

# DISC CERAMIC CAPACITORS

SAMWHA disc ceramic capacitors are designed and produced to offer the user capacitors with high reliability and small size. With wide selection of temperature characteristics and voltage ratings, the user can make use for in various circuit application.

## TYPE DESIGNATION (HOW TO ORDER)

<b>CC</b>	<b>C</b>	<b>1H</b>	<b>120</b>	<b>J</b>	<b>04</b>	<b>F</b>	<b>K</b>	<b>5</b>
①	②	③	④	⑤	⑥	⑦	⑧	⑨

① Style & Class	CC, EC	Temperature Compensating Type	CK, EK	High Dielectric Type	CG	Semiconductive Type
	SC	AC250(Testing Voltage : AC2500V)		SD	AC250/400V(Testing Voltage : AC4000V)	

② Temp. Char.	CC, EC TYPE (PPM/°C)				CK, EK, CG, SC, SD TYPE		
	C	NPO(0)	T	N470(-470)		B	Y5P(+10~-10%)
	L	N80(-80)	U	N750(-750)		R	Y5R(+15~-15%)
	P	N150(-150)	O	SL(+350~-1000)		E	Y5U(+22~-56%)
	R	N220(-220)				F	Y5V(+22~-82%)
	S	N330(-330)				Fz	Z4V(+22~-82%)

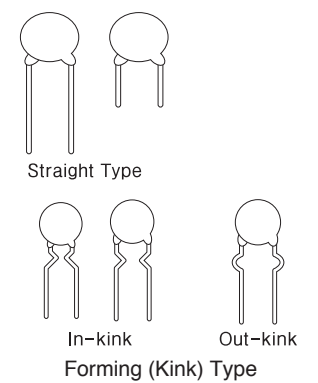
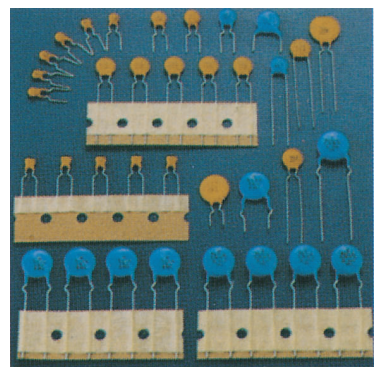
③ Rating Voltage	1A	10V	1B	12.5V	1C	16V	1E	25V				1H	50V			
	2A	100V	2B	125V			2E	250V			2G	400V	2H	500V		
	3A	1KV	3B	1.25KV	3D	2KV			3F	3.15KV	3G	4KV	3H	5KV	3J	6.3KV
	4A	10KV	4B	12.5KV	4C	16KV										

④ Capacitance (in picofarads) The first two digits indicate significant digits. The 3rd digit indicate the number of zero following. R denotes decimal. ex)0.5pF-OR5, 10pF-100, 100pF-101

⑤ Cap. Tolerance	C	±0.25pF	D	±0.5pF	F	±1.0pF	J	±5%	K	±10%	M	±20%	P	+100% -0%	Z	+80% -20%
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⑥ Disc Diameter	Code	04	05	06	08	09	10	11	12	14	15	16	18	20
	Dia(φ mm)	4.0	5.0	6.3	8.0	9.0	10.0	11.0	12.5	14.0	15.0	16.0	18.0	20.0

⑦ Packing Style	Packing Style		Lead Variation	
	F	Taping Type Flat Pack	S	Straight Type
K			In-Kink Type	
F			Out-Kink Type	
B	Bulk	S	Straight Long Type	
		W	Kink short Type	
		K	Kink long Type	
		L	Kink short Type	
		N	Straight short Type	



⑨ Lead Spacing & Pitch of Component	Taping Type	Code	5	7	8	9	1	2
		Lead Spacing (mm)	5.0	7.5	7.5	7.5	10.0	10.0
		Pitch of component (mm)	12.7	15.0	30.0	25.4	25.4	30.0
Bulk Type	Code	2	5	7	1			
	Lead Spacing (mm)	2.5	5.0	7.5	10.0			

## DISC CERAMIC CAPACITORS

# CLASS I Temperature Compensating Ceramic Capacitor

### SPECIFICATION

Temp. Range : -25~+85°C (Y class)  
 Capacitance : Measured at 1 MHz, 1 Vrms and 20°C ± 2°C

Testing Voltage :

R.V	50V DC	500V DC	1~2KV DC
T.V	150V DC	1,250V DC	R.V×2

Quality Factor (Q)

Capacitance	Q value
30pF and over	≥1000
less than 30pF	≥400+(20×C)

Insulation Resistance : 10,000MΩ MIN. at Rating voltage for 1 minute  
 (500V and above : 500V)

