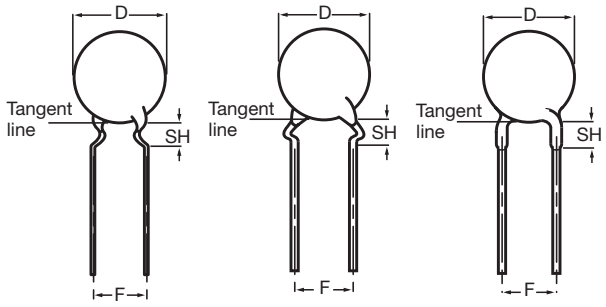
# Ceramic Disc Capacitors Class 1 and 2, 1 $kV_{DC}$, 2 $kV_{DC}$, 3 $kV_{DC}$ and 6 $kV_{DC}$, General Purpose




Capacitors with 5 mm (0.20"), 7.5 mm (0.30") and 10 mm (0.40") lead spacing

## FEATURES

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

Pb e3 RoHS COMPLIANT

## APPLICATIONS

- DC high voltage
- Pulse high voltage
- SMPS
- HV power supply
- HF ballast

| QUICK REFERENCE DATA | | |
|---|---|---|
| **DESCRIPTION** | **CLASS 1 (SL0, S3N)** | **CLASS 2 (Y5P, X7R, Z5U, Y5V, X5F)** |
| Voltage ($V_{DC}$) | 1000, 2000, 3000, 6000 | |
| Min. Capacitance (pF) | 10 | 100 |
| Max. Capacitance (pF) | 220 | 33 000 |
| Mounting | Through hole | |

## MARKING

Straight and kinked leaded versions are gold coloured Marking indicates capacitance value and tolerance in accordance with “EIA 198” and voltage:

## OPERATING TEMPERATURE RANGE

Class 1 SL0, S3N, - 55 °C to + 125 °C

Class 2, X7R - 55 °C to + 125 °C

Class 2, Y5P, Z5U, Y5V, - 30 °C to + 85 °C

Class 2, X5F - 55 °C to + 85 °C

## TEMPERATURE COEFFICIENTS

Class 1 SL0, S3N

Class 2 X7R, Y5P, Z5U, Y5V, X5F

## SECTIONAL SPECIFICATIONS

Class 1, IEC 60 384-8,

Class 2, IEC 60 384-9,

EIA 198

## CLIMATIC CATEGORY

Class 1, SL0, 55/125/21

Class 2, X7R, 55/125/21

Class 2, Y5P, Z5U, Y5V, 30/85/21

Class 2, X5F, 55/85/21

## 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 or 0.8 mm up to 3 kV and 0.8 mm for 6 kV.

The capacitors may be supplied with kinked or straight leads with a lead spacing of 5 mm (0.20"), 7.5 mm (0.30") or 10 mm (0.40") and a lead length from 4 mm to 30 mm. The standard tolerance on capacitance is 5 % or 10 % for class 1 capacitors and ± 10 % or ± 20 % for class 2 capacitors. Encapsulation is made of gold-colored epoxy-resin, flammable resistant in accordance with “UL 94 V-0”

## CAPACITANCE RANGE

Class 1, at 1 MHz, 1.2 $V_{RMS}$ ; 10 pF to 220 pF

1 kHz, 1 $V_{RMS}$ ± 0.2 $V_{RMS}$ for capacitance values higher than 1000 pF

Class 2, at 1 kHz, 1 $V_{RMS}$ ± 0.2 $V_{RMS}$ ; 100 pF to 33 000 pF

## RATED DC VOLTAGE

1 kV; 2 kV; 3 kV; 6 kV

## DIELECTRIC STRENGTH

200 % of rated voltage

## INSULATION RESISTANCE AT 500 $V_{DC}$

≥ 10 000 MΩ

## TOLERANCE ON CAPACITANCE

± 5 %; ± 10 %; ± 20 %; + 80/- 20 %

Other tolerances available on request

## DISSIPATION FACTOR

Class 1, C ≤ 30 pF; ≤ 20 x (10/C + 0.7) x $10^{-4}$ max.

