

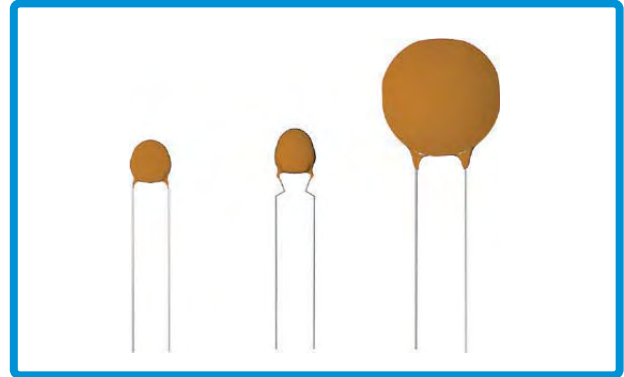
# Ceramic Disc Capacitors



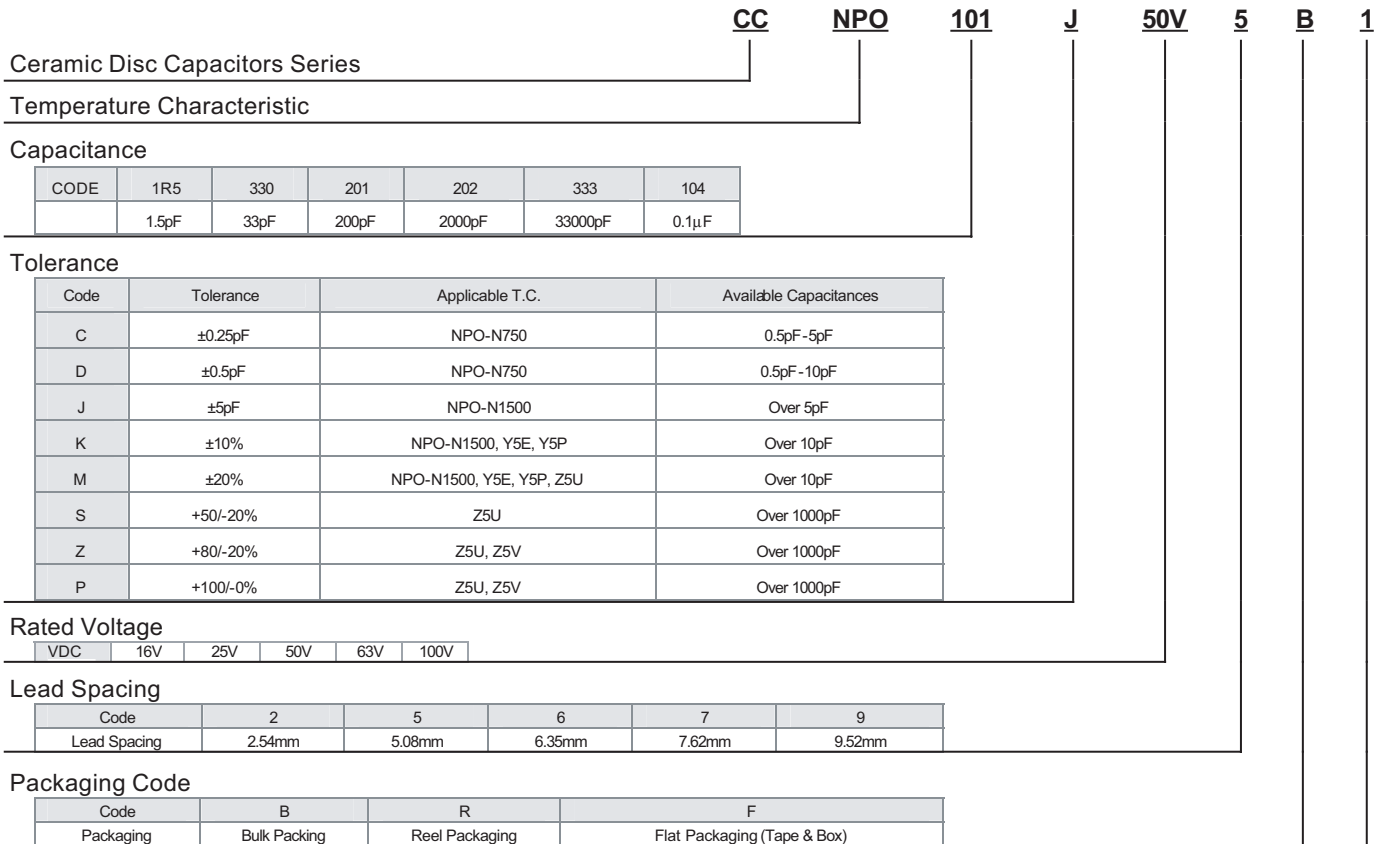
CC Series

MERITEK

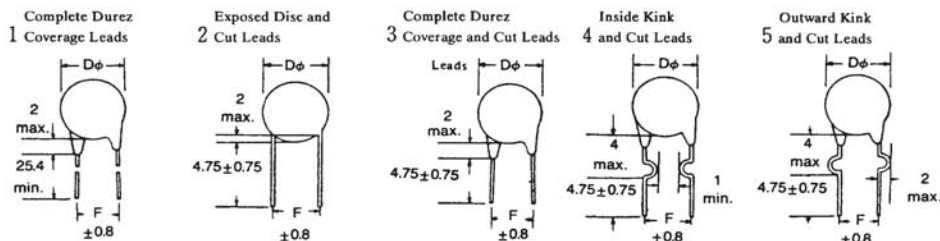
CC series ceramic disc capacitors are produced by sandwiching a ceramic dielectric layer between two electrodes. An epoxy or phenolic coating is applied by means of a spray or dipping process. Applications include bypass, coupling and resonant functions.



## PART NUMBERING SYSTEM



## Lead Type

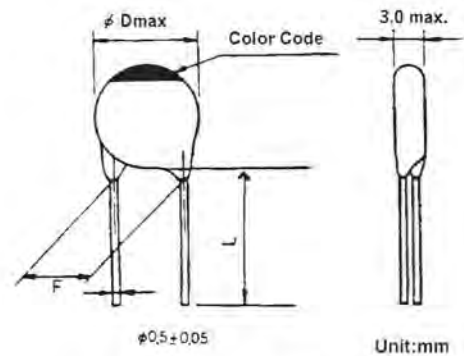


# Ceramic Disc Capacitors Class 1

CC Series

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Temperature compensating disc capacitors have a ceramic dielectric that is formulated to provide predictable linear capacitance change versus temperature change. This predictable linear capacitance change allows the temperature compensating disc capacitor to be used in critical circuit applications such as tuned circuits. A full range of values and voltages is available.



## SPECIFICATIONS

Operating Temperature	-25°C to +85°C
Capacitance	Measured at 1 ±0.1 MHz, 1Vrms at 25°C
Temperature	Please refer to Page 4
Rated voltage	50V, 63V and 100V
Quality Factor	Measured at 1 ±0.1MHz, 1Vrms at 25°C C < 30pF Q=400 + 20C, C ≥ 30pF Q=1000 min. (C = Capacitance)
