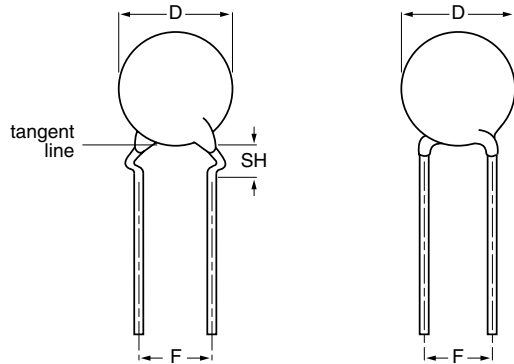




Ceramic Disc Capacitors Safety, Class X1/Y2 400/250 V (AC) Series DN



Capacitors with 7.5 mm (0.30")/10 mm (0.40") lead spacing

Obsolete - please refer to alternative VY2 series at:
www.vishay.com/doc?28535

INSULATION RESISTANCE AT 500 V (DC):

≥ 10 000 MΩ

TOLERANCE ON CAPACITANCE:

± 10 %; ± 20 %; - 20/+ 80 %

DISSIPATION FACTOR:

at 1 kHz; 1 V (RMS); 2.5 % max

TEMPERATURE COEFFICIENTS:

U2M; Y5P; Z5U; Y5U; Y5V

APPROVALS:

ENEC, UL, CSA

CLIMATIC CATEGORY:

25/125/56 or 25/85/21

OPERATING TEMPERATURE RANGE:

- 30 to + 125 °C

MARKING

Marking indicates capacitance value and tolerance in accordance with "EIA 198", voltage and approval marks.

FEATURES

- Complying with "EN 132 400" and "IEC 60384-14, 2nd edition, including amendment 1.1995"
- High reliability
- Kinked (preferred) or straight leads
- Lead (Pb)-free available



RoHS
COMPLIANT

APPLICATIONS

- Across-the-line
- Line by-pass
- Antenna coupling

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.

The capacitors may be supplied with kinked or straight leads having a lead spacing of 7.5 mm (0.300") or 10 mm (0.400") and a lead length from 4 to 30 mm. The standard tolerance on capacitance is ± 10 % for U2M, Y5P material, ± 20 % for Z5U, Y5U material and - 20/+ 80 % for Y5V. Encapsulation is made of flammable resistant epoxy resin in accordance with "UL94V-0".

CAPACITANCE RANGE:

at 1 kHz, 1 V (RMS); 10 to 10 000 pF

RATED VOLTAGE U_R :

(X1): 400 V (AC), 50 Hz (IEC 60384-14.2)

(Y2): 250 V (AC), 50 Hz (IEC 60384-14.2)

DIELECTRIC STRENGTH BETWEEN LEADS:

Component test:

2500 V (AC), 50 Hz, 2 seconds

As repeated test admissible only once with:

2250 V (AC), 50 Hz, 2 seconds

Random sampling test (destructive test):

2500 V (AC), 50 Hz, 60 seconds

DIELECTRIC STRENGTH OF BODY INSULATION:

2500 V (AC), 50 Hz, 60 seconds (destructive test)

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.