Class 1, C > 30 pF; ≤ 0.2 %

Class 2, ≤ 3.0 %

## ORDERING INFORMATION 1 $kV_{DC}$, STRAIGHT

| C (pF) | TOL. (%) | $D_{MAX.}$ (mm) | LEAD SPACING (mm) | SH [1] (mm) | CLEAR TEXT CODE<br>13TH DIGIT: T = REEL; U = AMMO; 3 = BULK<br>16TH DIGIT: R = RoHS COMPLIANT |
|---|---|---|---|---|---|
| **CLASS 1 SL0** | | | | | |
| 10 | ± 5 | 6.5 | 5.0 | 4.0 | S100J25SL0N6.J5. |
| | ± 10 | | | | S100K25SL0N6.J5. |
| 12 | ± 5 | | | | S120J25SL0N6.J5. |
| | ± 10 | | | | S120K25SL0N6.J5. |
| 15 | ± 5 | | | | S150J25SL0N6.J5. |
| | ± 10 | | | | S150K25SL0N6.J5. |
| 18 | ± 5 | | | | S180J25SL0N6.J5. |
| | ± 10 | | | | S180K25SL0N6.J5. |
| 22 | ± 5 | | | | S220J25SL0N6.J5. |
| | ± 10 | | | | S220K25SL0N6.J5. |
| 27 | ± 5 | | | | S270J25SL0N6.J5. |
| | ± 10 | | | | S270K25SL0N6.J5. |
| 33 | ± 5 | | | | S330J25SL0N6.J5. |
| | ± 10 | | | | S330K25SL0N6.J5. |
| 39 | ± 5 | | | | S390J25SL0N6.J5. |
| | ± 10 | | | | S390K25SL0N6.J5. |
| 47 | ± 5 | | | | S470J25SL0N6.J5. |
| | ± 10 | | | | S470K25SL0N6.J5. |
| 56 | ± 5 | 7.5 | | | S560J29SL0N6.J5. |
| | ± 10 | | | | S560K29SL0N6.J5. |
| 68 | ± 5 | | | | S680J29SL0N6.J5. |
| | ± 10 | | | | S680K29SL0N6.J5. |
| 82 | ± 5 | | | | S820J29SL0N6.J5. |
| | ± 10 | | | | S820K29SL0N6.J5. |
| 100 | ± 5 | | | | S101J29SL0N6.J5. |
| | ± 10 | | | | S101K29SL0N6.J5. |
| 120 | ± 5 | 8.5 | | | S121J33SL0N6.J5. |
| | ± 10 | | | | S121K33SL0N6.J5. |
| 150 | | 10 | | | S151K33SL0N6.J5. |
| 220 | | | | | S221K39SL0N6.J5. |
| **CLASS 2 X7R** | | | | | |
| 100 | ± 10 | 6.5 | 5.0 | 4.0 | S101K25X7RN6.J5. |
| 150 | | | | | S151K25X7RN6.J5. |
| 220 | | | | | S221K25X7RN6.J5. |
| 330 | | | | | S331K25X7RN6.J5. |
| 470 | | 7.5 | | | S471K29X7RN6.J5. |
| 680 | | | | | S681K29X7RN6.J5. |
| 1000 | | 8.5 | | | S102K33X7RN6.J5. |
| 1500 | | 10 | | | S152K39X7RN6.J5. |
| 2200 | | 11 | | | S222K43X7RN6.J5. |
| 3 300 | | 12 | 7.5 | | S332K47X7RN6.J7. |
| 4 700 | | 15 | | 4.8 | S472K59X7RN6.J7. |
| **CLASS 2 Y5P** | | | | | |
| 100 | ± 10 | 6.5 | 5.0 | 4.0 | S101K25Y5PN6.J5. |
| 150 | | | | | S151K25Y5PN6.J5. |
| 220 | | | | | S221K25Y5PN6.J5. |
| 330 | | | | | S331K25Y5PN6.J5. |
| 470 | | | | | S471K25Y5PN6.J5. |
| 680 | | 7.5 | | | S681K29Y5PN6.J5. |
| 1000 | | | | | S102K29Y5PN6.J5. |
| 1500 | | 8.5 | | | S152K33Y5PN6.J5. |

