Ceramic Disc Capacitors

Temperature Characteristic Code

	(NPO)	SL	B(Y5P)	E(Z5U)	F(Z5V)	RY(Y5R)	FY(Y5V)
T.C. (ppm) or Cap. Change %	0±30ppm	+350 -1000	±10%	+22% -56%	+22% -82%	±15%	+22% -82%

Rated Voltage

	1C	1E	1H	2A	2H	3A	3D	3F
Voltage	16V	25V	50V	100V	500V	1000V	2000V	3000V

Part Diameter (mm)

Code	Diameter	Code	Diameter	Code	Diameter	Code	Diameter
5	5mm	8	8mm	11	11mm	14	14mm
6	6mm	9	9mm	12	12mm	15	15mm
7	7mm	10	10mm	13	13mm	16	16mm

Capacitance Code

Code	Capacitance(pF)	Code	Capacitance(pF)
1R0	1	102	1000
1R5	1.5	222	2200
100	10	472	4700
101	100	103	10000

Tolerance Code

Code	Tolerance	Code	Tolerance
C	±0.25pF	K	±10%
D	±0.50pF	M	±20%
J	±5%	Z	+80 – 20%

Lead Configuration Code-Bulk & Taping Package

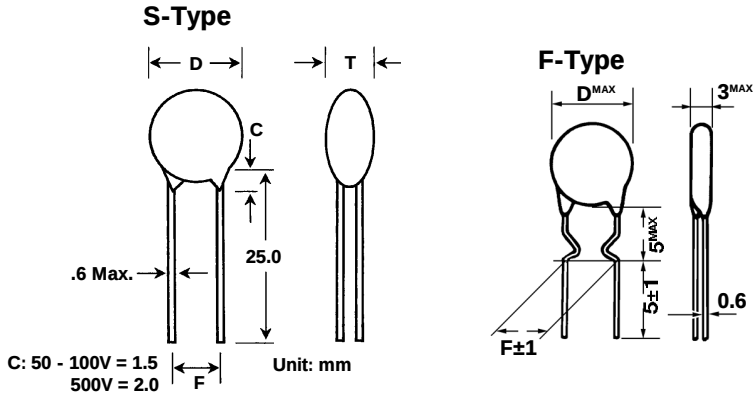
Pitch Code	Configuration and Dimension		
	Kinked/Straight	Lead Space (F)	Lead Length (L)
2 = 2.5mm	Straight (S)	2.5mm	25mm Min.
5 = 5.0mm	Straight (S)	5.0mm	25mm Min.
6 = 6.3mm	Straight (S)	6.3mm	25mm Min.
* 8 = 5.0mm	Inside Kinked (F)	5.0mm	25mm Min.
* 9 = 5.0mm	Inside Kinked (F)	5.0mm	25mm Min.
10 = 10.0mm	Straight (S)	10.0mm	25mm Min.

* Lead configuration must be F Type

Class I Temperature Compensation Type

Features:

- Capacitance has linear temperature coefficient
- Capacitance has high stability



General Specifications

Capacitance Range	.5pF to 820pF
Capacitance Tolerance	±0.25pF, ±0.5pF, ±5%, ±10%
Operating Temperature Range	-25 ~+85°C
Rated Working Voltage Rating	50, 100, 500 VDC
Q Factor @ 1MHz, 1±0.2 Vrms, 25	C≥30pF Q≥1,000 C<30pF Q≥400+20
Insulation Resistance (IR), @25	10,000 M Minimum
Dielectric Strength	3 times the rated WVDC
Testing Parameters	1MHZ ±20%, 1.0Vrms±0.2Vrms

Capacitance Chart

Temp. Char.	Part Dia.	Rated Voltage	Capacitance		Dim. (mm) Max.		
			Range (pF)	Tol.	D	T	F
NPO 0±30 ppm	5	1H (50V) 2A (100V)	0.5-47	C,D (≤10pF) J,K (>=10pF)	5.5	3.5	5.00
	6		51-75		6.5		
	7		82-100		7.5		
	8		120-150		8.5		
	10		180-270		10.5		
	12		300-470		12.5		
			560-1000				
	5	2H (500V)	0.5-36		5.5	4.0	
	6		39~56		6.5		
	8		68~100		8.5		
	10		120~220		10.5		

Temp. Char.	Part Dia.	Rated Voltage	Capacitance		Dim. (mm) Max.		
			Range (pF)	Tol.	D	T	F
SL +350 -1000 ppm	5	1H (50V) 2A (100V)	10~120	J,K	5.5	3.5	5.0
	6		150~220		6.5		
	7		240~330		7.5		
	8		360~470		8.5		
	10		500~820		10.5		
	5	2H (500V)	10~82		5.5	4.0	
	6		100~150		6.5		
	8		180~220		8.5		
	10		240~470		10.5		

