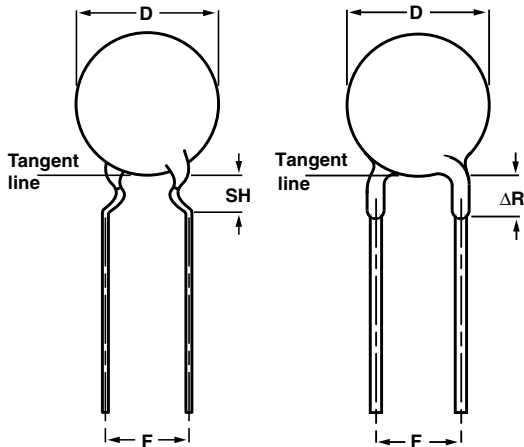


Ceramic Disc Capacitors

Class 1 and 2, 100 V (DC) General Purpose



Capacitors with 5 mm (0.20") and 2.5 mm lead spacing

TEMPERATURE COEFFICIENTS

Class 1 NP0; 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 straight leads with 2.5 mm (0.100"), lead length from 4 to 30 mm.

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

100 V

DIELECTRIC STRENGTH

250 % of rated voltage

INSULATION RESISTANCE AT 100 V (DC)

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

TOLERANCE ON CAPACITANCE

± 0.25 pF; ± 0.5 pF; $\pm 5\%$; $\pm 10\%$; $\pm 20\%$; + 80/- 20 %

DISSIPATION FACTOR

Class 1, $C \leq 30$ pF; $\leq 20 \times (10/C + 0.7) \times 10^{-4}$ maximum
Class 1, $C > 30$ pF; $\leq 0.2\%$
Class 2, $\leq 3.0\%$

Note:

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.



Ceramic Disc Capacitors
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Vishay BCcomponents

ORDERING INFORMATION, CLASS 1, 50 V (DC), KINKED AND STRAIGHT						
C (pF)	TOL. (%)	D _{max.} (mm)	LEAD SPACING F (mm)	SH/DR _{max.} ⁽²⁾ (mm)	CLEAR TEXT CODE	
					13 th DIGIT: T = REEL; U = AMMO; 3 = BULK	
CLASS 1 NP0						
1.0	± 0.25 pF	5.0	5.0	4.0	D109C20C0KF6.J5R	
			2.5	1.5	D109C20C0KF6.L2R	
1.5			5.0	4.0	D159C20C0KF6.J5R	
			2.5	1.5	D159C20C0KF6.L2R	
2.2			5.0	4.0	D229C20C0JF6.J5R	
			2.5	1.5	D229C20C0JF6.L2R	
3.3			5.0	4.0	D339C20C0JF6.J5R	
			2.5	1.5	D339C20C0JF6.L2R	
4.7			5.0	4.0	D479C20C0FF6.J5R	
			2.5	1.5	D479C20C0FF6.L2R	
6.8			± 0.5 pF	5.0	4.0	D689D20C0FF6.J5R
				2.5	1.5	D689D20C0FF6.L2R
10	± 5		5.0	4.0	D100J20C0GF6.J5R	
			2.5	1.5	D100J20C0GF6.L2R	
12			5.0	4.0	D120J20C0GF6.J5R	
			2.5	1.5	D120J20C0GF6.L2R	
15			5.0	4.0	D150J20C0GF6.J5R	
			2.5	1.5	D150J20C0GF6.L2R	
18			5.0	4.0	D180J20C0GF6.J5R	
			2.5	1.5	D180J20C0GF6.L2R	
22			5.0	4.0	D220J20C0GF6.J5R	
			2.5	1.5	D220J20C0GF6.L2R	
27			5.0	4.0	D270J20C0GF6.J5R	
			2.5	1.5	D270J20C0GF6.L2R	
33		5.0	4.0	D330J20C0GF6.J5R		
		2.5	1.5	D330J20C0GF6.L2R		
39		5.0	4.0	D390J20C0GF6.J5R		
		2.5	1.5	D390J20C0GF6.L2R		
47		5.0	4.0	D470J20C0GF6.J5R		
		2.5	1.5	D470J20C0GF6.L2R		
CLASS 1 SLO						
56		± 5	5.0	5.0	4.0	D560J20SLOF6.J5R
				2.5	1.5	D560J20SLOF6.L2R
68				5.0	4.0	D680J20SLOF6.J5R
				2.5	1.5	D680J20SLOF6.L2R
82				5.0	4.0	D820J20SLOF6.J5R
	2.5			1.5	D820J20SLOF6.L2R	
100	5.0			4.0	D101J20SLOF6.J5R	
	2.5			1.5	D101J20SLOF6.L2R	

