

**CERAMIC DISC CAPACITORS TEMPERATURE COMPENSATING  
(CLASS 1)**

**TC:**

Temperature compensating ceramic capacitors boast unique characteristics concerning their capacity-temperature coefficient which is practically unknown in other types of capacitors. In addition, the following advantages are incorporated.

- a) Changes in capacitance due to temperature changes are linear and reversible. Moreover, any optional temperature coefficient is obtainable.
- b) Compared with conventional types of capacitors, construction of these is much simpler and inductance is negligible, enabling them to function as capacitors up to high-frequencies.
- c) Conveniently small-sized.
- d) The Q-value is superior from low-to high-frequency ranges.
- e) Excellent heat resistance ; insulation deterioration due to temperature rise is limited.
- f) Capacitors with small capacitance tolerance are easily obtained. No secular change is observed in capacity value.
- g) Because of their stout moisture resistance and long-life characteristics, these capacitors can be used permanently under normal conditions.

**ELECTRIC CHARACTERISTICS**

**1. Capacitance and Temperature**

Measured at a temperature of 20°C, using an AC current at a frequency of 1MHz ± 100KHz and at an effective value of 0.5~5V.

Unless doubt exists on to measurement results, the frequency is 0.4~1.4MHz.

Symbol	Cap. ≤10pF	Cap. > 10pF
C	± 0.25pF	-
D	± 0.5pF	-
F	± 1.0pF	-
G	± 2.0pF	±2%
J	-	±5%
K	-	±10%
M	-	±20%

Capacitance and Applicable Tolerance				
Capacitance	0.5~4pF	5pF	6 ~ 10pF	more than 10pF
Tolerance	C.D	C.D.F	D.F.G	J.K.M

**2. Quality Factor**

C: CAP

T.C.	Capacitance	Q Value
P100 to N1500 & SL	30pF and over	≥1000
	less than 30pF	≥400+20 x C
N2200 to N4700	30pF and over	≥500
	less than 30pF	≥200+10 x C

**3. Insulating resistance**

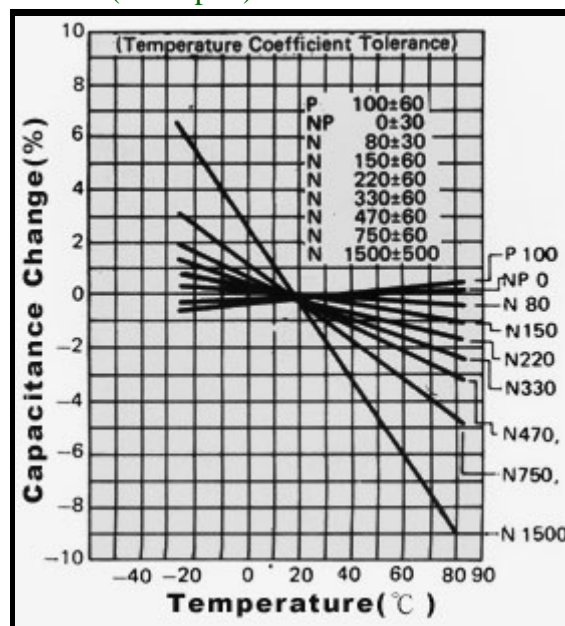
10000 M $\Omega$  min. at working voltage for 1 minute.

**4. Testing Voltage**

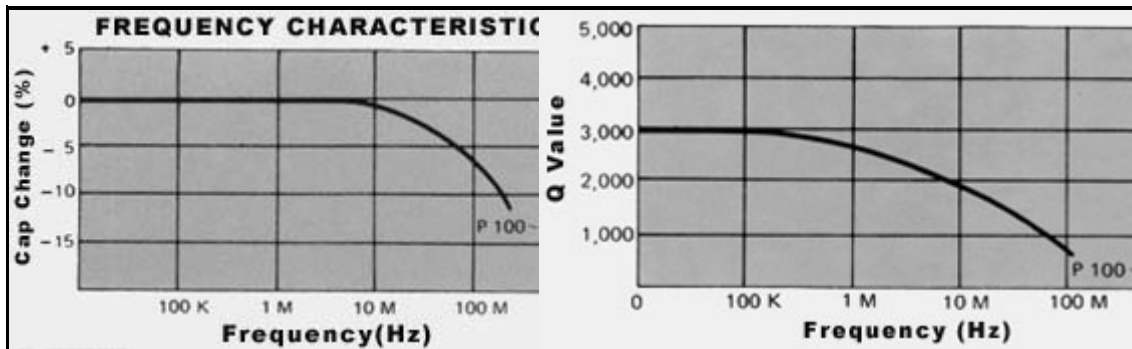
DC voltage is applied between terminals from 1 to 5 seconds; voltage is applied through a resistor with maximum charging discharging currents less than 50mA

