

Ceramic Disc Capacitors

Class 2, 500 V_{DC}, 1 kV_{DC}, General Purpose



| QUICK REFERENCE DATA | |
|----------------------------|----------------------|
| DESCRIPTION | CLASS 2 (X7R) |
| Voltage (V _{DC}) | 500, 1000 |
| Min. Capacitance (pF) | 1000 |
| Max. Capacitance (pF) | 4700 |
| 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 2, - 55 °C to +125 °C

TEMPERATURE COEFFICIENTS

Class 2, X7R

SECTIONAL SPECIFICATIONS

Class 2, IEC 60 384-9,
EIA 198

CLIMATIC CATEGORY

Class 2, 55/125/21

FEATURES

- High capacitance in small size
- Kinked (preferred) or straight leads
- Compliant to RoHS Directive 2011/65/EU



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 for 500 V_{DC} and epoxy resin for 1 kV_{DC}.

CAPACITANCE RANGE

Class 2, at 1 kHz, 1 V_{RMS} ± 0.2 V_{RMS}; 1000 pF to 4700 pF

RATED DC VOLTAGE

500 V and 1 kV

DIELECTRIC STRENGTH

250 % of rated voltage for 500 V_{DC}
200 % of rated voltage for 1 kV_{DC}

INSULATION RESISTANCE AT 500 V_{DC}

≥ 10 000 MΩ

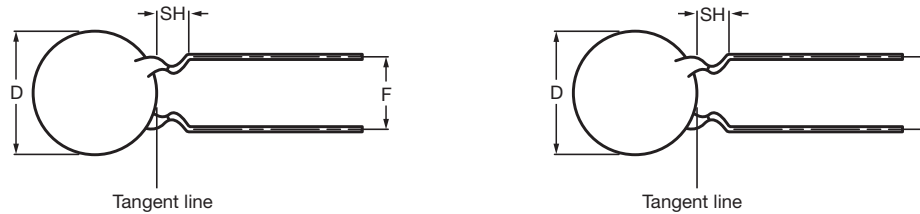
TOLERANCE ON CAPACITANCE

± 10 %; ± 20 %

DISSIPATION FACTOR

Class 2, ≤ 2.5 %

DIMENSIONS



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

ORDERING INFORMATION (PREFERRED TYPES), CLASS 2, 500 V_{DC}, KINKED

| C (pF) | TOL. (%) | D _{MAX.} (mm) | LEAD SPACING (mm) | SH ⁽¹⁾ (mm) | CLEAR TEXT CODE |
|--------------------|-------------|---------------------------|----------------------|---------------------------|---|
| | | | | | 13 TH DIGIT: T = REEL; U = AMMO; 3 = BULK |
| CLASS 2 X7R | | | | | |
| 1000 | ± 10 | 6.5 | 5.0 | 4.0 | H102K25X7RL6.J5R |
| 1500 | | 7.5 | | | H152K29X7RL6.J5R |
| 2200 | | 8.5 | | | H222K33X7RL6.J5R |
| 3300 | | 10 | | | H332K39X7RL6.J5R |
| 4700 | | 12 | 7.5 | | H472K47X7RL6.J7R |

Notes

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

ORDERING INFORMATION (PREFERRED TYPES), CLASS 2, 1 kV_{DC}, KINKED

| C (pF) | TOL. (%) | D _{MAX.} (mm) | LEAD SPACING (mm) | SH ⁽¹⁾ (mm) | CLEAR TEXT CODE |
|--------------------|-------------|---------------------------|----------------------|---------------------------|---|
| | | | | | 13 TH DIGIT: T = REEL; U = AMMO; 3 = BULK |
| CLASS 2 X7R | | | | | |
| 1000 | ± 10 | 6.5 | 5.0 | 4.0 | H102K25X7RN6.J5R |
| 1500 | | 8 | | | H152K31X7RN6.J5R |
| 2200 | | 9 | | | H222K35X7RN6.J5R |
| 3300 | | 10.5 | | | H332K41X7RN6.J5R |
| 4700 | | 12 | 7.5 | | H472K47X7RN6.J7R |