## ORDERING INFORMATION 1 $kV_{DC}$, STRAIGHT

| C (pF) | TOL. (%) | $D_{MAX.}$ (mm) | LEAD SPACING (mm) | SH [1] (mm) | CLEAR TEXT CODE<br>13TH DIGIT:<br>T = REEL; U = AMMO; 3 = BULK<br>16TH DIGIT:<br>R = RoHS COMPLIANT |
|---|---|---|---|---|---|
| **CLASS 2 Y5P** | | | | | |
| 2200 | ± 10 | 10 | 5.0 | 4.0 | S222K39Y5PN6.J5. |
| 3300 | | 11 | | | S332K43Y5PN6.J5. |
| 4700 | | 13.5 | 7.5 | 4.8 | S472K53Y5PN63J7. |
| 6800 | | 15 | | | S682K59Y5PN63J7. |
| 10 000 | | 19 | 10 | | S103K75Y5PN83J0. |
| **CLASS 2 Z5U** | | | | | |
| 1000 | ± 20 | 6.5 | 5.0 | 4.0 | S102M25Z5UN6.J5. |
| 1500 | | | | | S152M29Z5UN6.J5. |
| 2200 | | | | | S222M29Z5UN6.J5. |
| 3300 | | 8.5 | | | S332M33Z5UN6.J5. |
| 4700 | | 10 | | | S472M39Z5UN6.J5. |
| 6800 | | 11 | | | S682M43Z5UN6.J5. |
| 10 000 | | 12 | 7.5 | 4.8 | S103M47Z5UN63J7. |
| 15 000 | | 15 | | | S153M59Z5UN63J7. |
| 22 000 | | 19 | 10 | | S223M75Z5UN83J0. |
| **CLASS 2 Y5V** | | | | | |
| 1000 | + 80/- 20 | 6.5 | 5.0 | 4.0 | S102Z25Y5VN6.J5. |
| 1500 | | | | | S152Z25Y5VN6.J5. |
| 2200 | | 7.5 | | | S222Z29Y5VN6.J5. |
| 3300 | | | | | S332Z29Y5VN6.J5. |
| 4700 | | 8.5 | | | S472Z33Y5VN6.J5. |
| 6800 | | 10 | | | S682Z39Y5VN6.J5. |
| 10 000 | | 11 | | | S103Z43Y5VN6.J5. |
| 15 000 | | 13.5 | 7.5 | 4.8 | S153Z53Y5VN6.J7. |
| 22 000 | | 15 | | | S223Z59Y5VN6.J7. |
| 33 000 | | 19 | 10 | | S333Z75Y5VN8.J0. |

## ORDERING INFORMATION 1 $kV_{DC}$, KINKED

| C (pF) | TOL. (%) | $D_{MAX.}$ (mm) | LEAD SPACING (mm) | SH [2] (mm) | CLEAR TEXT CODE<br>13TH DIGIT:<br>T = REEL; U = AMMO; 3 = BULK<br>16TH DIGIT:<br>R = RoHS COMPLIANT |
|---|---|---|---|---|---|
| **CLASS 2 X5F** | | | | | |
| 100 | ± 10 | 6.5 | 5.0 | 4.0 | S101K25X5FN6.J5R |
| 220 | | | | | S221K25X5FN6.J5R |
| 270 | | | | | S271K25X5FN6.J5R |
| 330 | | | | | S331K25X5FN6.J5R |
| 390 | | | | | S391K25X5FN6.J5R |
| 470 | | | | | S471K25X5FN6.J5R |
| 680 | | 7.5 | | | S681K29X5FN6.J5R |
| 820 | | | | | S821K29X5FN6.J5R |
| 1000 | | | | | S102K29X5FN6.J5R |
| 2200 | | 11 | | | S222K43X5FN6.J5R |
| 3300 | | 13.5 | 7.5 | 4.8 | S332K53X5FN6.J7R |
| 4700 | | 16 | | | S472K63X5FN63J7R |

