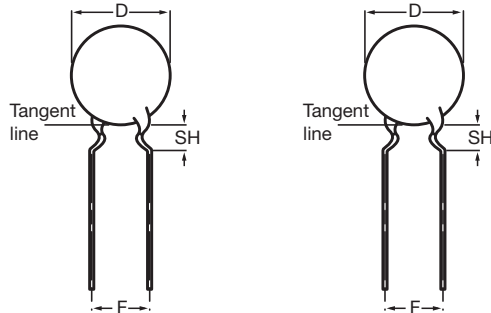


## Ceramic Disc Capacitors Class 1 and 2, 500 V<sub>DC</sub>, General Purpose



Capacitors with 5 mm (0.20") and 7.5 mm (0.30") lead spacing

| QUICK REFERENCE DATA       |                                |                                 |
|----------------------------|--------------------------------|---------------------------------|
| DESCRIPTION                | CLASS 1<br>(C0G (NP0),<br>SL0) | CLASS 2<br>(Y5P, Z5U, Y5V, X5F) |
| Voltage (V <sub>DC</sub> ) | 500                            |                                 |
| Min. Capacitance (pF)      | 10                             | 100                             |
| Max. Capacitance (pF)      | 82                             | 22 000                          |
| Mounting                   | Through hole                   |                                 |

**MARKING**

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

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.

**OPERATING TEMPERATURE RANGE**

Class 1, - 55 °C to + 125 °C

Class 2, - 55 °C to + 85 °C

**TEMPERATURE COEFFICIENTS**

Class 1, C0G (NP0); SL0

Class 2, Y5P; Z5U; Y5V; X5F

**SECTIONAL SPECIFICATIONS**

Class 1, IEC 60 384-8

Class 2, IEC 60 384-9

EIA 198

**CLIMATIC CATEGORY**

Class 1, 55/125/21

Class 2, 10/85/21, 30/85/21 and 55/85/21

**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") or 7.5 mm (0.300") 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>; 10 pF to 82 pF

Class 2, at 1 kHz, 1 ± 0.2 V<sub>RMS</sub>; 100 pF to 22 000 pF

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

**RATED DC VOLTAGE**

500 V

**DIELECTRIC STRENGTH**

250 % of rated voltage

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

≥ 10 000 MΩ

**TOLERANCE ON CAPACITANCE**

± 5 %; ± 10 %; ± 20 %; + 80/- 20 %

**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 %

Class 2, ≤ 3.0 %



Ceramic Disc Capacitors  
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| <b>ORDERING INFORMATION (PREFERRED TYPES), CLASS 1, 500 V<sub>DC</sub>, KINKED</b> |          |                        |                   |                        |  |
|--|----------|------------------------|-------------------|------------------------|--|
| C (pF)   | TOL. (%) | D <sub>MAX.</sub> (mm) | LEAD SPACING (mm) | SH <sup>(1)</sup> (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 |
| <b>CLASS 1 NP0</b>   |          |                        |                   |                        |  |
| 10   | ± 5      | 5.0                    | 5.0               | 4.0                    | D100J20C0GL6.J5.   |
| 12   |          |                        |                   |                        | D120J20C0GL6.J5.   |
| 15   |          |                        |                   |                        | D150J20C0GL6.J5.   |
| 18   |          | D180J25C0GL6.J5.       |                   |                        |  |
| 22   |          | D220J25C0GL6.J5.       |                   |                        |  |
| 27   |          | D270J25C0GL6.J5.       |                   |                        |  |
| <b>CLASS 1 SL0</b>   |          |                        |                   |                        |  |
| 33   | ± 5      | 5.0                    | 5.0               | 4.0                    | D330J20SL0L6.J5.   |
| 39   |          |                        |                   |                        | D390J20SL0L6.J5.   |
| 47   |          |                        |                   |                        | D470J20SL0L6.J5.   |
| 56   |          | D560J20SL0L6.J5.       |                   |                        |  |
| 68   |          | D680J25SL0L6.J5.       |                   |                        |  |
| 82   |          | D820J25SL0L6.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

