

Ceramic Disc Capacitors

Class 1 and 2, 500 V (DC) General Purpose

FEATURES

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



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") or 7.5 mm (0.300") 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); 10 to 82 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); 100 to 22000 pF

RATED DC VOLTAGE:

500 V

DIELECTRIC STRENGTH:

250 % of rated voltage

INSULATION RESISTANCE AT 500V (DC):

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

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, $C > 30 \text{ pF}$; $\leq 20 \times 10^{-4}$

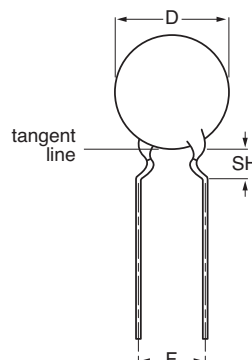
Class 2, $\leq 3.0 \%$

TEMPERATURE COEFFICIENTS:

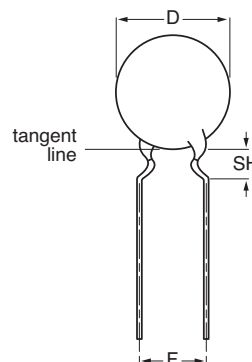
Class 1 C0G (NP0); SL0

Class 2 Y5P; Z5U; Y5V

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



Capacitors with 5 mm (0.20") lead spacing.



Capacitors with 7.5 mm (0.30") lead spacing.

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:

Class1 - 55 to +125 $^\circ\text{C}$

Class 2 - 30 to + 85 $^\circ\text{C}$

MARKING

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

ORDERING INFORMATION (PREFERRED TYPES), CLASS 1, 500 V (DC), KINKED

C (pF)	TOL. (%)	D _{max} (mm)	LEAD SPACING F (mm)	SH ⁽²⁾ (mm)	CLEAR TEXT CODE	PACKAGING CODE 8 th AND 9 th DIGIT ⁽³⁾			CATALOG NUMBER ⁽⁴⁾ 3 rd DIGIT: 5 = STANDARD 8 = RoHS COMPLIANT
					13 th DIGIT: T = REEL; U = AMMO; 3 = BULK 16 th DIGIT: R = RoHS COMPLIANT	REEL	AMMO	BULK	
CLASS 1 NP0									
10	± 5	5.0	5.0	4.0	D100J20C0GL6.J5.	06	08	10	22.2 508 ..005
12					D120J20C0GL6.J5.				22.2 508 ..055
15					D150J20C0GL6.J5.				22.2 508 ..105
18					D180J20C0GL6.J5.				22.2 508 ..155
22		6.5			D220J25C0GL6.J5.				22.2 508 ..205
27					D270J25C0GL6.J5.				22.2 508 ..255
CLASS 1 SL0									
33	± 5	5.0	5.0	4.0	D330J20SL0L6.J5.	06	08	10	22.2 568 ..305
39					D390J20SL0L6.J5.				22.2 568 ..355
47					D470J20SL0L6.J5.				22.2 568 ..405
56					D560J20SL0L6.J5.				22.2 568 ..505
68		6.5			D680J25SL0L6.J5.				22.2 568 ..605
82					D820J25SL0L6.J5.				22.2 568 ..805

Notes

- Maximum thickness 4.0 mm.
- SH = seated height.
- Packaging codes refer to inward kinked leads. Other styles 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.

ORDERING INFORMATION (PREFERRED TYPES), CLASS 2, 500 V (DC), KINKED

C (pF)	TOL. (%)	D _{max} (mm)	LEAD SPACING F (mm)	SH ⁽²⁾ (mm)	CLEAR TEXT CODE	PACKAGING CODE 8 th AND 9 th DIGIT ⁽³⁾			CATALOG NUMBER ⁽⁴⁾ 3 rd DIGIT: 5 = STANDARD 8 = RoHS COMPLIANT
					13 th DIGIT: T = REEL; U = AMMO; 3 = BULK 16 th DIGIT: R = RoHS COMPLIANT	REEL	AMMO	BULK	
CLASS 2 Y5P									
100	± 10	5.0	5.0	4.0	D101K20Y5PL6.J5.	06	08	10	22.2 618 ..011
150					D151K20Y5PL6.J5.				22.2 618 ..111
220					D221K20Y5PL6.J5.				22.2 618 ..211
330					D331K20Y5PL6.J5.				22.2 618 ..311
470					D471K20Y5PL6.J5.				22.2 618 ..411
680					D681K25Y5PL6.J5.				22.2 618 ..611
1000		6.5			D102K25Y5PL6.J5.				22.2 618 ..021
1500		7.5			D152K29Y5PL6.J5.				22.2 618 ..121
2200		8.5			D222K33Y5PL6.J5.				22.2 618 ..221
3300		10.0			D332K39Y5PL6.J5.				22.2 618 ..321
4700		11.0			D472K43Y5PL6.J5.				22.2 618 ..421
6800		13.5	7.5		D682K53Y5PL6.J7.	–	–	31	22.2 618 ..621
10000		17.5			D103K69Y5PL6.J7.				22.2 618 ..031
CLASS 2 Y5V									
1000	+ 80/– 20	5.0	5.0	4.0	D102Z20Y5VL6.J5.	06	08	10	22.2 638 ..023
1500		6.5			D152Z20Y5VL6.J5.				22.2 638 ..123
2200					D222Z25Y5VL6.J5.				22.2 638 ..223
3300					D322Z25Y5VL6.J5.				22.2 638 ..323
4700					D472Z29Y5VL6.J5.				22.2 638 ..423
6800		8.5			D682Z33Y5VL6.J5.				22.2 638 ..623
10000		10.0			D103Z39Y5VL6.J5.				22.2 638 ..033
15000		11.0			D153Z43Y5VL6.J5.				22.2 638 ..133
22000		13.5	7.5		D223Z53Y5VL6.J7.	–	–	31	22.2 638 ..233
33000		17.5			D333Z69Y5VL6.J7.				22.2 638 ..333