**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 2 $kV_{DC}$, KINKED

| C (pF) | TOL. (%) | $D_{MAX.}$ (mm) | LEAD SPACING (mm) | SH (1) (mm) | CLEAR TEXT CODE<br>13TH DIGIT:<br>T = REEL; U = AMMO; 3 = BULK<br>16TH DIGIT:<br>R = RoHS COMPLIANT |
|---|---|---|---|---|---|
| **CLASS 1 SL0** | | | | | |
| 10 | ± 5 | 6.5 | 5.0 | 4.0 | S100J25SL0P6.K5. |
| | ± 10 | | | | S100K25SL0P6.K5. |
| 12 | ± 5 | | | | S120J25SL0P6.K5. |
| | ± 10 | | | | S120K25SL0P6.K5. |
| 15 | ± 5 | | | | S150J25SL0P6.K5. |
| | ± 10 | | | | S150K25SL0P6.K5. |
| 18 | ± 5 | | | | S180J25SL0P6.K5. |
| | ± 10 | | | | S180K25SL0P6.K5. |
| 22 | ± 5 | | | | S220J25SL0P6.K5. |
| | ± 10 | | | | S220K25SL0P6.K5. |
| 27 | ± 5 | | | | S270J25SL0P6.K5. |
| | ± 10 | | | | S270K25SL0P6.K5. |
| 33 | ± 5 | 7.5 | | | S330J29SL0P6.K5. |
| | ± 10 | | | | S330K29SL0P6.K5. |
| 39 | ± 5 | | | | S390J29SL0P6.K5. |
| | ± 10 | | | | S390K29SL0P6.K5. |
| 47 | ± 5 | | | | S470J29SL0P6.K5. |
| | ± 10 | | | | S470K29SL0P6.K5. |
| 56 | ± 5 | | | | S560J29SL0P6.K5. |
| | ± 10 | | | | S560K29SL0P6.K5. |
| 68 | ± 5 | 8.5 | | | S680J33SL0P6.K5. |
| | ± 10 | | | | S680K33SL0P6.K5. |
| 82 | ± 5 | | | | S820J33SL0P6.K5. |
| | ± 10 | | | | S820K33SL0P6.K5. |
| 100 | ± 5 | 10 | | | S101J39SL0P6.K5. |
| | ± 10 | | | | S101K39SL0P6.K5. |
| 120 | ± 5 | | | | S121J39SL0P6.K5. |
| | ± 10 | | | | S121K39SL0P6.K5. |
| 150 | ± 10 | 11 | | | S151K43SL0P6.K5. |
| **CLASS 2 X7R** | | | | | |
| 100 | ± 10 | 6.5 | 5.0 | 4.0 | S101K25X7RP6.K5. |
| 150 | | | | | S151K25X7RP6.K5. |
| 220 | | | | | S221K25X7RP6.K5. |
| 330 | | | | | S331K25X7RP6.K5. |
| 470 | | 7.5 | | | S471K29X7RP6.K5. |
| 680 | | 8.5 | | | S681K33X7RP6.K5. |
| 1000 | | 10 | | | S102K39X7RP6.K5. |
| 1500 | | 11 | | | S152K43X7RP6.K5. |
| 2200 | | 13.5 | 7.5 | 4.8 | S222K53X7RP6.K7. |
| 3300 | | 15 | | | S332K59X7RP6.K7. |
| **CLASS 2 Y5P** | | | | | |
| 100 | ± 10 | 6.5 | 5.0 | 4.0 | S101K25Y5PP6.K5. |
| 150 | | | | | S151K25Y5PP6.K5. |
| 220 | | | | | S221K25Y5PP6.K5. |
| 330 | | | | | S331K25Y5PP6.K5. |
| 470 | | 7.5 | | | S471K29Y5PP6.K5. |
| 680 | | | | | S681K29Y5PP6.K5. |
| 1000 | | 8.5 | | | S102K33Y5PP6.K5. |
| 1500 | | 10 | | | S152K39Y5PP6.K5. |
| 2200 | | 11 | | | S222K43Y5PP6.K5. |
| 3300 | | 13.5 | 7.5 | 4.8 | S332K53Y5PP63K7. |
| 4700 | | 17.5 | | | S472K69Y5PP63K7. |

