

Ceramic Disc Capacitors

Safety, Class X1/Y1 440/250V (AC) Series DP

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.



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 vertical kinked or straight leads having a lead spacing of 10.0 mm or 12.5 mm and a lead length from 4 to 30 mm. The standard tolerance on capacitance is $\pm 10\%$ for Y5P material and $\pm 20\%$ for Y5U material. Encapsulation is made of flammable resistant epoxy resin in accordance with "UL94V-0".

CAPACITANCE RANGE:

at 1kHz, 1V (RMS); 100 to 4700pF

RATED VOLTAGE U_R :

(X1): 440V (AC), 50Hz (IEC 60384-14.2)

(Y1): 250V (AC), 50Hz (IEC 60384-14.2)

DIELECTRIC STRENGTH BETWEEN LEADS:

Component Test:

4000V (AC), 50Hz, 2 seconds

As repeated test admissible only once with:

3600V (AC), 50Hz, 2 seconds

Random sampling test (destructive test):

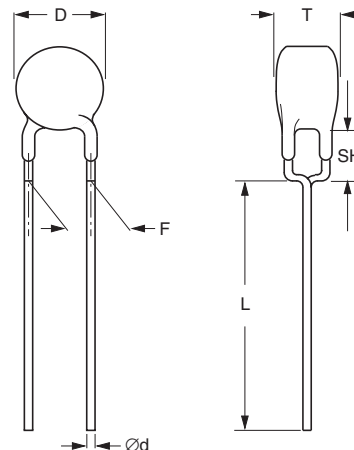
4000V (AC), 50Hz, 60 seconds

DIELECTRIC STRENGTH OF BODY INSULATION:

4000V (AC), 50Hz, 60 seconds (destructive test)

INSULATION RESISTANCE AT 500V (DC):

$\geq 10000 \text{ M}\Omega$



Capacitors with 10 mm lead spacing.

TOLERANCE ON CAPACITANCE:

$\pm 10\%$; $\pm 20\%$

DISSIPATION FACTOR:

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

TEMPERATURE COEFFICIENTS:

Y5P; Y5U

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".

The capacitors meet the essential requirements of "EIA 198". Unless stated otherwise all electrical values apply at an ambient temperature of $25 \pm 3^\circ\text{C}$, at normal atmospheric conditions



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Vishay BCcomponents

ORDERING INFORMATION, X1 440V (AC); Y1 250V (AC)

C (pF)	TOL. (%)	D _{max} (mm)	LEAD SPACING F (mm)	SH ⁽²⁾ (mm)	CLEAR TEXT CODE	PACKAGING CODE 8 th AND 9 th DIGIT			CATALOG NUMBER ⁽⁴⁾ 3 rd DIGIT: 5 = STANDARD, 8 = RoHS COMPLIANT
					13 th DIGIT: T = REEL; U = AMMO; 3 = BULK ⁽³⁾ 16 th DIGIT: R = RoHS COMPLIANT	REEL	AMMO	BULK	
						KINKED			
Y5P									
100	±10	8.5	10.0	4.0	S101K33Y5PQ6.V0.	70	71	72	22.2 811 ..016
150					S151K33Y5PQ6.V0.				22.2 811 ..116
220					S221K33Y5PQ6.V0.				22.2 811 ..216
330					S331K33Y5PQ6.V0.				22.2 811 ..316
470					S471K33Y5PQ6.V0.				22.2 811 ..416
680		10.0			S681K39Y5PQ6.V0.				22.2 811 ..616
Y5U									
680	±20	8.5	10.0	4.0	S681M33Y5UQ6.V0.	70	71	72	22.2 811 ..617
1000		S102M33Y5UQ6.V0.			22.2 811 ..027				
1500		10.0			S152M39Y5UQ6.V0.				22.2 811 ..127
2200		11.0			S222M43Y5UQ6.V0.				22.2 811 ..227
3300		13.5			S332M53Y5UQ6.V0.				22.2 811 ..327
3900		15.0			S392M59Y5UQ6.V0.				22.2 811 ..377
4700		16.0			S472M63Y5UQ83V0.	—	—	73	22.2 811 ..427