Tested voltage	250% of rated voltage with 50mA charging current max.
Insulation resistance	10,000 Mega ohms min. at rated voltage 60 sec.
Insulation coating	Phenolic coating applied by a wet dip method

## CAPACITANCE RANGE (pF)

100WVDC & Under

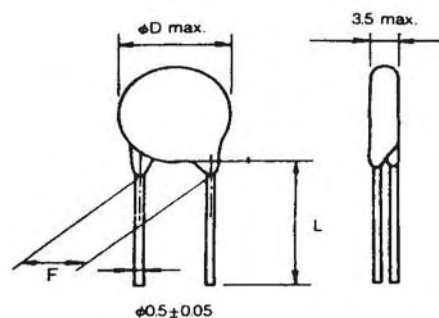
TEMPERATURE CHARACTERISTIC									
Color Code	Black	Red	Orange	Yellow	Green	Blue	Violet		
DØ ±1mm	NPO	N75/N80	N150	N220	N330	N470	N750	SL (GP)	N1500
4	1-24	1-12	1-24	1-27	1-27	1-33	1-43	1-68	27-56
5	25-47	13-22	25-47	28-47	28-47	34-47	44-82	72-100	62-100
6	50-100	24-33	50-100	50-100	50-100	50-100	83-100	120-220	120-220
8	120-150	35-68	120-150	120-150	120-150	120-150	120-150	250-470	250-470
10	180-220	72-130	180-220	180-220	180-220	180-220	180-220	500-620	500-620
12	250-300	140-180	250-300	250-300	250-300	250-300	270-390	680-1000	620-1000

# Ceramic Disc Capacitors Class 2

CC Series

MERITEK

Temperature stable and general-purpose disc capacitors are manufactured from a variety of high K (dielectric constant) ceramic materials. Circuit applications include bypass and coupling functions, wherein a larger amount of capacitance is required and the circuit is less sensitive to capacitance change with temperature variations. A number of dielectrics are offered along with a wide range of capacitance values and voltage ratings.