## ORDERING INFORMATION 2 $kV_{DC}$, KINKED

| C (pF) | TOL. (%) | $D_{MAX.}$ (mm) | LEAD SPACING (mm) | SH [1] (mm) | CLEAR TEXT CODE<br>13TH DIGIT: T = REEL; U = AMMO; 3 = BULK<br>16TH DIGIT: R = RoHS COMPLIANT |
|---|---|---|---|---|---|
| **CLASS 2 Z5U** | | | | | |
| 1000 | ± 20 | 7.5 | 5.0 | 4.0 | S102M29Z5UP6.K5. |
| 1500 | | | | | S152M29Z5UP6.K5. |
| 2200 | | 8.5 | | | S222M33Z5UP6.K5. |
| 3300 | | 11 | | | S332M43Z5UP6.K5. |
| 4700 | | 12 | 7.5 | 4.8 | S472M47Z5UP63K7. |
| 6800 | | 13.5 | | | S682M53Z5UP63K7. |
| 10 000 | | 17.5 | | | S103M69Z5UP63K7. |
| **CLASS 2 Y5V** | | | | | |
| 1000 | + 80/- 20 | 7.5 | 5.0 | 4.0 | S102Z29Y5VP6.K5. |
| 1500 | | | | | S152Z29Y5VP6.K5. |
| 2200 | | 8.5 | | | S222Z33Y5VP6.K5. |
| 3300 | | 10.5 | | | S322Z39Y5VP6.K5. |
| 4700 | | 11 | | | S472Z43Y5VP6.K5. |
| 6800 | | 12 | 7.5 | 4.8 | S682Z47Y5VP6.K7. |
| 10 000 | | 15 | | | S103Z59Y5VP6.K7. |
| **CLASS 2 X5F** | | | | | |
| 1 00 | ± 10 | 6.5 | 5.0 | 4.0 | S101K25X5FP6.K5R |
| 220 | | | | | S221K25X5FP6.K5R |
| 330 | | 7.5 | | | S331K29X5FP6.K5R |
| 470 | | 8 | | | S471K31X5FP6.K5R |
| 680 | | 10 | | | S681K39X5FP6.K5R |
| 1000 | | 11 | | | S102K43X5FP6.K5R |
| 2200 | | 15 | 7.5 | 4.8 | S222K59X5FP6.K7R |
| 3300 | | 16.5 | | | S332K65X5FP63K7R |