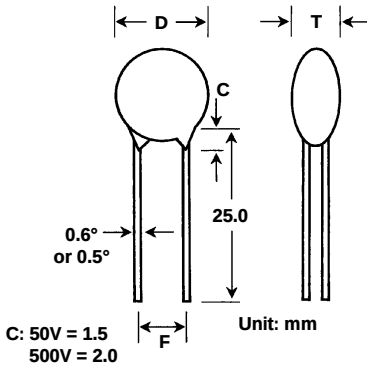
Ceramic Disc Capacitors

Class II HI-K Type

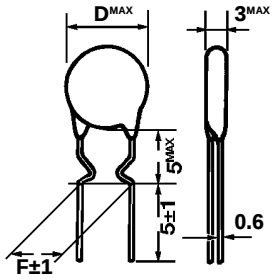
Features:

- Capacitance has non-linear temperature coefficient
- Large capacitance in small size
- Wide range of general purpose applications

S-Type



F-Type



General Specifications

Capacitance Range	100pF to 100000pF
Capacitance Tolerance	±10%, ±20%, ±80% -20%
Operating Temperature Range	-25～85 (Y5P) 10～+85 (Z5U, Z5V)
Rated Working Voltage Rating	50, 100, 500 VDC
Dissipation Factor (tan)	Y5P, Z5U Tan ≤2.5%, Z5V Tan ≤5.0%
Insulation Resistance (IR), @25	10,000 M Minimum or 200 MμF whichever is smaller
Dielectric Strength	2.5 times the rated WVDC
Testing Parameters	1KHZ ±20%, 1.0Vrms±0.2Vrms

Capacitance Chart

Temp. Char.	Part Dia.	Rated Voltage	Capacitance		Dim. (mm) Max.		
			Range (pF)	Tol.	D	T	F
B (Y5P) ±10%	5	1H (50V) 2A (100V)	100～2000	K,M	5.5	3.5	5.00
	6		2200～2700		6.5		
	7		3000～3300		7.5		
	8		3900～4700		8.5		
	10		5600～10000		10.5		
	5	2H (500V)	100～820		5.5		
	6		1000		6.5	4.0	
	7		1500～2000		7.5		
	8		2200～3000		8.5		
	10		3300～5000		10.5		
	12		5600～6800		13.0		
	14		8200～10000		15.0		

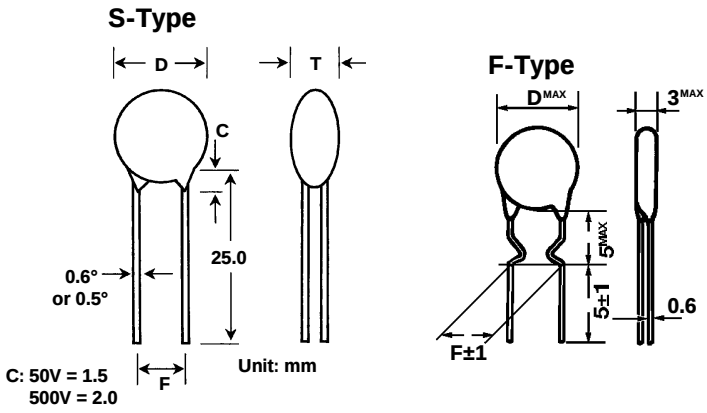
Temp. Char.	Part Dia.	Rated Voltage	Capacitance		Dim. (mm) Max.		
			Range (pF)	Tol.	D	T	F
E (Z5U) +22% -56%	5	1H (50V) 2A (100V)	1000～5000	M,Z	5.5	3.5	5.00
	6		5600～8200		6.5		
	7		10000		7.5		
	8		12000～15000		8.5		
	10		18000～22000		10.5		
	5	2H (500V)	1000～2200		5.5	4.0	
	6		2700～3300		6.5		
	8		3900～6800		8.5		
	10		8200～10000		10.5		

Temp. Char.	Part Dia.	Rated Voltage	Capacitance		Dim. (mm) Max.		
			Range (pF)	Tol.	D	T	F
F (Z5V) +22% -82%	5	1H (50V) 2A (100V)	4700～5000	Z	5.5	3.5	5.00
	6		10000～15000		6.5		
	7		18000～20000		7.5		
	8		22000		8.5		
	10		30000～47000		10.5		
	8	2H (500V)	3300~100000	Z	8.5	4.0	5.0

Class III Semi-Conductive Type

Features:

- Large capacitance in small size.
- Cost saving by replacing film capacitors.
- Capacitance has linear temperature coefficient.
- Stable capacitance change over specified temperature range.



