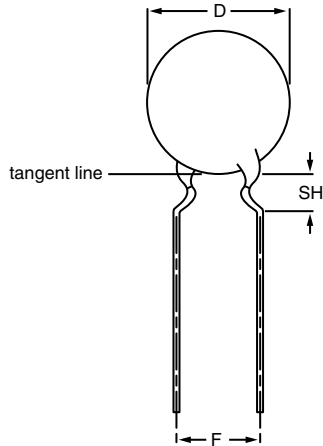


Ceramic Disc Capacitors Class 1 and 2, 50 V (DC) General Purpose



Capacitors with 5 mm (0.20") lead spacing

TEMPERATURE COEFFICIENTS:

Class 1 NPO; SL0

Class 2 Y5P; Z5U; Y5V; Z5V

SECTIONAL SPECIFICATIONS:

Class 1 IEC 60 384-8,

Class 2 IEC 60 384-9,

EIA 198

CLIMATIC CATEGORY:

Class 1 55/125/21

Class 2 10/85/21 and 30/85/21

OPERATING TEMPERATURE RANGE:

Class 1 - 55 to + 125 °C

Class 2 - 30 to + 85 °C

MARKING

Marking indicates capacitance value and tolerance in accordance with "EIA 198".

FEATURES

- Low losses
- High stability
- High capacitance in small size
- Kinked (preferred) or straight leads
- Lead (Pb)-free available



RoHS
COMPLIANT

APPLICATIONS

- Bypassing
- Coupling
- Resonant circuit

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.

The capacitors have inward kinked leads with a spacing of 5 mm (0.200") and a lead length from 4 to 30 mm. Encapsulation is made of phenolic resin.

CAPACITANCE RANGE:

Class 1, at 1 MHz, 1.2 V (RMS); 1.0 to 100 pF
1 kHz, 1 ± 0.2 V (RMS) for capacitance values higher than 1000 pF

Class 2, at 1 kHz, 1 ± 0.2 V (RMS) 150 to 47 000 pF

RATED DC VOLTAGE:

50 V

DIELECTRIC STRENGTH:

250 % of rated voltage

INSULATION RESISTANCE AT 50 V (DC):

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

TOLERANCE ON CAPACITANCE:

$\pm 5\%$; $\pm 10\%$; $\pm 20\%$; $+ 80\%/- 20\%$

DISSIPATION FACTOR:

Class 1, $C \leq 30\ \text{pF} \leq 20 \times (10/C + 0.7) \times 10^{-4}$ maximum

Class 1, $C > 30\ \text{pF} \leq 0.2\%$

Class 2, $\leq 3.0\%$

ORDERING INFORMATION, CLASS 1, 50 V (DC), KINKED					
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 16 th DIGIT: R = RoHS COMPLIANT
CLASS 1 NP0					
1.0	± 0.25 pF	5.0	5.0	4.0	D109C20C0KF6.J5.
1.5					D159C20C0KF6.J5.
2.2					D229C20C0JF6.J5.
3.3					D339C20C0JF6.J5.
4.7					D479C20C0HF6.J5.
6.8	± 0.5 pF				D689D20C0HF6.J5.
10	± 5				D100J20C0GF6.J5.
12					D120J20C0GF6.J5.
15					D150J20C0GF6.J5.
18					D180J20C0GF6.J5.
22					D220J20C0GF6.J5.
27					D270J20C0GF6.J5.
33					D330J20C0GF6.J5.
39					D390J20C0GF6.J5.
47					D470J20C0GF6.J5.
CLASS 1 SL0					
56	± 5	5.0	5.0	4.0	D560J20SL0F6.J5.
68					D680J20SL0F6.J5.
82					D820J20SL0F6.J5.
100					D101J20SL0F6.J5.

Notes

1. Maximum thickness 4.0 mm.
2. SH = seated height.
3. Lead style codes refer to inward kinked leads. Other styles available on request.

