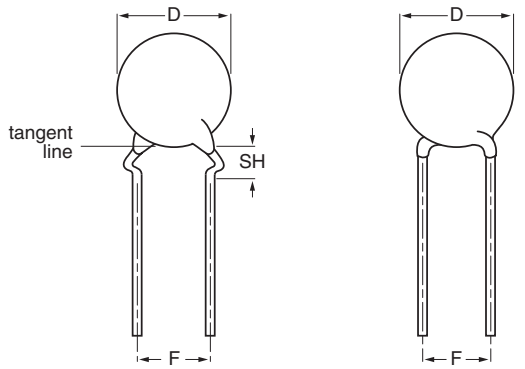
Ceramic Disc Capacitors
Safety, Class X1/Y2 400/250 V (AC) Series DN



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

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”.

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.

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.

ORDERING INFORMATION 250 V (AC)

C (pF)	TOL. (%)	D_{max} (mm)	LEAD SPACING F (mm)	SH[2] (mm)	CLEAR TEXT CODE 13th DIGIT: T = REEL; U = AMMO; 3 = BULK[3] 16th 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		7.5			S470K29U2MS6.K7.
68		8.5			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		10.0			S681K39Y5PS6.K7.
1000		11.0			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					S392M53Z5US6.K7.
4700		15.0			S472M59Z5US63K7.
6800		17.5	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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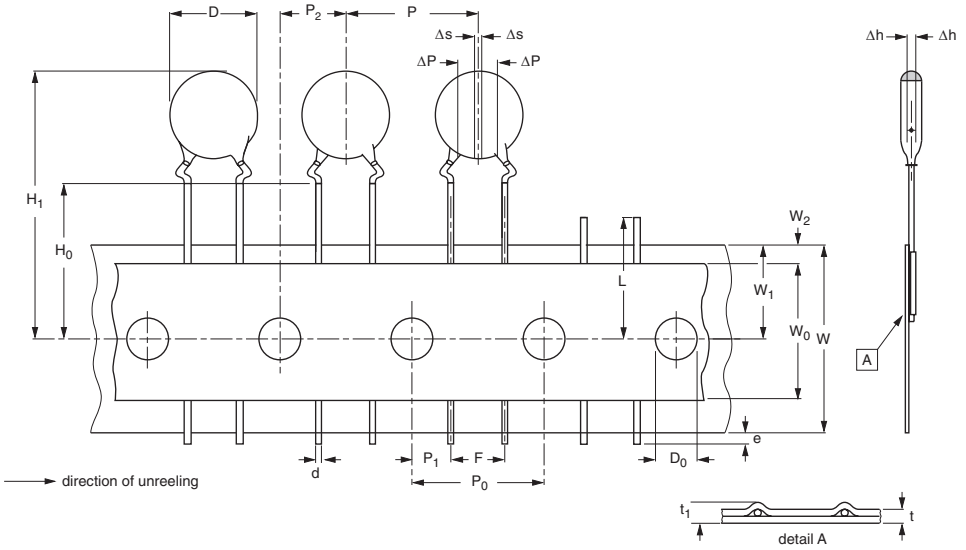


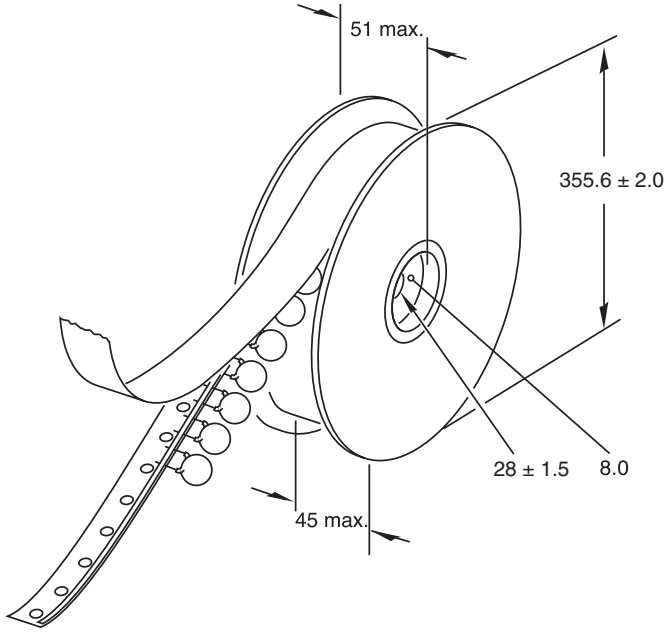
Kinked capacitors on tape, lead spacing 7.5 mm (0.30")

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 snipped 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.	–

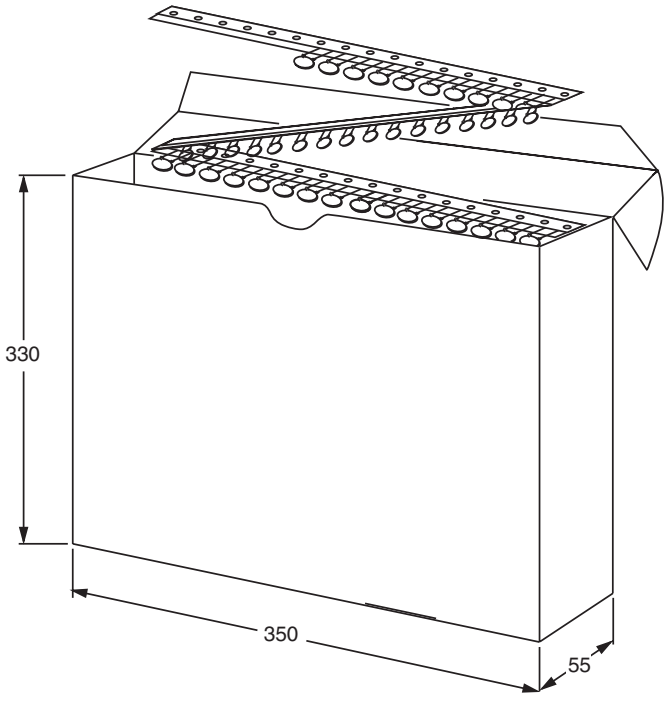
Notes

1. Cumulative pitch error: ± ≤ 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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