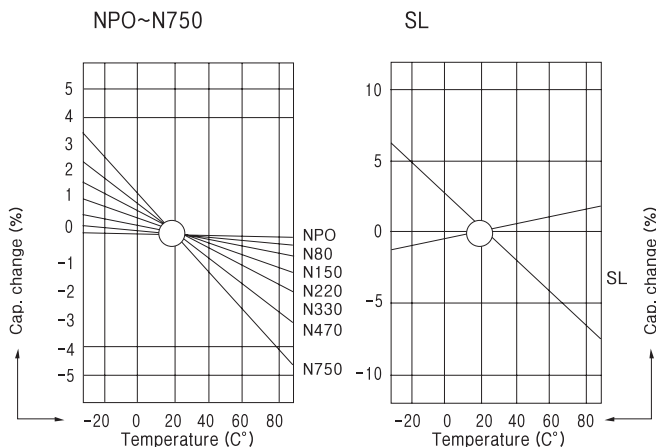
### COLOR CODE

TC.	Color	TC.	Color	TC.	Color
NPO(C)	Black	N 80(L)	Red	N150(P)	Orange
N220(R)	Yellow	N330(S)	Green	N470(T)	Blue
N750(U)	Purple	SL	Omitted		

### TEMP. COEFFICIENT TOLERANCE

Code	G	H	J	K	L	M	N
Tol.(PPM/°C)	±30	±60	±120	±250	±500	±1000	±2500

### TEMP. COEFFICIENT



### COMBINATION OF THE CAPACITANCE VALUE AND THE TC.

Cap	TC.PPM/°C							
	NPO	N80	N150	N220	N330	N470	N750	P350~1000
	C■	L■	P■	R■	S■	T■	U■	SL
Less than 2pF	CK	LK	PK	RK	SK	TK	UK	SL
3pF	CJ	LJ	PJ	RJ	SJ	TJ	UJ	SL
4pF and above	CH	LH	PH	RH	SH	TH	UH	SL

### SAMWHA Standard (Cap.and Cap.Tol)

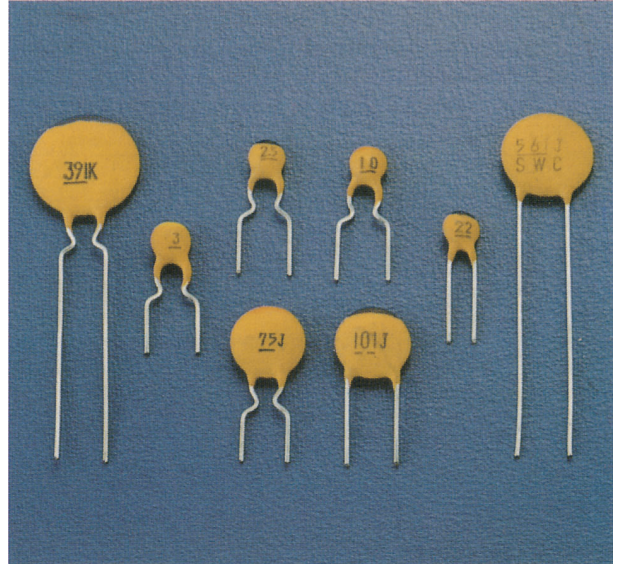
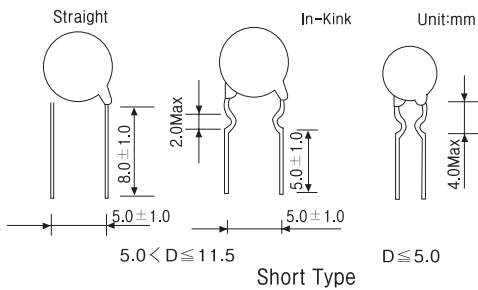
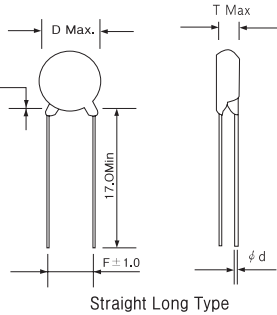
T.C Cap.(pF)	Cap. Tol. C~U, SL	T.C Cap.(pF)	Cap. Tol. C~U, SL
0.5	C,D	56	J,K
1	C,D	62	J
2	C,D	68	J,K
3	C,D	75	J
4	C,D	82	J,K
5	C,D	91	J
6	D,F	100	J,K
7	D,F	110	J
8	D,F	120	J,K
9	D,F	130	J
10	D,F	150	J,K
11	J	160	J
12	J,K	180	J,K
13	J	200	J
15	J,K	220	J,K
16	J	240	J
18	J,K	270	J,K
20	J	300	J
22	J,K	330	J,K
24	J	360	J
27	J,K	390	J,K
30	J	430	J
33	J,K	470	J,K
36	J	510	J
39	J,K	560	J,K
43	J	620	J
47	J,K	680	J,K
51	J	820	J