ORDERING INFORMATION, CLASS 2, 50 V (DC), KINKED								
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 16 th DIGIT: R = RoHS COMPLIANT			
CLASS 2 Y5P								
150	± 10	5.0	5.0	4.0	D151K20Y5PF6.J5.			
180					D181K20Y5PF6.J5.			
220					D221K20Y5PF6.J5.			
330					D331K20Y5PF6.J5.			
470					D471K20Y5PF6.J5.			
680					D681K20Y5PF6.J5.			
1000					D102K20Y5PF6.J5.			
1500					D152K20Y5PF6.J5.			
1800					6.5	D182K25Y5PF6.J5.		
2200						D222K25Y5PF6.J5.		
3300						D332K25Y5PF6.J5.		
4700						D472K29Y5PF6.J5.		
6800					7.5	D682K33Y5PF6.J5.		
10 000		8.5				D103K39Y5PF6.J5.		
					10.0			



Ceramic Disc Capacitors
Class 1 and 2, 50 V (DC) General Purpose

Vishay BCcomponents

ORDERING INFORMATION, CLASS 2, 50 V (DC), KINKED						
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 16 th DIGIT: R = RoHS COMPLIANT	
CLASS 2 Z5U						
1000	± 20	5.0	5.0	4.0	D102M20Z5UF6.J5.	
1500					D152M20Z5UF6.J5.	
2200					D222M20Z5UF6.J5.	
3300					D332M20Z5UF6.J5.	
4700					D472M20Z5UF6.J5.	
6800					6.5	D682M25Z5UF6.J5.
10000					7.5	D103M29Z5UF6.J5.
15000					8.5	D153M33Z5UF6.J5.
22000					10.0	D223M39Z5UF6.J5.
CLASS 2 Y5V						
1000	+ 80/- 20	5.0	5.0	4.0	D102Z20Y5VF6.J5.	
1500					D152Z20Y5VF6.J5.	
2200					D222Z20Y5VF6.J5.	
3300					D322Z20Y5VF6.J5.	
4700					D472Z20Y5VF6.J5.	
6800					6.5	D682Z25Y5VF6.J5.
10000					7.5	D103Z29Y5VF6.J5.
15000					8.5	D153Z33Y5VF6.J5.
22000					10.0	D223Z39Y5VF6.J5.
CLASS 2 Z5V						
4700	+ 80/- 20	5.0	5.0	4.0	D472Z20Z5VF6.J5.	
10000		6.5			D103Z25Z5VF6.J5.	
22000		7.5			D223Z29Z5VF6.J5.	
47000		10.0			D473Z39Z5VF6.J5.	

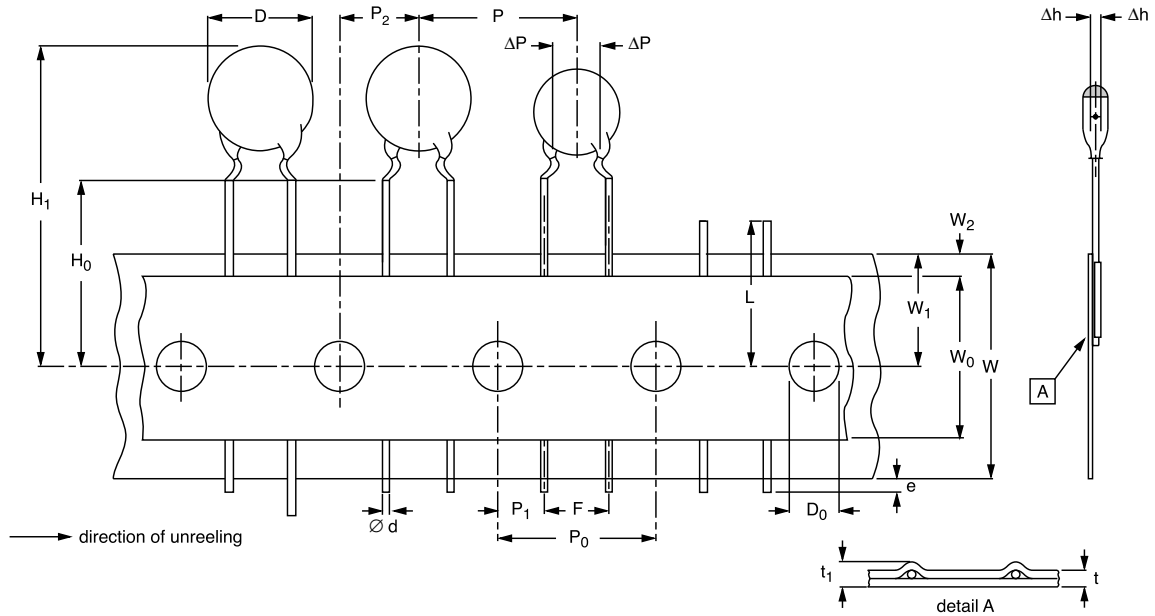
Notes

1. Maximum thickness 4.0 mm.
2. SH = seated height.
3. Lead Style codes refer to inward kinked leads. Other styles available on request.