| <b>ORDERING INFORMATION (PREFERRED TYPES), CLASS 2, 500 V<sub>DC</sub>, KINKED</b> |           |                        |                   |                        |  |
|--|-----------|------------------------|-------------------|------------------------|--|
| C (pF)   | TOL. (%)  | D <sub>MAX.</sub> (mm) | LEAD SPACING (mm) | SH <sup>(1)</sup> (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 |
| <b>CLASS 2 Y5P</b>   |           |                        |                   |                        |  |
| 100  | ± 10      | 5                      | 5                 | 4.0                    | D101K20Y5PL6.J5.   |
| 150  |           |                        |                   |                        | D151K20Y5PL6.J5.   |
| 220  |           |                        |                   |                        | D221K20Y5PL6.J5.   |
| 330  |           |                        |                   |                        | D331K20Y5PL6.J5.   |
| 470  |           |                        |                   |                        | D471K20Y5PL6.J5.   |
| 680  |           |                        |                   |                        | D681K25Y5PL6.J5.   |
| 1000   |           | D102K25Y5PL6.J5.       |                   |                        |  |
| 1500   |           | D152K29Y5PL6.J5.       |                   |                        |  |
| 2200   |           | D222K33Y5PL6.J5.       |                   |                        |  |
| 3300   |           | D332K39Y5PL6.J5.       |                   |                        |  |
| 4700   |           | D472K43Y5PL6.J5.       |                   |                        |  |
| 6800   |           | D682K53Y5PL6.J7        |                   |                        |  |
| 10 000   |           | D103K69Y5PL6.J7.       |                   |                        |  |
| <b>CLASS 2 Y5V</b>   |           |                        |                   |                        |  |
| 1000   | + 80/- 20 | 5                      | 5                 | 4.0                    | D102Z20Y5VL6.J5.   |
| 1500   |           |                        |                   |                        | D152Z20Y5VL6.J5.   |
| 2200   |           |                        |                   |                        | D222Z25Y5VL6.J5.   |
| 3300   |           | D322Z25Y5VL6.J5.       |                   |                        |  |
| 4700   |           | D472Z29Y5VL6.J5.       |                   |                        |  |
| 6800   |           | D682Z33Y5VL6.J5.       |                   |                        |  |
| 10 000   |           | D103Z39Y5VL6.J5.       |                   |                        |  |
| 15 000   |           | D153Z43Y5VL6.J5.       |                   |                        |  |
| 22 000   |           | D223Z53Y5VL6.J7.       |                   |                        |  |
|  |           |                        |                   |                        | 13.5   |

| ORDERING INFORMATION (PREFERRED TYPES), CLASS 2, 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 |                    |
| <b>CLASS 2 Z5U</b>  |             |                           |                      |                           |  |                    |
| 1000  | ± 20        | 5.0                       | 5.0                  | 4.0                       | D102M20Z5UL6.J5.   |                    |
| 1500  |             |                           |                      |                           | D152M25Z5UL6.J5.   |                    |
| 2200  |             |                           |                      |                           | D222M25Z5UL6.J5.   |                    |
| 3300  |             |                           |                      |                           | 7.5  | D332M29Z5UL6.J5.   |
| 4700  |             |                           |                      |                           | 8.5  | D472M33Z5UL6.J5.   |
| 6800  |             | 10.0                      | D682M39Z5UL6.J5.     |                           |  |                    |
| 10 000  |             | 11.0                      | D103M43Z5UL6.J5.     |                           |  |                    |
| 15 000  |             | 13.5                      | D153M53Z5UL6.J7.     |                           |  |                    |
| 22 000  |             | 15.0                      | 7.5                  |                           | D223M59Z5UL6.J7.   |                    |
| <b>CLASS 2 X5F</b>  |             |                           |                      |                           |  |                    |
| 1 00  | ± 10        | 5.0                       | 5.0                  | 4.0                       | D101K20X5FL6.J5.R.   |                    |
| 2 20  |             |                           |                      |                           | D221K20X5FL6.J5.R.   |                    |
| 330   |             |                           |                      |                           | D331K20X5FL6.J5.R.   |                    |
| 470   |             |                           |                      |                           | 6.5  | D471K25X5FL6.J5.R. |
| 680   |             |                           |                      |                           | 7.5  | D681K25X5FL6.J5.R. |
| 1000  |             | 10.0                      | D102K29X5FL6.J5.R.   |                           |  |                    |
| 2200  |             | 12.0                      | D222K39X5FL6.J5.R.   |                           |  |                    |
| 3300  |             | 13.5                      | 7.5                  |                           | D332K47X5FL6.J7R.  |                    |
| 4700  |             |                           |                      |                           | 4.8  | D472K53X5FL6.J7R.  |