Unit: mm

## SPECIFICATIONS

Operating Temperature	-30°C to +85°C: Y5E, Y5P +10°C to +85°C: V5U, Z5V
Capacitance	Measured at 1 $\pm$ 0.1KHz, 1Vrms at 25°C
Temperature	Y5E: $\pm$ 4.7%      Y5P: $\pm$ 10% Z5U: +22/-56%    Z5V: +22/-82%
Rated voltage	50V, 63V and 100V
Quality Factor	Measured at 1 $\pm$ 0.1MHz, 1Vrms at 25°C Y5E, Y5P and Z5U: 2.5% max. Z5V: 5.0% max.
Tested voltage	250% of rated voltage with 50mA charging current max.
Insulation resistance	10,000 Mega ohms min. at rated voltage 60 sec.
Insulation coating	Phenolic coating applied by a wet dip method

## CAPACITANCE RANGE (pF)

100WVDC & Under

### Temperature Characteristic

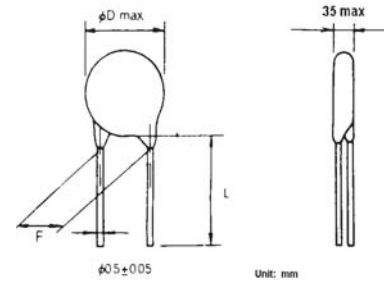
Diameter D $\phi$ $\pm$ 1mm	Y5E	Y5P	Z5U	Z5V
4	100-470	100-1000	1000-2700	1000-5000
5	500-680	1200-1500	3000-3900	5600-8200
6	820-1000	1800-2200	4000-5600	10000
8	1200-2700	2500-5600	6800-10000	22000-33000
10	3000-5600	6200-1000	20000	40000-50000

# Ceramic Disc Capacitors Class 3

CC Series

MERITEK

These semiconductor type ceramic disc capacitors provide economical volumetric efficiency. They are best suited for use in low impedance circuits wherein low insulation resistance can be tolerated. The broad variation of lead styles and the option of radial tape and reel packaging enhance their popularity in bypass and coupling applications. Working voltage options permit selection of the smallest size discs for lower voltage applications



## SPECIFICATIONS

Operating Temperature	-30°C to +85°C
Capacitance	Measured at 1 ±0.1MHz, 1Vrms at 25°C
Temperature	Y5P: ±10%                      Y5T: +22/-33% Y5U: +22/-56%                Y5V: +22/-82%
Rated voltage	16V, 25V and 50V
Dissipation factor	Measured at 1 ±0.1KHz, 1Vrms at 25°C 16V: 7.0% max.    25V and 50V: 5.0% max.
Tested voltage	250% of rated voltage with 50mA charging current max.
Insulation resistance	Measured at rated voltage 60 sec. 16V: 500 Mega ohms min. 25V and 50V: 500 Mega ohms x µF min.
Insulation coating	Phenolic coating applied by a wet dip method