# DISC CERAMIC CAPACITORS

## CLASS I Temperature Compensating Ceramic Capacitor

### LEAD VARIATION (BULK TYPE)

R.V.(V.DC)	Unit : mm
50	1.5MAX
500	2.0MAX
Above 1KV	3.0MAX



### CAPACITANCE VALUE ACCORDING TO TYPE(pF)

T.C	CAPACITANCE (pF)								DIMENSIONS (mm)				PART NO. (How to order)	MARKING	
	R.V	NPO (C)	N80 (I)	N150 (P)	N220 (R)	N330 (S)	N470 (T)	N750 (U)	P350-N1000 (SL)	D	T	F			φ d
50v DC	0.5, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 18, 20, 22, 24, 27, 30	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 18	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 18, 20	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 18, 20, 22, 24	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 18, 20	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 18, 20	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 18, 20, 22, 24	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 18, 20, 22, 24	0.5, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 18, 20, 22, 24, 27, 30, 33, 36, 39, 43, 47, 51, 56, 62, 68, 75, 82, 91	4.0	3.5	5.0 (2.5)	0.50	CC*1H***04**	 D ≤ 5.0
	33, 36, 39, 43, 47	20, 22, 24, 27, 30	22, 24, 27, 30	27, 30, 33, 36	22, 24, 27, 30, 33, 36, 39	27, 30, 33, 36, 39	39, 43, 47	100, 110, 120	100, 110, 120	5.0	3.5	5.0 (2.5)	0.50	CC*1H***05**	 6.3 ≤ D ≤ 9.0
	51, 56, 62, 68, 75	33, 36, 39, 43, 47	33, 36, 39, 43, 47	39, 43, 47, 51, 56, 62, 68	43, 47, 51, 56, 62	43, 47, 51, 56	51, 56, 62, 68, 75, 82, 91	150, 180, 200, 220, 240	150, 180, 200, 220, 240	6.3	3.5	5.0	0.50	CC*1H***06**	 D ≥ 10.0
	82, 91, 100, 110, 120, 130, 150	51, 56, 62, 68, 75, 82	51, 56, 62, 68, 75, 82	75, 82, 91, 100, 110, 120	68, 75, 82, 91, 100	62, 68, 75, 82, 91, 100, 110, 120	100, 110, 120, 150, 180, 200	270, 300, 330, 360, 390, 430, 470	510, 560, 620, 680, 820	8.0	3.5	5.0	0.50	CC*1H***08**	 D ≤ 5.0
500v DC	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 18, 20, 22, 24			2, 3, 4, 5, 6, 12, 13, 15			2, 3, 4, 5, 6, 7, 8, 9, 10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 18, 20, 22, 24, 27, 30, 33, 36, 39, 43, 47, 51, 56, 62, 68	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 18, 20, 22, 24, 27, 30, 33, 36, 39, 43, 47, 51, 56, 62, 68	5.0	4.0	5.0	0.50	CC*2H***05**	 D ≤ 5.0
	27, 30, 33, 36, 39, 43	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 18, 20	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 18, 20, 22, 24, 27, 30	7, 8, 9, 10, 11, 18, 20, 22, 24, 27, 30, 33	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 18, 20, 22, 24, 27, 30, 33, 36	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 18, 20, 22, 24, 27, 30, 33, 36, 39, 43	11, 12, 13, 15, 16, 18, 20, 22, 24, 27, 30, 33, 36, 39, 43, 47, 51, 56, 62, 68	27, 30, 33, 36, 39, 43, 47, 51, 56, 62, 68	6.3	4.0	5.0	0.50	CC*2H***06**	 6.3 ≤ D ≤ 9.0	
	47, 51, 56, 62, 68, 75, 82	22, 24, 27, 30, 33, 36	33, 36, 39, 43, 47	36, 39, 43, 47, 51, 56	39, 43, 47, 51, 56	47, 52, 56, 62	75, 82, 91, 100	130, 150, 160, 180, 200, 220	130, 150, 160, 180, 200, 220	8.0	4.0	5.0	0.50	CC*2H***08**	 D ≥ 10.0
	91, 100, 110, 120, 130	39, 43, 47, 51, 56, 62	51, 56, 62, 68, 75	62, 68, 75, 82, 91, 100	62, 68, 75, 82, 91	68, 75, 82, 91, 100, 110	110, 120, 150, 180	240, 270, 300, 330, 360, 390, 430, 470, 510, 560	240, 270, 300, 330, 360, 390, 430, 470, 510, 560	10.0	4.0	5.0	0.50	CC*2H***10*	 D ≥ 10.0
150, 160, 180, 200	68, 75, 82, 91, 100	82, 91, 100, 110, 120	110, 120, 150	100, 110, 120, 150	120, 150, 180	200, 220, 240, 270, 300			12.5	4.0	5.0	0.50	CC*2H***12*		

## DISC CERAMIC CAPACITORS

# CLASS II High Dielectric Constant Ceramic Capacitor

### SPECIFICATION

Temp. Range : -25~+85°C (Y class)  
 +10~-65°C (Fz)  
 Capacitance : Measured at 1KHz, 1 Vrms and 20°C ± 2°C

Testing Voltage :