Notes

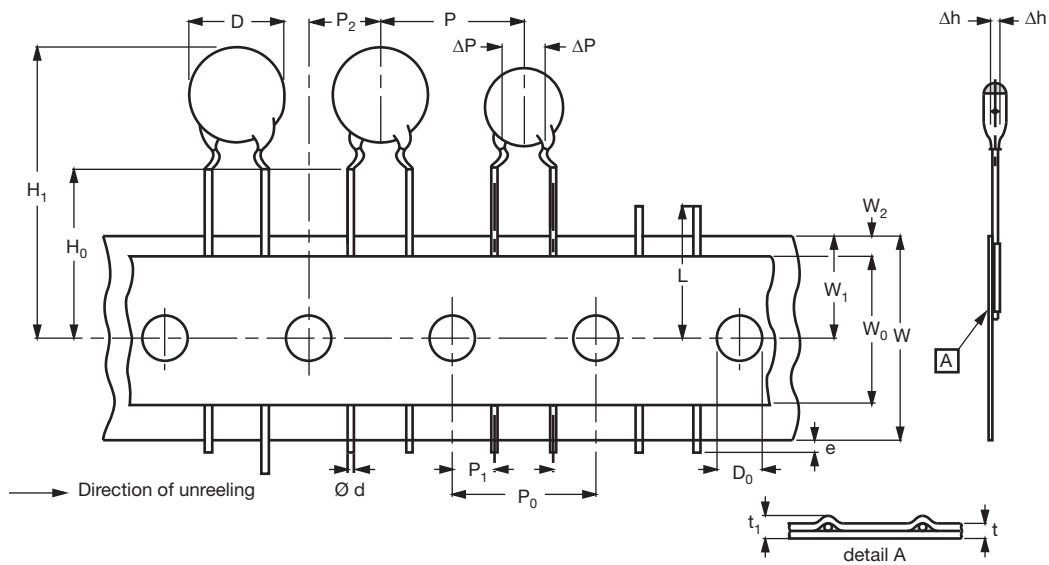
- ⁽¹⁾ SH = Seated height
- Maximum thickness 4.0 mm
- Lead style codes refer to inward kinked leads. Other styles available on request

PACKAGING

| D _{MAX.} (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 ammopack.



Kinked capacitors on tape, lead spacing 5.0 mm (0.2")

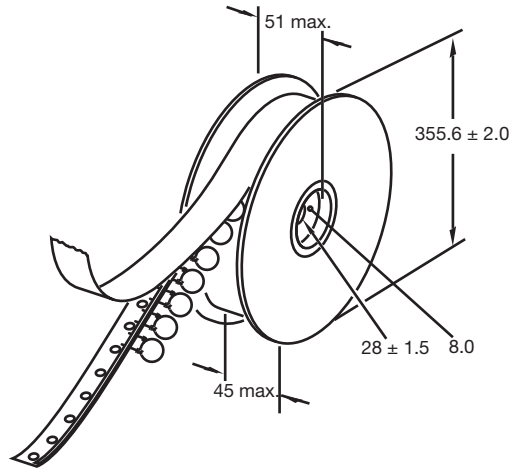
| DIMENSIONS OF TAPE | | | |
|-------------------------------|--------------------------------------|-----------------|---------------|
| SYMBOL | PARAMETER | DIMENSIONS (mm) | |
| | | NOMINAL | TOLERANCE |
| D | Body diameter | 11.0 maximum | - |
| d | Lead diameter | 0.6 | ± 0.05 |
| P | Pitch between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

Notes

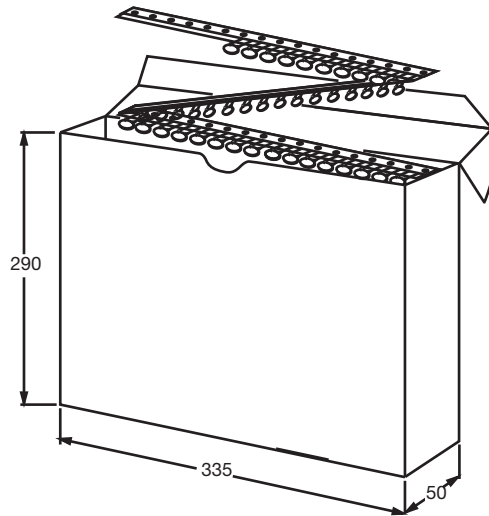
- (1) Cumulative pitch error: ± ≤ 1 mm/20 pitches
 (2) Obliquity maximum 3°



REEL AND TAPE DATA in millimeters



Reel with capacitors on tape



Ampopack with capacitors on tape



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