**Note**

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

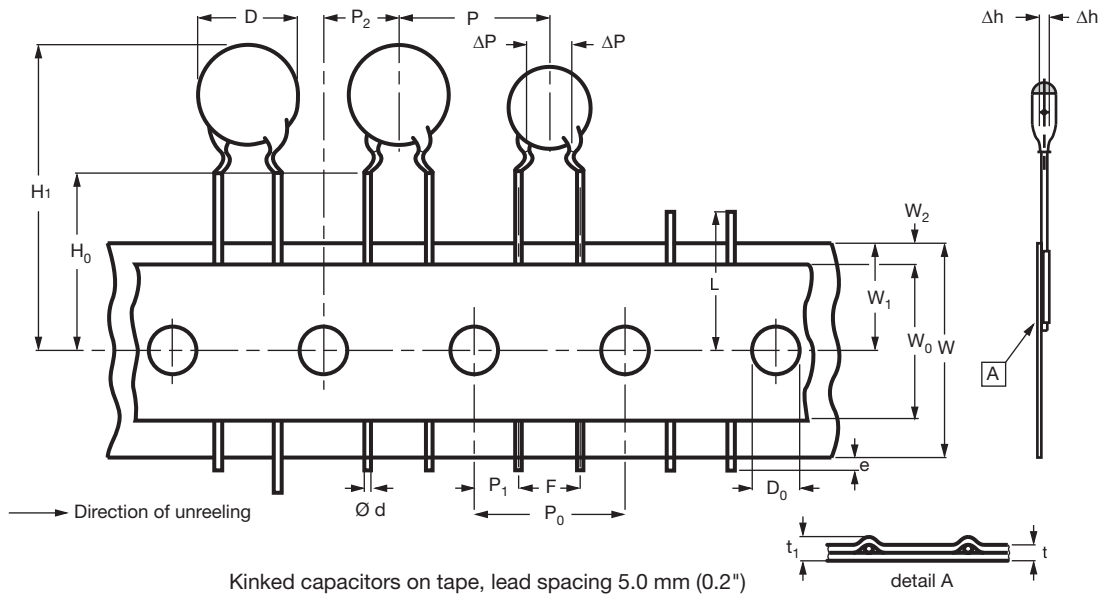
| PACKAGING                 |           |                      |      |      |
|---------------------------|-----------|----------------------|------|------|
| D <sub>MAX.</sub><br>(mm) | SIZE CODE | PACKAGING QUANTITIES |      |      |
|                           |           | BULK                 | 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        | 500                  | -    | -    |
| 13.5 (0.53")              | 53        |                      |      |      |
| 15.0 (0.59")              | 59        |                      |      |      |
| 17.5 (0.69")              | 69        |                      |      |      |

**Note**

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

Ceramic Disc Capacitors  
Class 1 and 2, 500 V<sub>DC</sub>, General Purpose

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| DIMENSIONS OF TAPE            |                                      |                 |               |
|-------------------------------|--------------------------------------|-----------------|---------------|
| SYMBOL                        | PARAMETER                            | DIMENSIONS (mm) |               |
|                               |                                      | NOMINAL         | TOLERANCE     |
| D                             | Body diameter                        | 11.0 maximum    | -             |
| d                             | Lead diameter                        | 0.6             | ± 0.05        |
| P <sup>(1)</sup>              | Pitch between capacitors             | 12.7            | ± 1.0         |
| P <sub>0</sub>                | 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°

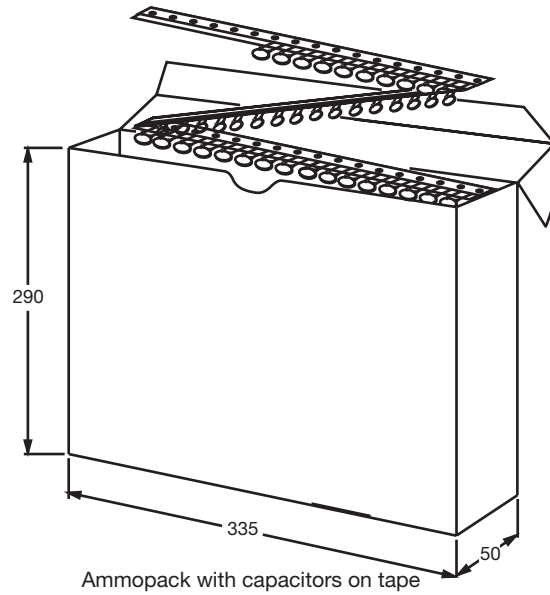
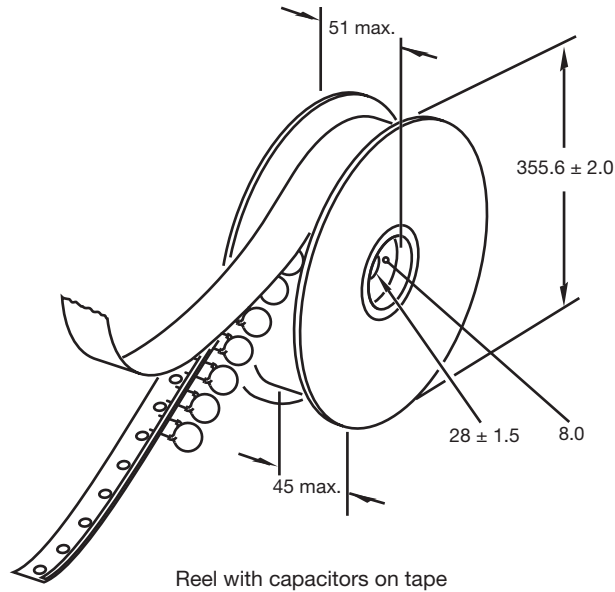
# D Series

Vishay BCcomponents

Ceramic Disc Capacitors  
Class 1 and 2, 500 V<sub>DC</sub>, General Purpose



## REEL AND TAPE DATA in millimeters





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- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
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- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.