General Specifications

Capacitance Range	6800pF to 220000pF
Capacitance Tolerance	±10%, ±20%, +80% -20%
Operating Temperature Range	-25～+85
Rated Working Voltage Rating	16, 25 & 50 VDC
Dissipation Factor (tanδ)	(Y5V) 16V tanδ 7.5% (Y5V, Y5R) 25/50V tanδ 5.0%
Insulation Resistance (IR), @25	16V 100M Minimum or 10M μF 25/50V 1000M Minimum or 20M μF
Dielectric Strength	2 times the rated WVDC
Testing Parameters	1KHZ ±20%, 1.0Vrms Maximum

Capacitance Chart

Temp. Char.	Part Dia.	Rated Voltage	Capacitance		Dim. (mm) Max.		
			Range (pF)	Tol.	D	T	F
Y (Y5V) +22% -82%	5	1C (16V)	22000	M,Z	5.2	4.0	5.00
	6		33000～100000		6.2		
	10		200000～220000		10.5		
	5	1E (25V)	22000		5.2		
	6		33000～47000		6.2		
	7		100,000		7.2		
	5	1H (50V)	22000		5.2		
	6		33000～100000		6.2		
	8		100,000		8.5		

Temp. Char.	Part Dia.	Rated Voltage	Capacitance		Dim. (mm) Max.		
			Range (pF)	Tol.	D	T	F
RY (Y5R) ±15%	5	1E (25V)	6800～10000	K,M	5.2	4.0	5.00
	6		15000～22000		6.2		
	8		33000～47000		8.5		
	10		68000		10.5		
	5	1H (50V)	6800～10000	K,M	5.2	4.0	
	6		15000～22000		6.2		
	8		33000～47000		8.5		
	10		68000		10.5		

* Additional voltages available upon request.

Ceramic Disc Capacitors

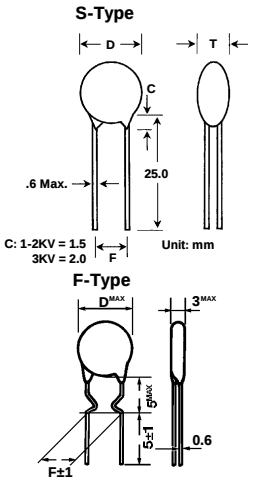
Hi-Voltage 1KV-–3KV Type

General Specifications

Capacitance Range	1pF to 10000pF
Capacitance Tolerance	±5%, ±10%, ±20%, +80% -20%
Operating Temperature Range	-25°C～+85°C (NPO, Y5P) +10°C～+85°C (Z5U, Z5V)
Rated Working Voltage Rating	1000, 2000, & 3000 VDC
Dissipation Factor (tanδ)	Y5P, Z5U Tanδ 2.5%, Z%V Tanδ 5.0% NPO Tanδ .1%
Insulation Resistance (IR), @25	10,000 M Minimum or 200 M μF whichever is smaller
Dielectric Strength	2 times the rated WVDC
Testing Parameters	1KHZ ±20%, 1.0Vrms±0.2Vrms

Diameters And Capacitance Range

Dimension (mm)			1KV
D(max)	T	F(±1)	NPO
6.5	6.0	6.3	1-25
8.5		6.3	26-40
9.5		6.3	41-70
11		6.3	
13		9.5	71-220
14		9.5	330-680
15		9.5	820-1000
17		9.5	
19		9.5	



Capacitance Chart

Temp. Char.	Part Dia.	Rated Voltage	Capacitance		Dim. (mm) Max.		
			Range (pF)	Tol.	D	T	F
B (Y5P) ±10%	6	3A (1KV)	100～1000	K,M	7.0	4.5	5.0
	8		1200～1800		9.0		5.0*
	10		2200～2800		11.0		
	12		3300～4700		13.0		10.0
	13		5000～6800		14.0		9.5
	15		8200		16		9.5
	18		10000		19		9.5
	6	3D (2KV)	150～270		7.5		5.0*
	8		330～1000		9.5		5.0*
	10		1200～1800		11.5		
	12		2200～2700		13.5		10.0
	14		4700～5600		16.5		10.0
	16		6800～10000		17.5		10.0
	6	3F (3KV)	100～270		7.0	6.0	7.5*
	7		330～560		8.0		
	9		680～1000		10.0		
	11		1500～1800		12.0		
	13		2200		14.0		
	14		2700～3300		15.0		
	15		3900		16.0		
	17		4700		18.0		