Notes

1. Maximum thickness 4.0 mm
2. SH = seated height; DR = run down
3. Lead style codes refer to lead configurations



ORDERING INFORMATION, CLASS 2, 50 V (DC), KINKED AND STRAIGHT						
C (pF)	TOL. (%)	D _{max.} (mm)	LEAD SPACING F (mm)	SH/DR _{max.} (2) (mm)	CLEAR TEXT CODE	
					13 th DIGIT: T = REEL; U = AMMO; 3 = BULK	
CLASS 2 Y5P						
150	± 10	5.0	5.0	4.0	D151K20Y5PF6.J5R	
			2.5	1.5	D151K20Y5PF6.L2R	
180			5.0	4.0	D181K20Y5PF6.J5R	
			2.5	1.5	D181K20Y5PF6.L2R	
220			5.0	4.0	D221K20Y5PF6.J5R	
			2.5	1.5	D221K20Y5PF6.L2R	
330			5.0	4.0	D331K20Y5PF6.J5R	
			2.5	1.5	D331K20Y5PF6.L2R	
470			5.0	4.0	D471K20Y5PF6.J5R	
			2.5	1.5	D471K20Y5PF6.L2R	
680		5.0	4.0	D681K20Y5PF6.J5R		
		2.5	1.5	D681K20Y5PF6.L2R		
1000		5.0	4.0	D102K20Y5PF6.J5R		
		2.5	1.5	D102K20Y5PF6.L2R		
1500		5.0	4.0	D152K20Y5PF6.J5R		
		2.5	1.5	D152K20Y5PF6.L2R		
1800		6.5	5.0	4.0	D182K25Y5PF6.J5R	
			2.5	1.5	D182K25Y5PF6.L2R	
2200			5.0	4.0	D222K25Y5PF6.J5R	
			2.5	1.5	D222K25Y5PF6.L2R	
3300	5.0		4.0	D332K25Y5PF6.J5R		
	2.5		1.5	D332K25Y5PF6.L2R		
4700	7.5	5.0	4.0	D472K29Y5PF6.J5R		
		2.5	1.5	D472K29Y5PF6.L2R		
6800	8.5	5.0	4.0	D682K33Y5PF6.J5R		
		2.5	1.5	D682K33Y5PF6.L2R		
10 000	10.0	5.0	4.0	D103K39Y5PF6.J5R		
		2.5	1.5	D103K39Y5PF6.L2R		
CLASS 2 Z5U						
1000	± 20	5.0	5.0	4.0	D102M20Z5UH6.J5R	
			2.5	1.5	D102M20Z5UH6.L2R	
1500			5.0	4.0	D152M20Z5UH6.J5R	
			2.5	1.5	D152M20Z5UH6.L2R	
2200			5.0	4.0	D222M20Z5UH6.J5R	
			2.5	1.5	D222M20Z5UH6.L2R	
3300			5.0	4.0	D332M20Z5UH6.J5R	
			2.5	1.5	D332M20Z5UH6.L2R	
4700			6.5	5.0	4.0	D472M25Z5UH6.J5R
				2.5	1.5	D472M25Z5UH6.L2R
6800		5.0		4.0	D682M25Z5UH6.J5R	
		2.5		1.5	D682M25Z5UH6.L2R	
10 000		7.5	5.0	4.0	D103M29Z5UH6.J5R	
			2.5	1.5	D103M29Z5UH6.L2R	
15 000		8.5	5.0	4.0	D153M33Z5UH6.J5R	
			2.5	1.5	D153M33Z5UH6.L2R	
22 000		10.0	5.0	4.0	D223M39Z5UH6.J5R	
			2.5	1.5	D223M39Z5UH6.L2R	