## CAPACITANCE RANGE (pF)

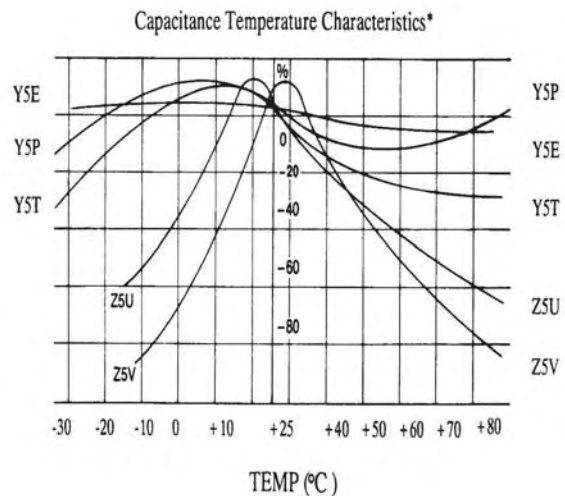
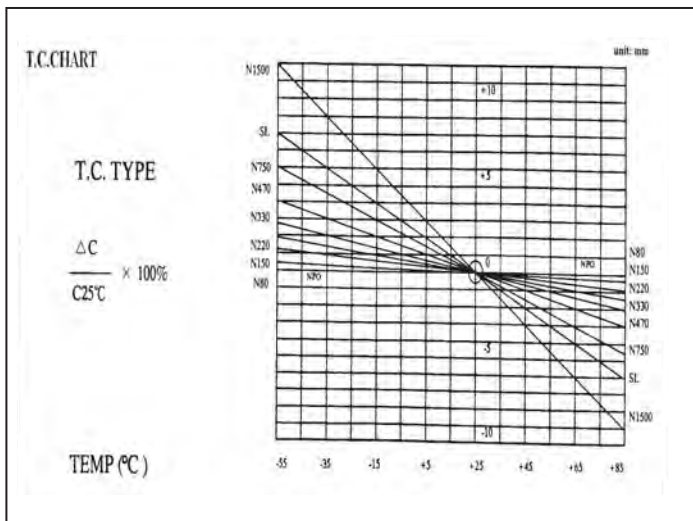
Temperature Characteristic	Y5P			Y5T			Y5U			Y5V		
	16V	25V	16V	16V	25V	50V	16V	25V	50V	16V	25V	50V
Capacitance (µF)	DØ ±1mm			DØ ±1mm			DØ ±1mm			DØ ±1mm		
0.01	5	5	5	5	5	5	5	5	5	5	5	5
0.022	6	8	8	5	6	5	5	5	5	5	5	5
0.033	6	8	10	5	6	8	5	6	8	5	5	6
0.047	8	10	12	6	6	8	6	6	8	5	5	6
0.10	10	12	14	6	8	10	6	8	10	6	7	8

# Ceramic Disc Capacitors

CC Series

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EIA Code RS-198	Material Coefficient	Temperature Coefficient (+25°C to 85°C)			
		0.5-2pF	2.1-3.9pF	4.0-9.9pF	10pF UP
C0	NP0	K (±250)	J (±120)	H (±60)	G (±30)
S1	N030	K (±250)	J (±120)	H (±60)	G (±30)
U1	N080	K (±250)	J (±120)	H (±60)	G (±30)
P2	N150	K (±250)	J (±120)	H (±60)	G (±30)
R2	N220	K (±250)	J (±120)	H (±60)	G (±30)
S2	N330	K (±250)	J (±120)	H (±60)	H (±60)
T2	N470	K (±250)	J (±120)	J (±60)	H (±60)
U2	N750	K (±250)	J (±120)	J (±60)	J (±120)
P3	N1500	K (±250)	K (±250)	K (±250)	K (±250)
	SL	P350-N1000			