Notes

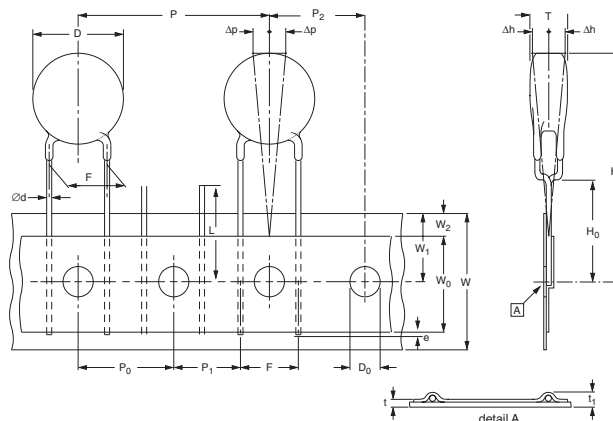
- Maximum thickness 6.0 mm.
- SH = seated height.
- Straight leads are available on request.
- 3rd digit to complete RoHS catalog number. 8th and 9th digit of the catalog number to be completed with the packaging code.

PACKAGING

D _{max} (mm)	SIZE CODE	PACKAGING QUANTITIES		
		BULK	REEL	AMMO
8.5 (0.33")	33	1000	500	750
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			
16.0 (0.30")	63			

Note

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

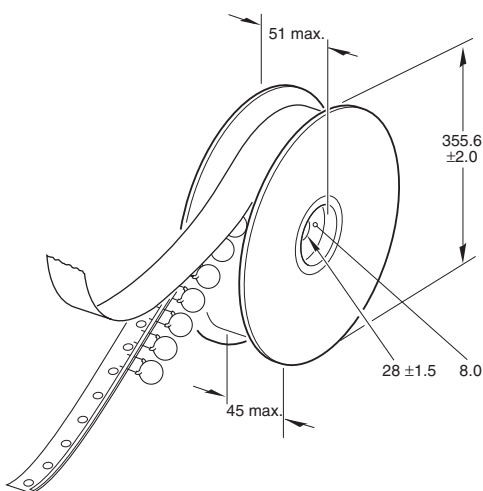


Straight leaded capacitors on tape, lead spacing 10 mm (0.375").

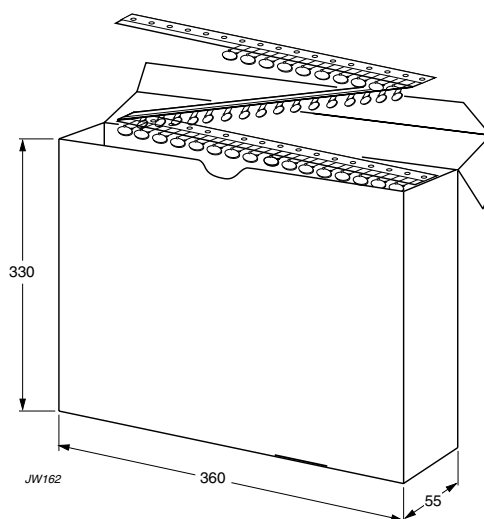
DIMENSIONS OF TAPE			
SYMBOL	PARAMETER	DIMENSIONS (mm)	
		NOMINAL	TOLERANCE
D	body diameter	22.0 max.	-
d	lead diameter	0.6	±0.05
P	pitch between capacitors	25.4	-
P ₀	feed-hole pitch	12.7	±0.3; note 1
ΔP	plane deviation	1.0 max.	-
P ₁	feed-hole centre to lead centre	7.7	±0.7; note 2
P ₂	feed-hole centre to component centre	12.7	±1.5; note 2
F	lead spacing	10.0	+0.6 -0.4
Δh	component alignment	0	±1.0
Δs	deviation along tape, left or right	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	43.0	-
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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