Notes

1. Maximum thickness 4.0 mm
2. SH = seated height; DR = run down
3. Lead style codes refer to lead configurations



Ceramic Disc Capacitors
Class 1 and 2, 100 V (DC) General Purpose

Vishay BCcomponents

ORDERING INFORMATION, CLASS 2, 50 V (DC), KINKED AND STRAIGHT						
C (pF)	TOL. (%)	D _{max.} (mm)	LEAD SPACING F (mm)	SH/DR _{max.} (2) (mm)	CLEAR TEXT CODE	
					13 th DIGIT: T = REEL; U = AMMO; 3 = BULK	
CLASS 2 Y5V						
1000	+ 80/- 20	5.0	5.0	4.0	D102Z20Y5VH6.J5R	
			2.5	1.5	D102Z20Y5VH6.L2R	
1500			5.0	4.0	D152Z20Y5VH6.J5R	
			2.5	1.5	D152Z20Y5VH6.L2R	
2200			5.0	4.0	D222Z20Y5VH6.J5R	
			2.5	1.5	D222Z20Y5VH6.L2R	
3300		6.5	5.0	4.0	D332Z20Y5VH6.J5R	
			2.5	1.5	D332Z20Y5VH6.L2R	
4700			5.0	4.0	D472Z25Y5VH6.J5R	
			2.5	1.5	D472Z25Y5VH6.L2R	
6800			5.0	4.0	D682Z25Y5VH6.J5R	
			2.5	1.5	D682Z25Y5VH6.L2R	
10 000		7.5	5.0	4.0	D103Z29Y5VH6.J5R	
			2.5	1.5	D103Z29Y5VH6.L2R	
15 000		8.5	5.0	4.0	D153Z33Y5VH6.J5R	
			2.5	1.5	D153Z33Y5VH6.L2R	
22 000		10.0	5.0	4.0	D223Z39Y5VH6.J5R	
			2.5	1.5	D223Z39Y5VH6.L2R	
CLASS 2 Z5V						
4700		+ 80/- 20	5.0	5.0	4.0	D472Z20Z5VH6.J5R
	2.5			1.5	D472Z20Z5VH6.L2R	
10 000	6.5		5.0	4.0	D103Z25Z5VH6.J5R	
			2.5	1.5	D103Z25Z5VH6.L2R	
22 000	8.5		5.0	4.0	D223Z33Z5VH6.J5R	
			2.5	1.5	D223Z33Z5VH6.L2R	
47 000	11.0		5.0	4.0	D473Z43Z5VH6.J5R	
			2.5	1.5	D473Z43Z5VH6.L2R	

