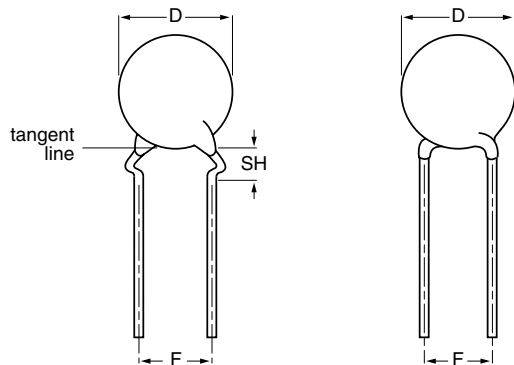




Ceramic Disc Capacitors Safety, Class X1/Y2 400/250 V (AC) Series DN



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):

$\geq 10\,000\text{ M}\Omega$

TOLERANCE ON CAPACITANCE:

$\pm 10\%$; $\pm 20\%$; $-20/+80\%$

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 $+125\text{ }^{\circ}\text{C}$

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

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 $\pm 10\%$ for U2M, Y5P material, $\pm 20\%$ 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)



RoHS
COMPLIANT

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

EMI/RFI Y2-DN

Vishay BCcomponents

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



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		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		15.0			S392M53Z5US6.K7.
4700		17.5			S472M59Z5US63K7.
6800		21.5	10		S682M69Z5US83K0.
10 000					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

- Maximum thickness 6.0 mm
- SH = seated height
- 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		

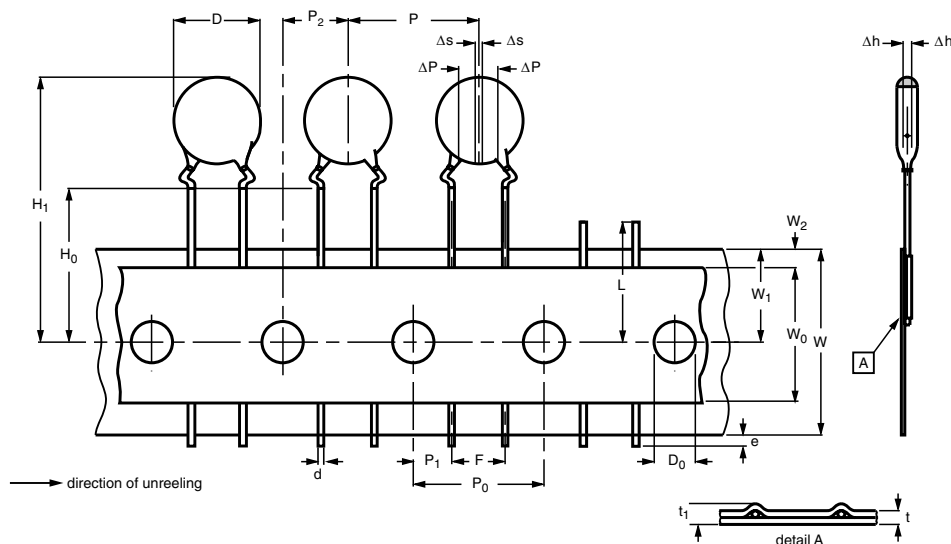
Note

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



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

Vishay BCcomponents



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: $\pm \leq 1$ mm/20 pitches
2. Obliquity maximum 3°

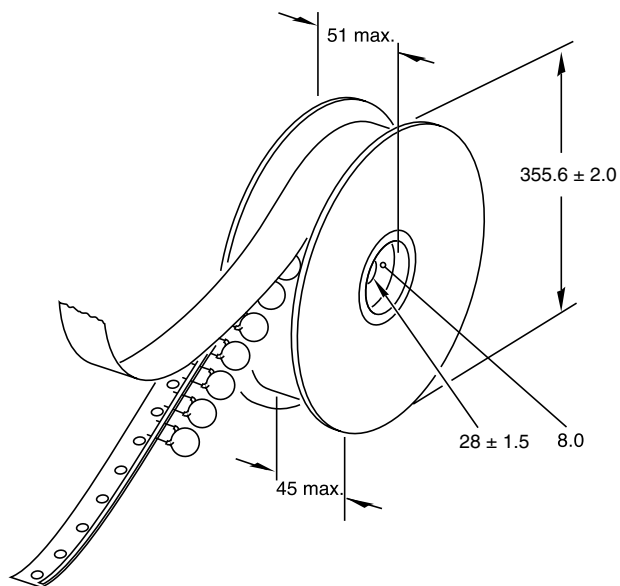
EMI/RFI Y2-DN

Vishay BCcomponents

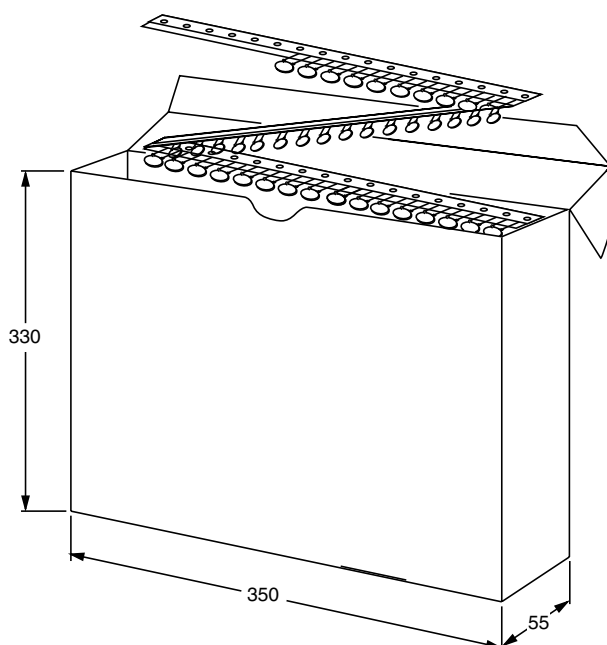
Ceramic Disc Capacitors
Safety, Class X1/Y2 400/250 V (AC)
Series DN



REEL AND TAPE DATA in millimeters



Reel with capacitors on tape



Ampopack with capacitors on tape



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.