EMI/RFI Y2-DN



Vishay BCcomponents

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| ORDERING INFORMATION 250 V (AC) | | | | | | |
|---------------------------------|-------------|--------------------------|------------------------------|---------------------------|---|------------------|
| C (pF) | TOL. (%) | D _{max} (mm) | LEAD SPACING F (mm) | SH ⁽²⁾ (mm) | CLEAR TEXT CODE | |
| | | | | | 13 th DIGIT: T = REEL; U = AMMO; 3 = BULK ⁽³⁾ 16 th DIGIT: R = RoHS COMPLIANT | |
| U2M | | | | | | |
| 10 | ± 10 | 6.5 | 7.5 | 4.0 | S100K25U2MS6.K7. | |
| 15 | | | | | S150K25U2MS6.K7. | |
| 22 | | | | | S220K25U2MS6.K7. | |
| 33 | | | | | S330K25U2MS6.K7. | |
| 47 | | | | | S470K29U2MS6.K7. | |
| 68 | | | | | S680K33U2MS6.K7. | |
| Y5P | | | | | | |
| 100 | ± 10 | 8.5 | 7.5 | 4.0 | S101K33Y5PS6.K7. | |
| 150 | | | | | S151K33Y5PS6.K7. | |
| 220 | | | | | S221K33Y5PS6.K7. | |
| 330 | | | | | S331K33Y5PS6.K7. | |
| 470 | | | | | S471K33Y5PS6.K7. | |
| 680 | | | | | S681K39Y5PS6.K7. | |
| 1000 | | | | | S102K43Y5PS6.K7. | |
| Z5U | | | | | | |
| 1000 | ± 20 | 8.5 | 7.5 | 4.0 | S102M33Z5US6.K7. | |
| 1500 | | 10.0 | | | S152M39Z5US6.K7. | |
| 2200 | | 11.0 | | | S222M43Z5US6.K7. | |
| 3300 | | 13.5 | | | S332M53Z5US6.K7. | |
| 3900 | | 15.0 | | | S392M53Z5US6.K7. | |
| 4700 | | 17.5 | | | S472M59Z5US63K7. | |
| 6800 | | 10 | | | S682M69Z5US83K0. | |
| 10 000 | | 21.5 | | | S103M84Z5US83K0. | |
| Y5U | | | | | | |
| 1000 | | ± 20 | 7.5 | 7.5 | 4.0 | S102M29Y5US6.K7. |
| 1500 | 8.5 | | S152M33Y5US6.K7. | | | |
| 2200 | 10.0 | | S222M39Y5US6.K7. | | | |
| 3300 | 12.0 | | S332M47Y5US6.K7. | | | |
| 3900 | 13.5 | | S392M53Y5US6.K7. | | | |
| 4700 | | | S472M53Y5US6.K7. | | | |
| Y5V | | | | | | |
| 2200 | - 20/+ 80 | 8.5 | 7.5 | 4.0 | S222Z33Y5VS6.K7. | |
| 4700 | | 12.0 | | | S472Z47Y5VS6.K7. | |
| 10 000 | | 16.0 | | | S103Z63Y5VS83K7. | |

Notes

1. Maximum thickness 6.0 mm
2. SH = seated height
3. Straight leads are available on request

| PACKAGING | | | | |
|--------------------------|-----------|----------------------|------|------|
| D _{max} (mm) | SIZE CODE | PACKAGING QUANTITIES | | |
| | | BULK | REEL | AMMO |
| 8.5 (0.33") | 33 | 1000 | 1000 | 1000 |
| 10.0 (0.39") | 39 | | | |
| 11.0 (0.43") | 43 | | | |
| 12.0 (0.47") | 47 | | | |
| 13.5 (0.53") | 53 | 500 | - | - |
| 15.0 (0.59") | 59 | | | |
| 17.5 (0.69") | 69 | | | |
| 19.0 (0.75") | 75 | | | |
| 21.5 (0.84") | 84 | | | |
| | | 250 | | |

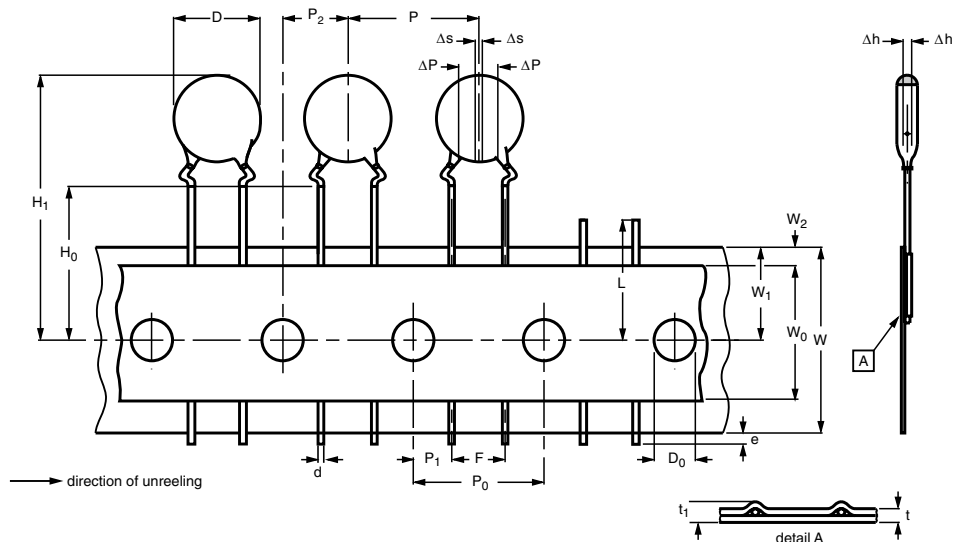
Note

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



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Kinked capacitors on tape, lead spacing 7.5 mm (0.30")