## EIA TEMPERATURE CHARACTERISTIC CHART

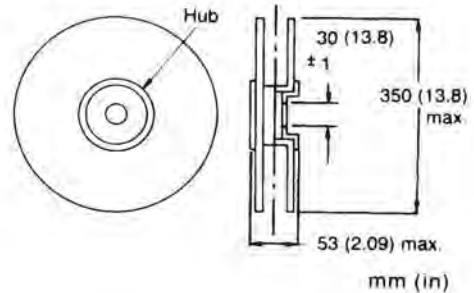
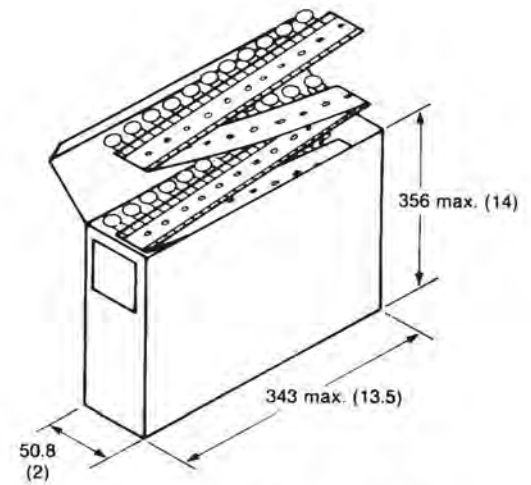
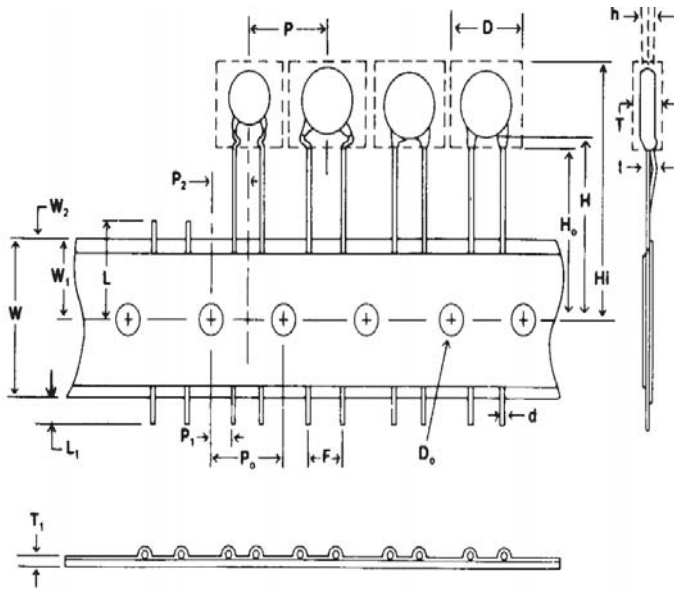
First Digit is Low Temperature	Second Digit is High Temperature	Last Digit is Capacitance Change Over Temperature Range From +25°C Reading	
X -55°C	4 +65°C	A	±1.0%
Y -30°C	5 +85°C	B	±1.5%
Z -10°C	6 +105°C	C	±2.2%
	7 +125°C	D	±3.3%
	8 +150°C	E	±4.7%
		F	±7.5%
		P	±10%
		R	±15%
		S	±22%
		T	+22/-33%
		U	+22/-56%
		V	+22/-82%

# Ceramic Disc Capacitors

CC Series

MERITEK

**Meritek** ceramic capacitors are available in tape and reel packaging for automatic insertion equipment. Meritek's tape and reel specifications comply with the requirements of EIA Standard RS-468. Configurations are also available to meet the specific requirements of Universal, Panasert, and Avisert equipment. Please contact our sales department to discuss your special requirements.



Item	Description	Dimensions & Tolerances	
		Inches	mm
D	Maximum body diameter – Note 1	.472	12.0
T	Maximum body thickness	.256	6.5
d	Nominal wire diameter	.024	0.6
P	Capacitor taping pitch	.500 ± 0.039	12.7 ± 1.0
P <sub>0</sub>	Sprocket hole pitch	.500 ± 0.039	12.7 ± 1.0
P <sub>1</sub>	Hole center to lead center	.152 ± 0.028	3.85 ± 0.7
P <sub>2</sub>	Hole center to disc center	.250 ± 0.051	6.35 ± 1.3
F	Lead center to lead center	.197 ± 0.031	5.0 ± 0.8
H	Front-to-rear disc alignment	0 ± 0.079	0 ± 2.0
W	Carrier tape width	.709 <sup>+0.039</sup> <sub>-.020</sub>	18.0 <sup>+1.0</sup> <sub>-.5</sub>
W <sub>1</sub>	Hole position on carrier	.354 <sup>+0.030</sup> <sub>-.020</sub>	9.0 <sup>+0.75</sup> <sub>-.5</sub>
W <sub>2</sub>	Adhesive tape position max.	.118	3.0
H	Hole center to tangent line	.787 <sup>+0.060</sup> <sub>-.040</sub>	20.0 <sup>+1.5</sup> <sub>-1.0</sub>
H <sub>0</sub>	Hole center to starting plane	.630 ± 0.020	16.0 ± 0.5
H <sub>i</sub>	Hole center to top of disc	1.270 max.	32.25 max.
L	Maximum lead cut-out length	.433	11.0
L <sub>1</sub>	Maximum wire protrusion	.118	3.0
D <sub>0</sub>	Sprocket hole diameter	.157 ± 0.012	4.0 ± 0.3
T <sub>1</sub>	Total tape thickness	.035	0.9
T	Maximum lead offset	.06	1.5

## Notes:

1. Body diameters to 0.906 inch (23mm) available on 1.0 inch (25.4mm) pitch.
2. Taping pitch of 1.0 inch (25.4mm) available.
3. Wire with a diameter of 0.032 inch (0.8mm) is also available (preferred on larger diameters.)