PACKAGING				
D _{MAX} (mm)	SIZE CODE	PACKAGING QUANTITIES		
		BULK	REEL	AMMO
5.0 (0.20")	20	1000	2500	2000
6.5 (0.25")	25			
7.5 (0.29")	29			
8.5 (0.33")	33			
10.0 (0.39")	39			
11.0 (0.43")	43			

Note

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



Capacitors, lead spacing 5.0 mm, on tape

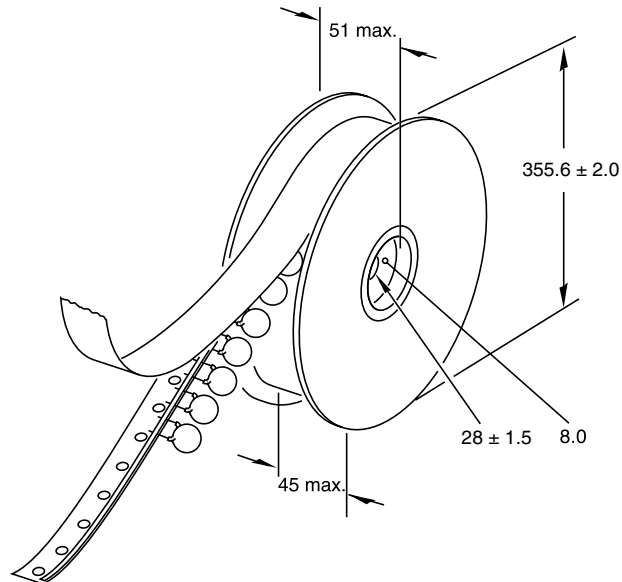
Kinked capacitors on tape, lead spacing 5.0 mm (0.2 inch)

DIMENSIONS OF TAPE		DIMENSIONS (mm)	
SYMBOL	PARAMETER	NOMINAL	TOLERANCE
		D	body diameter
d	lead diameter	0.6	± 0.05
P	pitch between capacitors	12.7	± 1.0
P ₀	feed-hole pitch	12.7	± 0.3; note 1
ΔP	plane deviation	1.0 maximum	–
P ₁	feed-hole centre to lead centre	3.85	± 0.7; note 2
P ₂	feed-hole centre to component centre	6.35	± 1.3; note 2
F	lead spacing	5.0	+ 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 minimum	–
W ₁	hole position	9.0	+ 0.75/- 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	–

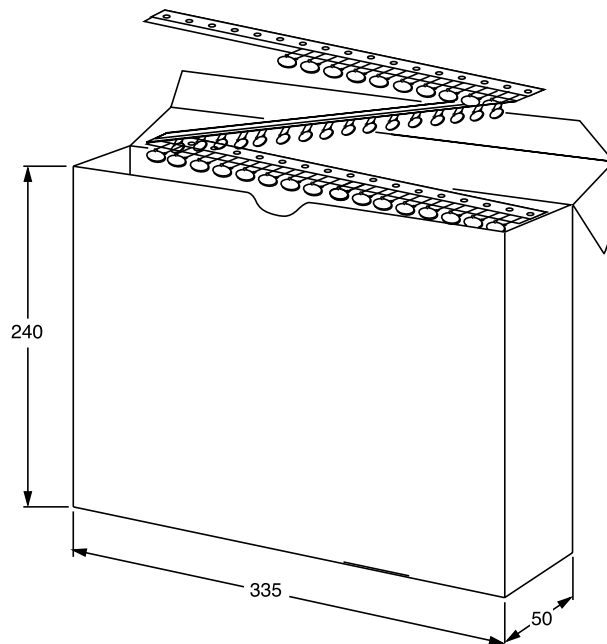
Notes

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

REEL AND TAPE DATA in millimeters



Reel with capacitors on tape



Ampopack with capacitors on tape



Notice

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.