| DIMENSIONS OF TAPE | | | |
|--------------------|--------------------------------------|-----------------|-----------------|
| SYMBOL | PARAMETER | DIMENSIONS (mm) | |
| | | NOMINAL | TOLERANCE |
| D | body diameter | 14.0 max. | - |
| d | lead diameter | 0.6 | ± 0.05 |
| P | pitch between capacitors | 15 | ± 1.0 |
| P ₀ | feed-hole pitch | 15 | ± 0.3; note 1 |
| ΔP | plane deviation | 1.0 max. | - |
| P ₁ | feed-hole centre to lead centre | 3.75 | ± 0.7; note 2 |
| P ₂ | feed-hole centre to component centre | 7.5 | ± 1.3; note 2 |
| F | lead spacing | 7.5 | + 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 min. | - |
| W ₁ | hole position | 9.0 | + 0.75 - 0.5 |
| W ₂ | hold-down tape margin | 3.0 max. | - |
| H ₀ | height to seating plane | 16.0 | ± 0.5 |
| H ₁ | maximum component height | 40 | - |
| e | lead end protrusion | 1.0 max. | - |
| L | maximum length of snapped lead | 11.0 | - |
| D ₀ | feed-hole diameter | 4.0 | ± 0.2 |
| t | total tape thickness | 0.9 max. | - |
| t ₁ | maximum thickness of tape and wires | 1.5 max. | - |

Notes

1. Cumulative pitch error: $\pm \leq 1 \text{ mm}/20 \text{ pitches}$
2. Obliquity maximum 3°

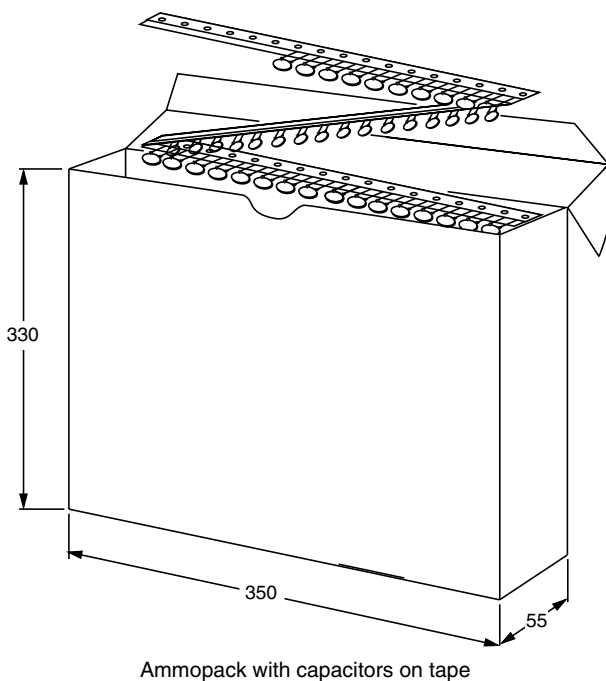
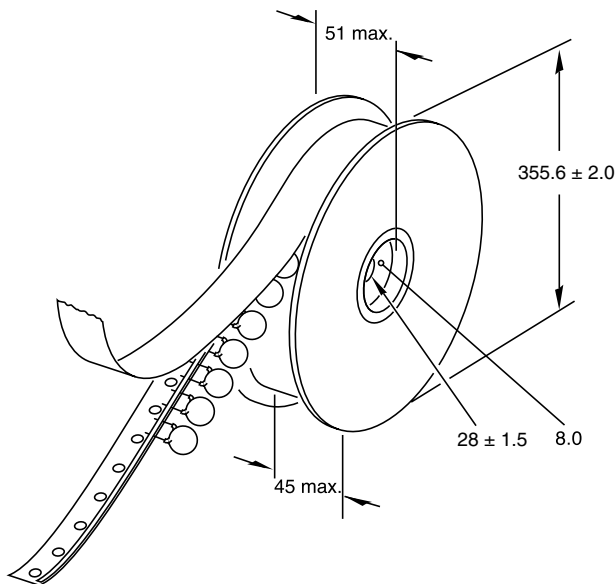
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REEL AND TAPE DATA in millimeters





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