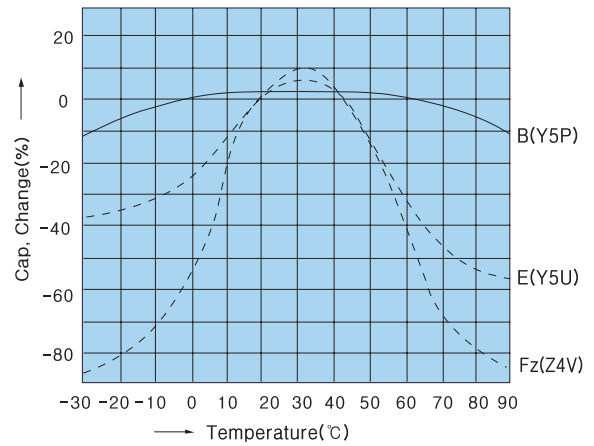
R.V	50V DC	500V DC	1~2KV DC	3KV DC	4~KV DC
T.V	R.V×3	R.V×2.5	R.V×2	R.V×1.75	R.V×1.5

Insulation Resistance : 10,000MΩ or 200MΩ · μF Whichever less at Rating Voltage for 1minute

Dissipation Factor (tanδ)

T.C	B	E	Fz
tanδ	2.5% Max	2.5% Max	5.0% Max

### TEMP. CHAR.











### CAPACITANCE VALUE ACCORDING TO TYPE(pF)

R.V	T.C	CAPACITANCE (pF)			DIMENSIONS (mm)				PART NO. (How to order)	MARKING
		Y5P (B)	Y5U (E)	Z4V (Fz)	D	T	F	φ d		
50V DC		150, 180, 220, 270, 330, 390, 470, 560, 680	-	2200, 3300	4.0	3.5	5.0 (2.5)	0.50	CK*1H*****04**	
		100, 120, 820, 1000, 1200, 1500	-	1000, 15000, 4700	5.0	3.5	5.0 (2.5)	0.50	CK*1H*****05**	
		1800, 2200	-	5600, 10000	6.3	3.5	5.0	0.50	CK*1H*****06**	
		2700, 3300, 3900, 4700, 5600	-	15000, 22000, 27000	8.0	3.5	5.0	0.50	CK*1H*****08**	
		6800, 8200	-	3300, 40000	10.0	3.5	5.0	0.50	CK*1H*****10**	
		10000	-	47000	12.0	3.5	5.0	0.50	CK*1H*****12**	
500V DC		120, 150, 180, 220, 270, 330, 390, 470, 560, 680	-	2200	5.0	4.0	5.0	0.50	CK*2H*****05**	
		100, 820, 1000, 1200, 1500	1000	1000, 4700	6.3	4.0	5.0	0.50	CK*2H*****06**	
		1800, 2200	2200	10000	8.0	4.0	5.0	0.50	CK*2H*****08**	
		2700, 3900	4700	-	10.0	4.0	5.0	0.50	CK*2H*****10**	
		4700, 5600, 6800	6800	20000, 22000	12.5	4.0	5.0	0.50	CK*2H*****12**	
		8200, 10000	10000	-	16.0	4.0	10.0	0.65	CK*2H*****16**	