W.V	25~500 V	1~2 KV	3~5 KV	6~15 KV
T.V	W.V. x 3	W.V. x 2	W.V. x 1.75	W.V. x 1.5







**5. Temperature Coefficient(Example:)**



EIA RS-198		JIS		Color
Marking	Temperature Coefficient (PPm/deg)	Marking	Temperature Coefficient (PPm/deg)	
P7	P 150		P=+, N=-	
M7	P 100	A K	P 100 $\pm$ 250	Gold
S6	P 33	B J	P 30 $\pm$ 120	Gray
C0	NP 0	C H	NP 0 $\pm$ 60	Black
S1	N 33	H G	N 30 $\pm$ 30	Brown
U1	N 75	L H	N 80 $\pm$ 60	Red
P2	N 150	P H	N 150 $\pm$ 60	Orange
R2	N 220	R H	N 220 $\pm$ 60	Yellow
S2	N 330	S H	N 330 $\pm$ 60	Green
T2	N 470	T H	N 470 $\pm$ 60	Blue
U2	N 750	U J	N 750 $\pm$ 120	Purple
P3	N 1500	V K	N1000 $\pm$ 250	-
R3	N 2200	W L	N1500 $\pm$ 5000	-
S3	N 3300	X	N2200	-
T3	N 4700	Y	N3300	-
	P 100 ~ N 750	Z	N4700	-
	P 150 ~ N 1500	SL	P 350 ~ N1000	-
	N 1000 ~ N 5200	YN	N 800 ~ N5800	-

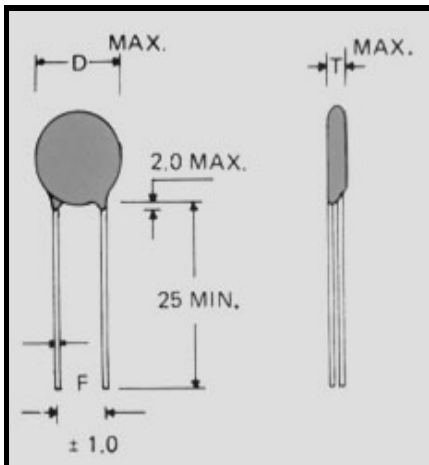


**6. Marking**

Diameter T.C.	5 $\phi$ & Smaller	6 $\phi$ , 8 $\phi$	more than 10 $\phi$
SL (P350~N1000)	 Capacitance Working Voltage	 Capacitance Capacitance Tolerance Working Voltage	 Manufacturer Logo Capacitance Capacitance Tolerance Working Voltage
P100~ N750 (A.B.C.H.L. P.R.S.T.U. )	 Temperature Coefficient Capacitance Working Voltage	 Temperature Coefficient Capacitance Capacitance Tolerance Working Voltage	 Manufacturer Logo Temperature Coefficient Capacitance Capacitance Tolerance Working Voltage

**Note:** Underline of marking expresses 50V, no underline stands 500V.

**50V DC.**



**Specifications:**

- Temp. Range: -25 °C to +85 °C
- Working Voltage: 50V. DC.
- Testing Voltage: 150V. DC. 1~5 Sec. (50mA Max)
- Insulation Resistance: 10,000 M $\Omega$ MIN (50V. DC.)
- Q: More than 30pF: 1000Min.  
Less than 30pF: 400+20C(c:cap)
- Testing Condition: 1 MHz (0.5~5V rms) at 20 °C