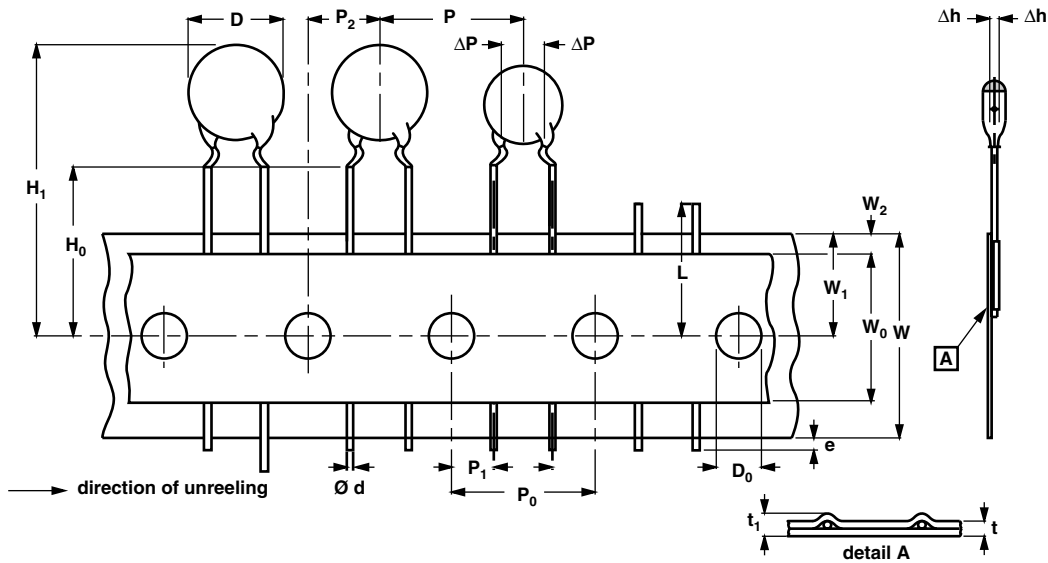
Notes

1. Maximum thickness 4.0 mm
2. SH = seated height; DR = run down
3. Lead style codes refer to lead configurations

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

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



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

DIMENSIONS OF TAPE			
SYMBOL	PARAMETER	DIMENSIONS (mm)	
		NOMINAL	TOLERANCE
D	Body diameter	11.0 maximum	-
d	Lead diameter	0.6	± 0.05
P	Pitch between capacitors	12.7	± 1.0
P ₀ ⁽¹⁾	Feed-hole pitch	12.7	± 0.3 ⁽¹⁾
ΔP	Plane deviation	1.0 maximum	-
P ₁ ⁽²⁾	Feed-hole centre to lead center	3.85	± 0.7; ⁽²⁾
P ₂ ⁽²⁾	Feed-hole centre to component center	6.35	± 1.3; ⁽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 snapped 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	-

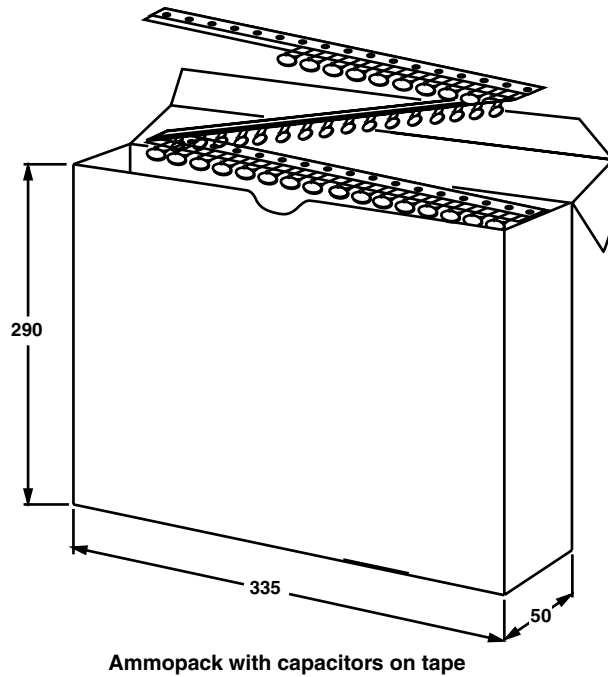
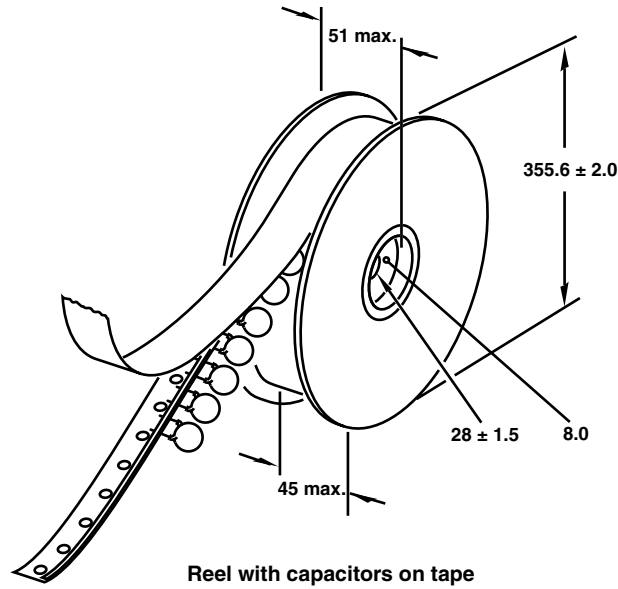
Notes

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

Ceramic Disc Capacitors
Class 1 and 2, 100 V (DC) General Purpose

Vishay BCcomponents

REEL AND TAPE DATA in millimeters





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