# DC High Voltage Ceramic Capacitor

## HIGH VOLTAGE CERAMIC CAPACITOR (EPOXY COATED CERAMIC CAPACITOR)

R.V	T.C	CAPACITANCE (pF)			DIMENSIONS (mm)				PART NO. (How to order)	MARKING
		Y5P (B)	Y5U (E)	Z4V (Fz)	D	T	F	φ d		
500V DC		10000			16.0	4.0	10.0	0.65	EKΔ2HΔΔΔ16ΔΔ	
1KV DC		100, 120, 150, 180, 220, 270, 330, 390, 470, 560, 680	1000	1000, 2200	6.3	5.0	5.0	0.55	EKΔ3AΔΔΔ06ΔΔ	 6.3 ≤ D ≤ 9.0
		820, 1000, 1200, 1500		4700	8.0	5.0	5.0	0.55	EKΔ3AΔΔΔ08ΔΔ	
		1800, 2200	2200	10000	10.0	5.0	5.0(7.5)	0.55(0.65)	EKΔ3AΔΔΔ10ΔΔ	
		2700, 3300	4700		12.5	5.0	5.0(7.5)	0.55(0.65)	EKΔ3AΔΔΔ12ΔΔ	
		3900, 4700			14.0	5.0	7.5(10.0)	0.65	EKΔ3AΔΔΔ14ΔΔ	 D ≥ 10.0
		5600, 6800		22000	16.0	5.0	7.5(10.0)	0.65	EKΔ3AΔΔΔ16ΔΔ	
		8200, 10000	10000		18.0	5.0	7.5(10.0)	0.65	EKΔ3AΔΔΔ18ΔΔ	
2KV DC		100, 120, 150, 180, 220, 270, 330, 390, 470, 560		1000, 2200	6.3	5.0	5.0	0.55	EKΔ3DΔΔΔ06ΔΔ	 6.3 ≤ D ≤ 9.0
		680, 820, 1000	1000		8.0	5.0	7.5(5.0)	0.65(0.55)	EKΔ3DΔΔΔ08ΔΔ	
		1200, 1500		4700	10.0	5.0	10.0(7.5)	0.65	EKΔ3DΔΔΔ10ΔΔ	
		1800, 2200, 2700	2200	6800, 10000	12.5	5.0	10.0(7.5)	0.65	EKΔ3DΔΔΔ12ΔΔ	
		3300, 3900	4700		14.0	5.0	10.0(7.5)	0.65	EKΔ3DΔΔΔ14ΔΔ	
		4700	6800		16.0	5.0	10.0(7.5)	0.65	EKΔ3DΔΔΔ16ΔΔ	 D ≥ 10.0
		5600	10000		18.0	5.0	10.0(7.5)	0.65	EKΔ3DΔΔΔ18ΔΔ	
	6800, 8200, 10000	10000		20.0	5.0	10.0(7.5)	0.65	EKΔ3DΔΔΔ20ΔΔ		
3.15KV DC			1000		7.0	6.0	7.5(10.0)	0.65	EKΔ3FΔΔΔ07ΔΔ	 6.3 ≤ D ≤ 9.0
		100, 120, 150, 180, 220, 270, 330, 390, 470, 560			8.0	6.0	7.5	0.65	EKΔ3FΔΔΔ08ΔΔ	
		680	1500		9.0	6.0	7.5(10.0)	0.65	EKΔ3FΔΔΔ09ΔΔ	
		820, 1000	2200	4700	10.0	6.0	7.5(10.0)	0.65	EKΔ3FΔΔΔ10ΔΔ	
				6800	11.0	6.0	7.5(10.0)	0.65	EKΔ3FΔΔΔ11ΔΔ	
		1200, 1500	3300		12.5	6.0	7.5(10.0)	0.65	EKΔ3FΔΔΔ12ΔΔ	
		1800, 2200	4700	10000	14.0	6.0	7.5(10.0)	0.65	EKΔ3FΔΔΔ14ΔΔ	
		2700			16.0	6.0	7.5(10.0)	0.65	EKΔ3FΔΔΔ16ΔΔ	 D ≥ 10.0
	3300			18.0	6.0	7.5(10.0)	0.65	EKΔ3FΔΔΔ18ΔΔ		
6.3KV DC		100, 120, 150, 180, 220, 330, 470	1000	1000	8.0	7.0	10.0	0.65	EKΔ3JΔΔΔ08ΔΔ	 6.3 ≤ D ≤ 9.0
			1500		9.0	7.0	10.0	0.65	EKΔ3JΔΔΔ09ΔΔ	
		1000	2200	2200, 4700	12.5	7.0	10.0	0.65	EKΔ3JΔΔΔ12ΔΔ	
			3300		14.0	7.0	10.0	0.65	EKΔ3JΔΔΔ14ΔΔ	
			3900		15.5	7.0	10.0	0.65	EKΔ3JΔΔΔ15ΔΔ	 D ≥ 10.0
		4700		20.0	7.0	10.0	0.65	EKΔ3JΔΔΔ20ΔΔ		
10KV DC		100, 120, 150, 180, 220			8.0	8.0	10.0	0.65	EKΔ4AΔΔΔ08ΔΔ	
		270		1000	10.0	8.0	10.0	0.65	EKΔ4AΔΔΔ10ΔΔ	
		330, 390, 470	1000	2200	12.5	8.0	10.0	0.65	EKΔ4AΔΔΔ12ΔΔ	
		560, 680, 820, 1000	2200	4700	16.0	8.0	10.0	0.65	EKΔ4AΔΔΔ16ΔΔ	

## DISC CERAMIC CAPACITORS

# CLASS III Semi-Conductor Capacitor

### SPECIFICATION

Temp. Range : -25~+85°C (Y class)  
 Capacitance : Measured at 1KHZ, 0.1 Vrms and 25°C ± 2°C

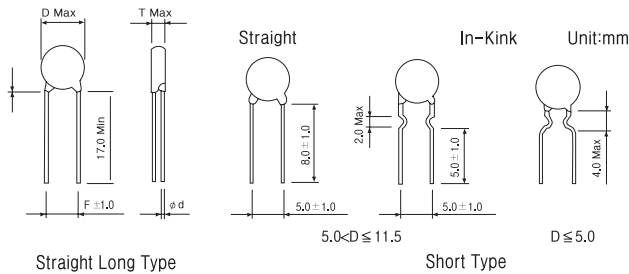
Testing Voltage :

Rating Voltage	25V DC	50V DC
Testing Voltage	R.V × 1.5	R.V × 1.5

Insulation Resistance :

T.C	Y5P	Y5R	Y5V
I.R.(MΩ)	5MΩ · μF MIN	1000MΩ · or 20MΩ · μF Whichever less	5MΩ · μF MIN