**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 CLASS 3 $kV_{DC}$, KINKED

| C (pF) | TOL. (%) | $D_{MAX.}$ (mm) | LEAD SPACING (mm) | SH [1] (mm) | CLEAR TEXT CODE<br>13TH DIGIT: T = REEL; U = AMMO; 3 = BULK<br>16TH DIGIT: R = RoHS COMPLIANT |
|---|---|---|---|---|---|
| **CLASS 1 SL** | | | | | |
| 10 | ± 10 | 8.5 | 7.5 | 4.0 | S100K33SL0R63K7. |
| 15 | | | | | S150K33SL0R63K7. |
| 22 | | | | | S220K33SL0R63K7. |
| 33 | | | | | S330K33SL0R63K7. |
| 47 | | | | | S470K33SL0R63K7. |
| 68 | | 10 | | | S680K39SL0R63K7. |
| **CLASS 2 X7R** | | | | | |
| 100 | ± 10 | 8.5 | 7.5 | 4.0 | S101K33X7RR63K7. |
| 150 | | | | | S151K33X7RR63K7. |
| 220 | | | | | S221K33X7RR63K7. |
| 330 | | | | | S331K33X7RR63K7. |
| 470 | | | | | S471K33X7RR63K7. |
| 680 | | 10 | | | S681K39X7RR63K7. |
| 1000 | | 11 | | | S102K43X7RR63K7. |
| 1500 | | 13.5 | | 4.8 | S152K53X7RR63K7. |
| 2200 | | 17.5 | | | S222K59X7RR83K7. |

## ORDERING INFORMATION CLASS 3 $kV_{DC}$, KINKED

| C (pF) | TOL. (%) | $D_{MAX.}$ (mm) | LEAD SPACING (mm) | SH [1] (mm) | CLEAR TEXT CODE<br>13TH DIGIT: T = REEL; U = AMMO; 3 = BULK<br>16TH DIGIT: R = RoHS COMPLIANT |
|---|---|---|---|---|---|
| **CLASS 2 Y5P** | | | | | |
| 100 | ± 10 | 8.5 | 7.5 | 4.0 | S101K33Y5PR63K7. |
| 150 | | | | | S151K33Y5PR63K7. |
| 220 | | | | | S221K33Y5PR63K7. |
| 330 | | | | | S331K33Y5PR63K7. |
| 470 | | | | | S471K33Y5PR63K7. |
| 680 | | 10 | | | S681K39Y5PR63K7. |
| 1000 | | 11 | | | S102K43Y5PR63K7. |
| 1500 | | 12 | | 4.8 | S152K47Y5PR63K7. |
| 2200 | | 15 | | | S222K59Y5PR63K7. |
| 3 300 | | 19 | 10 | | S332K75Y5PR83K0. |
| **CLASS 2 Z5U** | | | | | |
| 470 | ± 20 | 8.5 | 7.5 | 4.0 | S471M33Z5UR63K7. |
| 680 | | | | | S681M33Z5UR63K7. |
| 1000 | | | | | S102M33Z5UR63K7. |
| 1500 | | 10 | | | S152M39Z5UR63K7. |
| 2200 | | 11 | | | S222M43Z5UR63K7. |
| 3300 | | 13.5 | | 4.8 | S332M53Z5UR63K7. |
| 4700 | | 17.5 | | | S472M69Z5UR83K7. |
| **CLASS 2 Y5V** | | | | | |
| 1000 | + 80/- 20 | 8.5 | 7.5 | 4.0 | S102Z33Y5VR63K7. |
| 1500 | | | | | S152Z33Y5VR63K7. |
| 2200 | | 10 | | | S222Z39Y5VR63K7. |
| 3300 | | 11 | | | S322Z43Y5VR63K7. |
| 4700 | | 12 | | 4.8 | S472Z47Y5VR63K7. |
| 6800 | | 15 | | | S682Z59Y5VR63K7. |