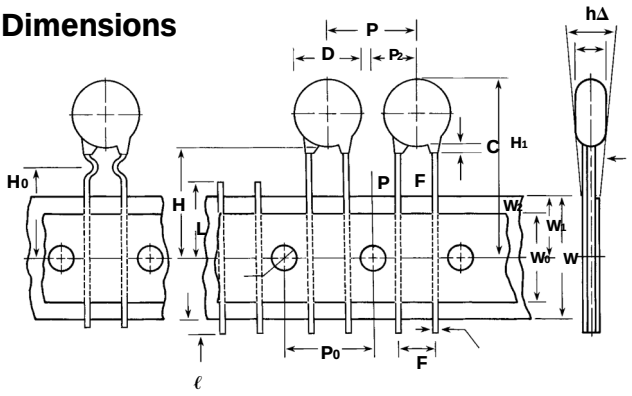
Additional capacitances and voltages available upon request.

* 10mm lead space available upon request.

Temp. Char.	Part Dia.	Rated Voltage	Capacitance		Dim. (mm) Max.		
			Range (pF)	Tol.	D	T	F
E (Z5U) +22% -56%	6	3A (1KV)	100～2200	M,Z	7.0	4.5	5.0*
	8		2700～4700		9.0		5.0*
	8.5		5000		9.5		6.3
	10		5600～6800		11.0		5.0*
	12		8200～10000		13.0		10.0
	16		20000		17.0		9.5
	8	3D (2KV)	2200～3300		17.0		9.5
	10		3900～4700		9.5		5.0*
	14		10000		11.5		
	16		20000		16.5		10.0
	6	3F (3KV)	1000		7.0	6.0	7.5*
	8		1500～2200		9.0		
	10		3300		11.0		
	11		3900		12.0		
	12		4700		13.0		
	14		5600～6800		15.0		
	17		10000		18.0		

Temp. Char.	Part Dia.	Rated Voltage	Capacitance		Dim. (mm) Max.		
			Range (pF)	Tol.	D	T	F
F (Z5V) +22% -82%	6	3A (1KV)	1000～3300	Z	7.0	4.5	5.0*
	8		3600～5600		9.0		5.0*
	10		6800～10000		11.0		
	16		20000		17.0		9.5
	12	3D (2KV)	10000	Z	13.5	4.5	10.0

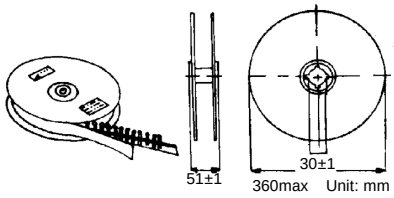
Taping Specification and Dimensions



Item		Symbol	Specification		Remarks
			Value	Tolerance	
Body Diameter		D	11.0	max	
Body Thickness		T	3.5	max	
Lead-wire Diameter		d	0.6	+0.06 -0.05	
Pitch of Component		P	12.7	±1.0	
Feed Hold Pitch		P0	12.7	±0.3	Cumulative pitch error 1.0mm/20pitch
Feed Hole Center to Lead		P1	3.85	±0.7	
Hole Center to Component Center		P2	6.35	±1.3	
Lead-to-Lead Distance		F	5.0	+0.8 -0.2	
Component Alignment, F-R.		h	0	±2.0	
Tape Width		W	18.0	+1.0 -0.5	
Hold-down Tape Width		W_0	11.0	min	
Hole Position		W_1	9.0	+0.75 -0.5	
Hold-down Tape Position		W_2	3.0	max	
Height of Component form Tape Center	For Straight Lead Type	H	20.0	+1.0 -0.5	
	For Kinked Lead Type	H0	16.0	±0.5	
Component Height		H1	32.25	max	
Lead-wire Protrusion		I	2.0	max	
Feed Hole Diameter		D_0	4.0	±0.3	
Total Tape Thickness		t	0.7	±0.2	
Length of Snipped Lead		L	11.0	max	Ground paper 0.5±0.1mm
Coating Rundown on Leads		C	1.5	max	

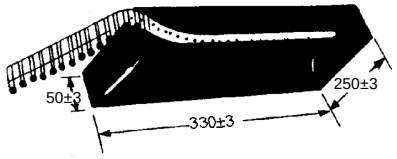
These radial taped ceramic disc capacitors are designed especially for automatic insertion.
The available types for taped radial disc are diameters 11.0mm and under.