### LEAD VARIATION

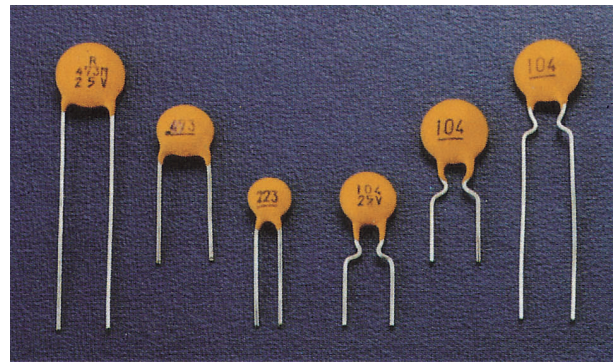


Dissipation Factor (tanδ)

T.C	Y5P	Y5R	Y5V
R.V	25V, 50V	25V	25V, 50V
Tanδ	5.0%MAX	1.5%MAX	5.0%MAX

Temperature Characteristics

T.C	Y5P	Y5R	Y5V
Change Rate	± 10%	± 15%	+22% -82%



### CAPACITANCE VALUE ACCORDING TO TYPE (pF)

T.C R.V	CAPACITANCE (pF)			DIMENSIONS (mm)				PART NO. (How to order)	MARKING
	Y5P (B)	Y5U (E)	Y5V (F)	D	T	F	φ d		
25V DC	10000	2200, 2700, 3300 3900, 4700, 6800	10000	4.0	3.0	5.0 (2.5)	0.5	CG*1E****04**	
		10000, 15000	22000	5.0	3.0	5.0 (2.5)	0.5	CG*1E****05**	
	22000	22000, 27000, 33000	47000, 56000 100000	6.3	3.0	5.0	0.5	CG*1E****06**	
	47000	47000		8.0	3.0	5.0	0.5	CG*1E****08**	
		56000, 68000	220000	10.0	3.0	5.0	0.5	CG*1E****10**	
50V DC			10000	4.0	3.0	5.0 (2.5)	0.5	CG*1H****04**	
	10000		22000, 33000	5.0	3.0	5.0 (2.5)	0.5	CG*1H****05**	
			47000, 56000	6.3	3.0	5.0	0.5	CG*1H****06**	
	22000		68000, 100000	8.0	3.0	5.0	0.5	CG*1H****08**	

# DISC CERAMIC CAPACITORS

## Low Loss Ceramic Capacitor (SL & R Series)

### SPECIFICATION

Temp. Range : -25~+85℃

Capacitance : Measured at 1KHz, 0.1 Vrms  
and 20℃ ± 2℃

Testing Voltage : R.V × 2

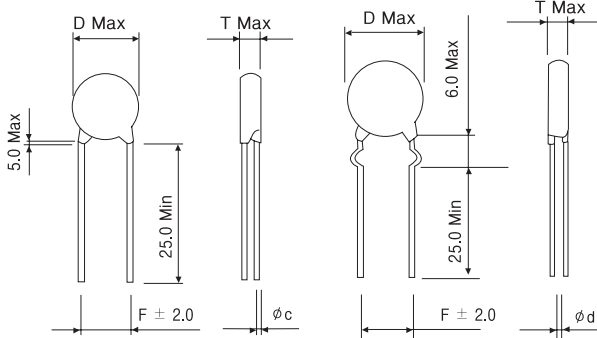
Insulation Resistance : 10,000MΩMIN  
at 500V DC for 1minute

Temperature Characteristics & Dissipation Factor

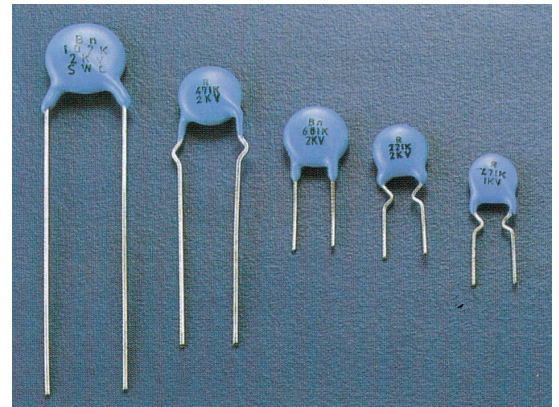
T.C	SL	R(Y5R)
Change Rate	-1000~350PPM	± 15%
D.F	30pF and over : 1000 MIN less then 30pF : 400+(20×C)MIN	0.2% MAX

Straight Type (Unit : mm)

