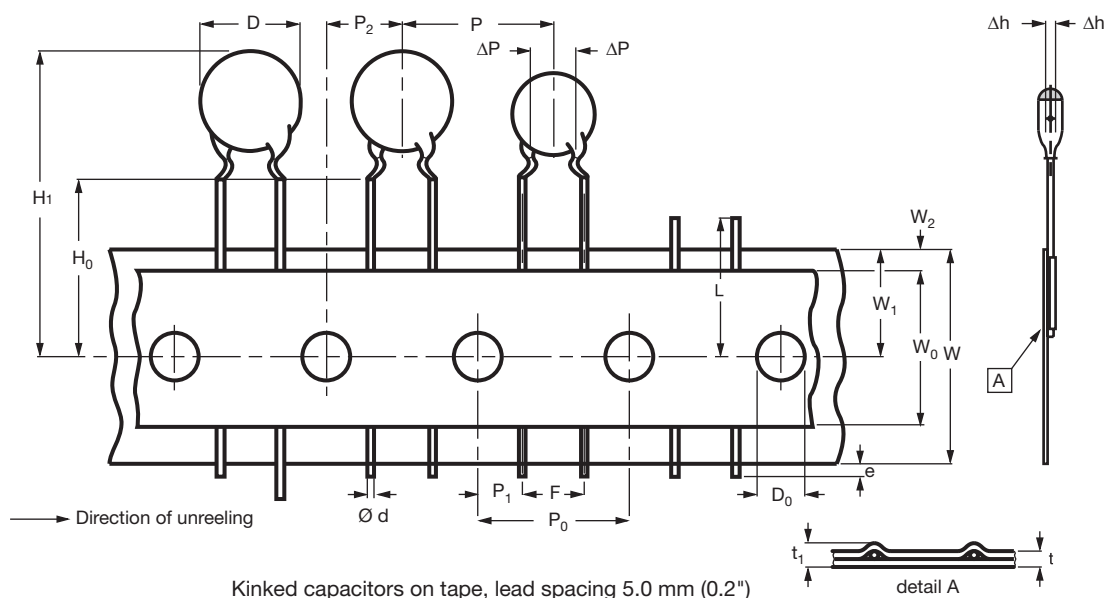
- 1. Maximum thickness 3.5 mm
- Lead style codes refer to inward kinked leads and straight leads

## PACKAGING

| D <sub>MAX.</sub> (mm) | SIZE CODE | PACKAGING QUANTITIES |      |      |
|------------------------|-----------|----------------------|------|------|
|                        |           | BULK                 | REEL | AMMO |
| 5.0 (0.20")            | 20        | 1000                 | 2500 | 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



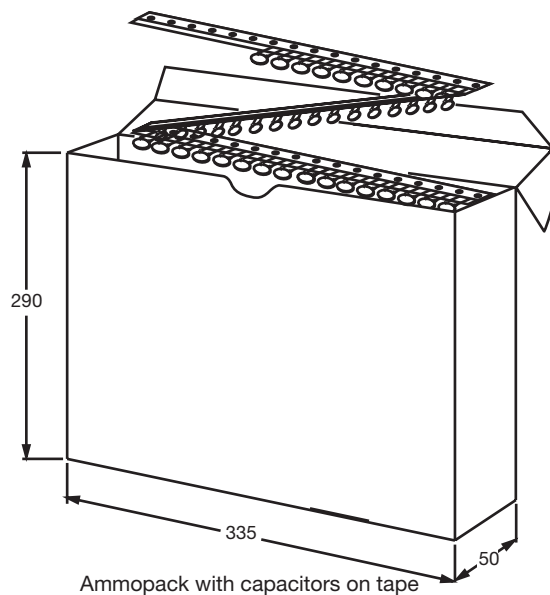
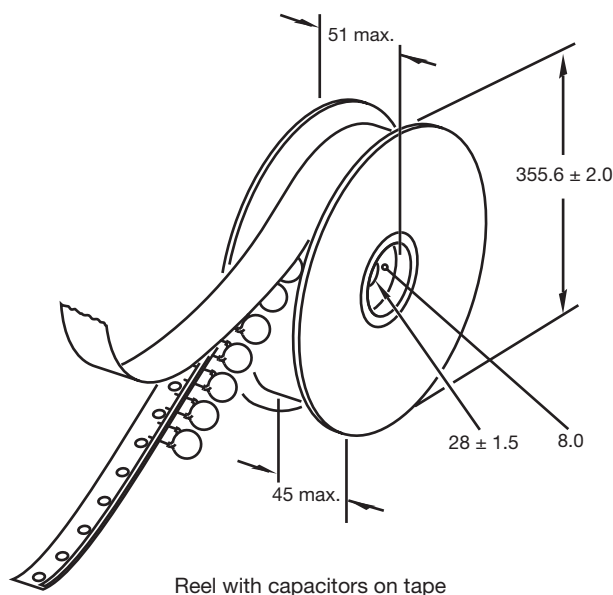
| DIMENSION OF TAPE             |                                      |                 |               |
|-------------------------------|--------------------------------------|-----------------|---------------|
| SYMBOL                        | PARAMETER                            | DIMENSIONS (mm) |               |
|                               |                                      | 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:  $\pm \leq 1 \text{ mm}/20 \text{ pitches}$

<sup>(2)</sup> Obliquity maximum 3°

## REEL AND TAPE DATA in millimeters



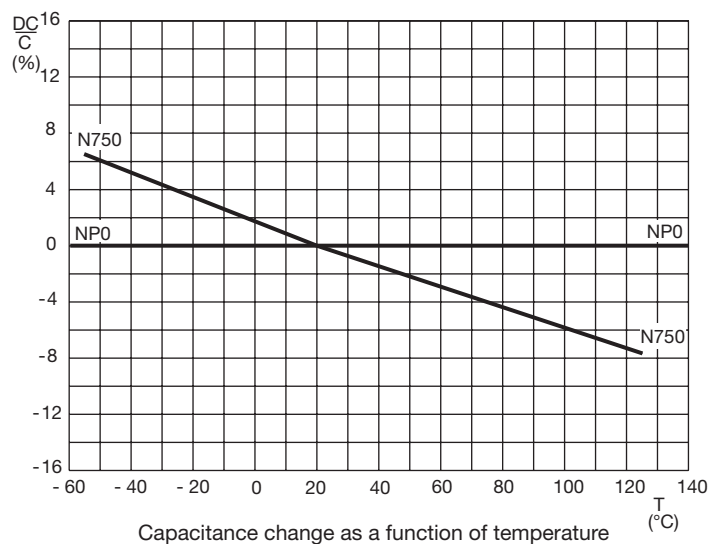
# D Series Narrow Tolerance

Vishay BCcomponents

Ceramic Disc Capacitors  
Class 1, 100 V<sub>DC</sub>, Narrow Tolerance



| TEMPERATURE COEFFICIENT IN ACCORDANCE WITH RS198 |            |            |
|--------------------------------------------------|------------|------------|
| C = 0.0                                          | 0 = - 1    | G = ± 30   |
| M = 1.0                                          | 1 = - 10   | H = ± 60   |
| P = 1.5                                          | 2 = - 100  | J = ± 120  |
| R = 2.2                                          | 3 = - 1000 | K = ± 250  |
| S = 3.3                                          | 5 = + 1    | L = ± 500  |
| T = 4.7                                          | 6 = + 10   | M = ± 1000 |
| U = 7.5                                          | 7 = + 100  | N = ± 2500 |
| -                                                | 8 = + 1000 | -          |





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