**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 CLASS 6 $kV_{DC}$, KINKED

| C (pF) | TOL. (%) | $D_{MAX.}$ (mm) | LEAD SPACING (mm) | SH [1] (mm) | CLEAR TEXT CODE<br>13TH DIGIT: T = REEL; U = AMMO; 3 = BULK<br>16TH DIGIT: R = RoHS COMPLIANT |
|---|---|---|---|---|---|
| **CLASS 1 SL** | | | | | |
| 10 | ± 20 | 10 | 10 | 3.0 | S100M39SL0U83L0. |
| 15 | | | | | S150M43SL0U83L0. |
| 22 | | | | | S220M43SL0U83L0. |
| 33 | | 13.5 | | | S330M53SL0U83L0. |
| **CLASS 1 S3N** | | | | | |
| 47 | ± 20 | 11 | 10 | 3.0 | S470M43S3NU83L0. |
| 68 | | 13.5 | | | S680M53S3NU83L0. |
| 100 | | 15 | | | S101M59S3NU83L0. |
| 150 | | 15 | | | S151M59S3NU83L0. |
| **CLASS 2 Z5U** | | | | | |
| 220 | ± 20 | 10 | 10 | 3.0 | S221M39Z5UU83L0. |
| 330 | | 11 | | | S331M43Z5UU83L0. |
| 470 | | 12 | | | S471M47Z5UU83L0. |

## ORDERING INFORMATION CLASS 6 $kV_{DC}$, KINKED

| C (pF) | TOL. (%) | $D_{MAX.}$ (mm) | LEAD SPACING (mm) | SH [1] (mm) | CLEAR TEXT CODE<br>$13^{TH}$ DIGIT:<br>T = REEL; U = AMMO; 3 = BULK<br>$16^{TH}$ DIGIT:<br>R = RoHS COMPLIANT |
|---|---|---|---|---|---|
| **CLASS 2 Z5U** | | | | | |
| 680 | ± 20 | 13.5 | 10 | 3.0 | S681M53Z5UU83L0. |
| 1000 | | 15 | | | S102M59Z5UU83L0. |
| 1500 | | 17.5 | | | S152M69Z5UU83L0. |
| 2200 | | 19 | | | S222M75Z5UU83L0. |

**Notes**

[1] SH = seated height

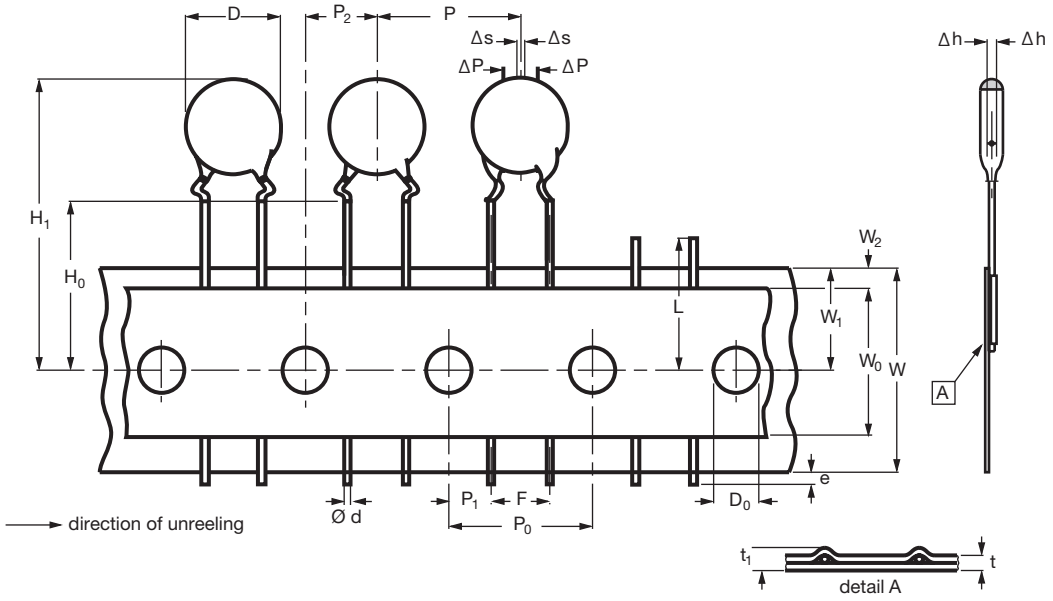
- Maximum thickness 4.0 mm
- Lead style codes refer to inward kinked leads. Other styles available on request