Forming Type



Epoxy - Coated



R.V	CAPACITANCE (pF)		DIMENSIONS (mm)				PART NO. (How to order)	MARKING
	SL	R(Y5R)	D	T	F	φ d		
1KV DC	10, 11, 12, 15, 18, 20, 22, 24, 27, 30, 33, 39, 43, 47, 51	220, 270, 330, 390	6.3	5.0	5.0	0.55	EK△3A△△△△06△△	 6.3 ≤ D ≤ 9.0  D ≥ 10.0
		470	7.0	5.0	5.0	0.55	EK△3A△△△△07△△	
	56, 62, 68, 75, 82, 91, 100	560, 680	8.0	5.0	5.0	0.55	EK△3A△△△△08△△	
		820, 1000	9.0	5.0	5.0(7.5)	0.55(0.65)	EK△3A△△△△09△△	
	110, 120, 150	1200	10.0	5.0	5.0(7.5)	0.55(0.65)	EK△3A△△△△10△△	
		1500	11.0	5.0	5.0(7.5)	0.55(0.65)	EK△3A△△△△11△△	
	180, 200, 220, 240, 270		12.5	5.0	5.0(7.5)	0.55(0.65)	EK△3A△△△△12△△	
	300, 330, 360	1800, 2200, 2700	14.0	5.0	10.0	0.65	EK△3A△△△△14△△	
		3300	15.0	5.0	10.0	0.65	EK△3A△△△△15△△	
	390, 430, 470, 510		16.0	5.0	10.0	0.65	EK△3A△△△△16△△	
	3900	17.0	5.0	10.0	0.65	EK△3A△△△△17△△		
	4700	18.0	5.0	10.0	0.65	EK△3A△△△△18△△		
2KV DC	18, 20, 22, 24, 27, 30, 33, 36, 39, 43, 47	120	6.3	5.0	5.0	0.55	EK△3D△△△△06△△	 6.3 ≤ D ≤ 9.0  D ≥ 10.0
		220, 270	7.0	5.0	5.0	0.55	EK△3D△△△△06△△	
	51, 56, 62, 68, 75, 82, 91, 100	330, 390	8.0	5.0	10.0	0.65	EK△3D△△△△07△△	
		470, 560, 680	10.0	5.0	10.0	0.65	EK△3D△△△△08△△	
		820, 1000	11.0	5.0	10.0	0.65	EK△3D△△△△11△△	
	120, 150, 180, 200		12.5	5.0	10.0	0.65	EK△3D△△△△12△△	
	220, 240	1200, 1500	14.0	5.0	10.0	0.65	EK△3D△△△△14△△	
		1800, 2200	15.0	5.0	10.0	0.65	EK△3D△△△△15△△	
	270, 300, 330, 360		16.0	5.0	10.0	0.65	EK△3D△△△△16△△	
		2700	17.0	5.0	10.0	0.65	EK△3D△△△△17△△	
	3300	18.0	5.0	10.0	0.65	EK△3D△△△△18△△		
3.15KV DC	15, 16, 18, 20, 22, 27, 30		6.3	6.0	5.0	0.55	EK△3F△△△△06△△	 6.3 ≤ D ≤ 9.0  D ≥ 10.0
		150, 180, 220, 270	7.0	6.0	5.0	0.55	EK△3F△△△△07△△	
	33, 36, 39, 43, 47, 51, 56	330, 390	8.0	6.0	5.0	0.55	EK△3F△△△△08△△	
		470, 560, 680	10.0	6.0	10.0	0.65	EK△3F△△△△10△△	
	91, 100, 110, 120, 150	820, 1000	12.5	6.0	10.0	0.65	EK△3F△△△△12△△	
	180, 200	1200, 1500	14.0	6.0	10.0	0.65	EK△3F△△△△14△△	
	220, 240	1800	16.0	6.0	10.0	0.65	EK△3F△△△△16△△	
	270, 300, 330, 360	2200, 2700	18.0	6.0	10.0	0.65	EK△3F△△△△18△△	
6.3KV DC	22, 24, 27, 30, 33, 36		8.0	7.0	10.0	0.65	EK△3J△△△△08△△	 6.3 ≤ D ≤ 9.0  D ≥ 10.0
	43, 47	220, 270, 330	10.0	7.0	10.0	0.65	EK△3J△△△△10△△	
	51, 56, 62, 68, 75	390, 470	12.5	7.0	10.0	0.65	EK△3J△△△△12△△	
	120	560, 680	16.0	7.0	10.0	0.65	EK△3J△△△△16△△	

# Safety Standard Recognized Ceramic Capacitor

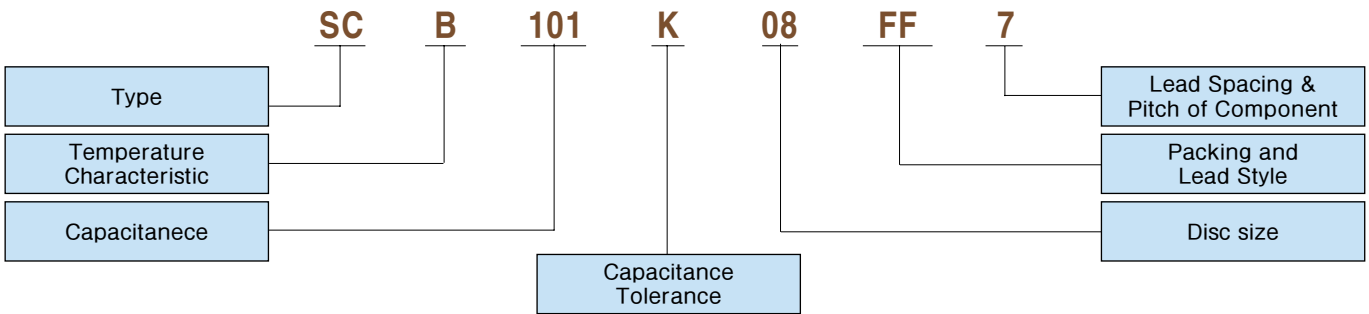
## SC Type : Rating Voltage AC 250V,X1 and Y2 Testing Voltage AC 2500V