ORDERING INFORMATION (PREFERRED TYPES), CLASS 2, 500 V (DC), KINKED

C (pF)	TOL. (%)	D _{max} (mm)	LEAD SPACING F (mm)	SH ⁽²⁾ (mm)	CLEAR TEXT CODE	PACKAGING CODE 8 th AND 9 th DIGIT ⁽³⁾			CATALOG NUMBER ⁽⁴⁾ 3 rd DIGIT: 5 = STANDARD 8 = RoHS COMPLIANT
					13 th DIGIT: T = REEL; U = AMMO; 3 = BULK 16 th DIGIT: R = RoHS COMPLIANT	REEL	AMMO	BULK	
CLASS 2 Z5U									
1000	± 20	5.0	5.0	4.0	D102M20Z5UL6.J5.	06	08	10	22.2 648 ..022
1500					D152M25Z5UL6.J5.				22.2 648 ..122
2200					D222M25Z5UL6.J5.				22.2 648 ..222
3300					D332M29Z5UL6.J5.				22.2 648 ..322
4700		7.5			D472M33Z5UL6.J5.				22.2 648 ..422
6800		8.5			D682M39Z5UL6.J5.				22.2 648 ..622
10000		10.0			D103M43Z5UL6.J5.				22.2 648 ..032
15000		11.0			D153M53Z5UL6.J7.				22.2 648 ..132
22000		13.5	7.5		D223M59Z5UL6.J7.	—	—	31	22.2 648 ..232
		15.0							

Notes

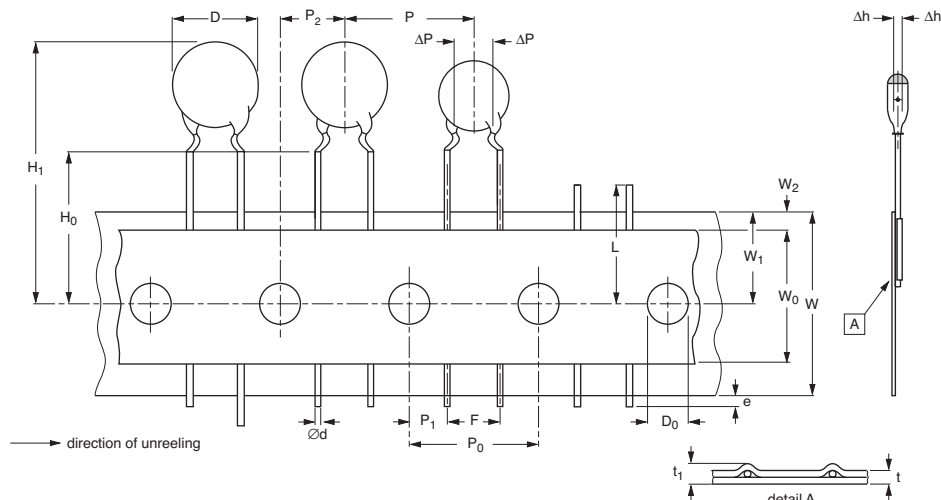
- Maximum thickness 4.0 mm.
- SH = seated height.
- Packaging codes refer to inward kinked leads. Other styles available on request.
- 3rd digit to complete RoHS catalog number. 8th and 9th digit of the catalog number to be completed with the packaging code.

PACKAGING

D _{max} mm	SIZE CODE	PACKAGING QUANTITIES		
		BULK	REEL	AMMO
5.0 (0.20")	20	1000	2000	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			
12.0 (0.47")	47			
13.5 (0.53")	53	500	-	-
15.0 (0.59")	59			
17.5 (0.69")	69			

Note

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



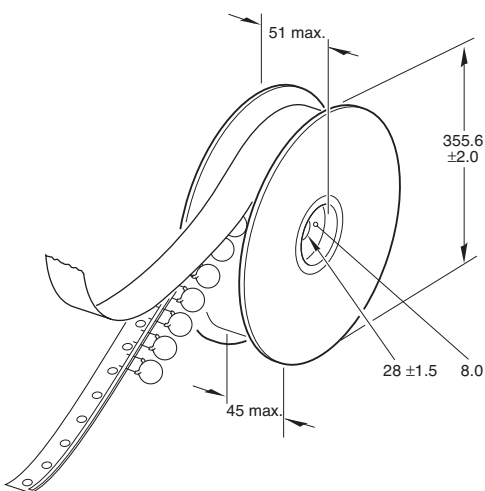
Kinked capacitors on tape, lead spacing 5.0 mm (0.2 inch).

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	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
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 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	-

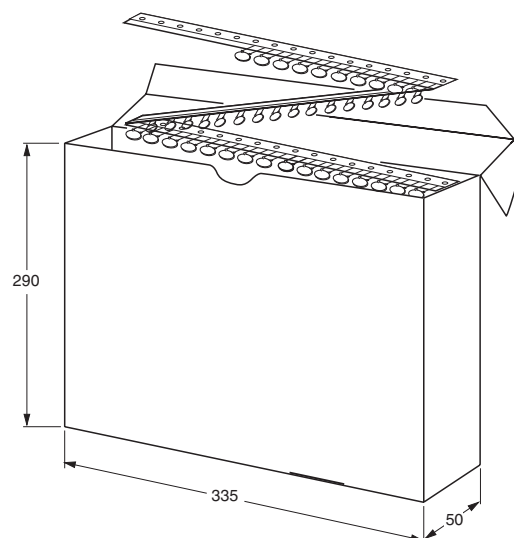
Notes

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.