PACKAGING FORMAT AND DIMENSIONS



CAPACITOR QUANTITY: 2000 PCS OR 2500 PCS PER REEL

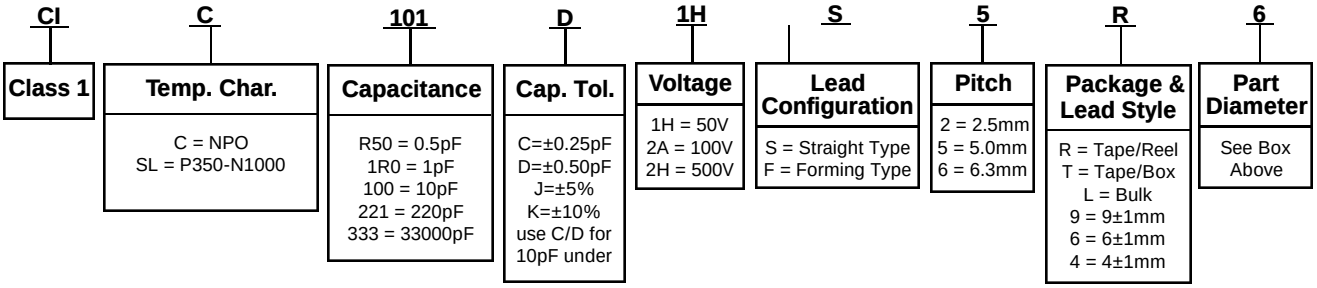
PACKAGING FORMAT AND DIMENSIONS Unit: mm



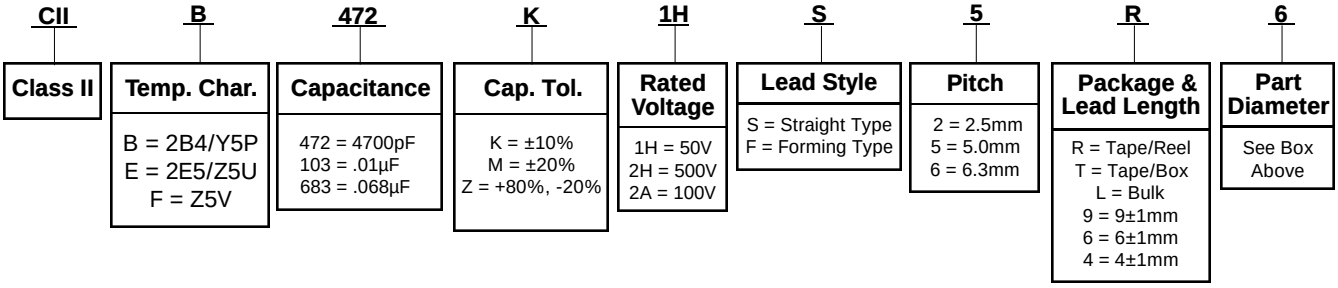
THE PACKING FOR EPOXY COATING CAPACITOR WITH DISK DIAMETER Ø7 OR OVER Ø7 IS 1000 PCS. PER BOX (AMMO)
THE OTHER IS 2000 PCS PER BOX (AMMO)

Ceramic Disc Capacitors

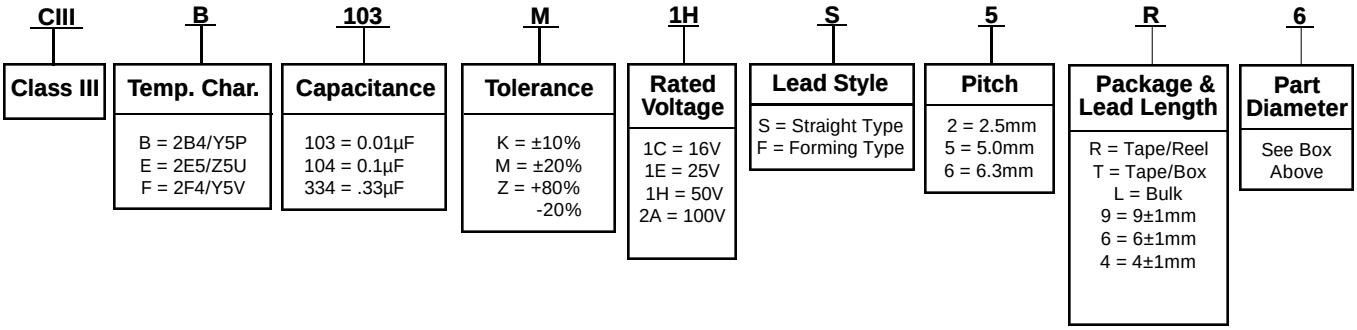
Class I
Part Numbering System



Class II



Class III



High Voltage