## PACKAGING

| PACKAGING TYPE | SIZE CODE | LEAD SPACE (mm) | VOLTAGE ($V_{DC}$) | SPQ | BOX DIMENSIONS L x W x H (mm) |
|---|---|---|---|---|---|
| Bulk (long lead L ≥ 25.4 mm | 20 to 47 | all | all | 1000 | 245 x 120 x 65 |
| | | | | 1000 | |
| | | | | 1000 | |
| | 53 to 75 | | | 500 | |
| | 84 to 96 | | | 250 | |
| Tape and reel | ≤ 47 | ≤ 6.40 | < 500 | 2500 | 370 x 370 x 60 |
| | | | 500 ≤ WV ≤ 2000 | 2000 | |
| | | | 3000 | 1000 | |
| | | ≥ 7.5 | all | 1000 | |
| Ammopack | ≤ 47 | ≤ 6.40 | < 500 | 2000 | 335 x 240 x 50 |
| | | | 500 ≤ WV < 2000 | 1500 | 335 x 290 x 50 |
| | | | 2000 and 3000 | 1500 | |
| | | ≥ 7.5 | all | 1500 | 360 x 330 x 55 |

**Note**

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



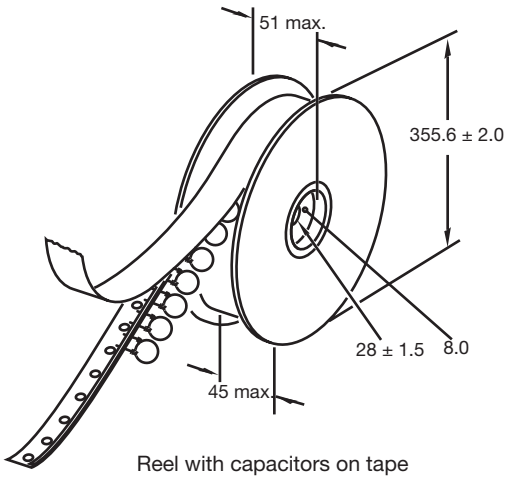
| DIMENSIONS OF TAPE | | | |
|---|---|---|---|
| SYMBOL | PARAMETER | DIMENSIONS (mm) | |
| | | NOMINAL | TOLERANCE |
| D | Body diameter | 11.0 maximum | - |
| d | Lead diameter | 0.6 | ± 0.05 |
| P | Pitch between capacitors | 12.7 | ± 1.0 |
| $P_0$ (1) | Feed-hole pitch | 12.7 | ± 0.3 |
| ΔP | Plane 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<br>- 0.4 |
| Δh | Component alignment | 0 | ± 1.0 |
| W | Tape width | 18.0 | 1.0<br>- 0.5 |
| $W_0$ | Hold-down tape width | 5.0 minimum | - |
| $W_1$ | Hole position | 9.0 | 0.75<br>- 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 snipped 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**

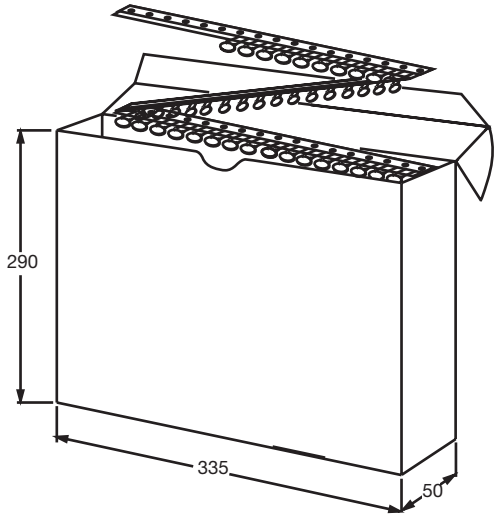
(1) Cumulative pitch error: ± ≤ 1 mm/20 pitches

(2) Obliquity maximum 3°

## **REEL AND TAPE DATA** in millimeters




Reel with capacitors on tape




Ammopack with capacitors on tape

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