UL 1414	File No. E97754
BS 415	File No. 7828
VDE IEC60384-14	File No. 40001516
EK K60384-14	File No. SU03004-2002
CSA C22.2 NO 1-98	File No. 214524
SEMKO IEC60384-14	File No. 95 19 185 02
NEMKO IEC60384-14	File No. P95 104248
FIMKO IEC60384-14	File No. 187875
DEMKO IEC60384-14	File No. 304995

## SD Type : Rating Voltage AC 250/400V,X1 and Y1 Testing Voltage AC 4000V

UL 1414	File No. E97754
BS 415	File No. 7828
VDE IEC60384-14	File No. 40001516
EK SU03004-2001	File No. SU03004-2002
CSA C22.2 NO 1-98	File No. 214524
SEMKO IEC60384-14	File No. 95 19 185 02
NEMKO IEC60384-14	File No. P95 104248
FIMKO IEC60384-14	File No. 187875
DEMKO IEC60384-14	File No. 304995

## TYPE DESIGNATION



## SPECIFICATION

Type	Temp char.	Capacitance (pF)	Size				D ≤ 9.0		D ≥ 10.0
			D	T	F	φ d	Front	Rear	
SC	B	100, 150, 220, 330, 390	8.0	6.0	7.5 (10.0)	0.65	SC 101K SWC 250~		
		470, 560	10.0						
		680, 820	10.0						
		1000	10.0						
	E	1000	7.0						
		1500	9.0						
		1800, 2200	10.0						
	Fz	3300, 3900	12.0						
		4700	14.0						
		4700	14.0						
SD	B	100, 150, 220, 390, 470	8.0	7.0	10.0	SD 101K SWC 250~			
		1000	8.0						
	E	1500	9.0						
		2200	12.0						
		3300, 3900	14.0						
		4700	15.0						

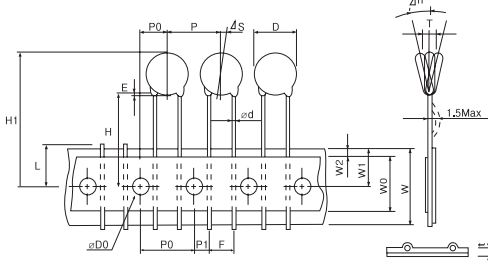


# Taping Type Disc Ceramic Capacitor

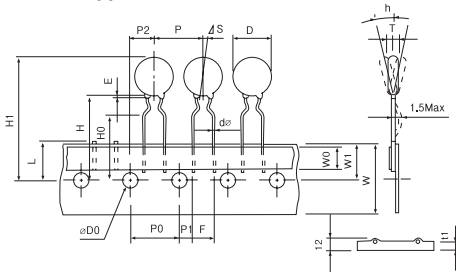
## DESIGN

Unit:mm

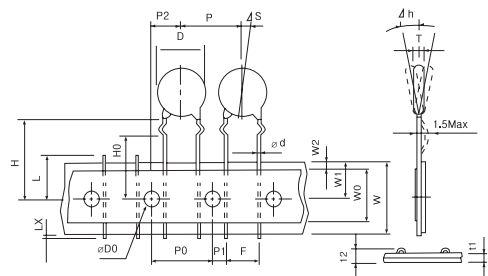
① FS5 Type



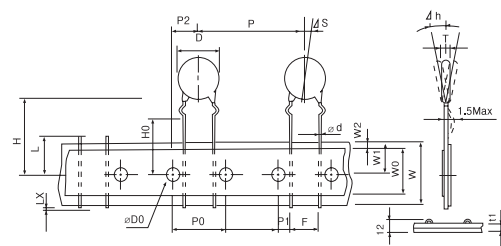
② FK5 Type



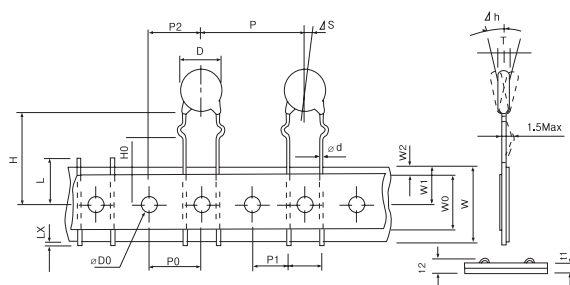
③ FF7 Type



④ FF8 Type



⑤ FF1 Type



ITEM	CODE	TAPING SPECIFICATION	
		FS5 or FK5	FF1
Body Diameter	D	12.5MAX	6.3 ≤ D ≤ 20.0
Body Thickness	T	6.0MAX	7.0MAX
Lead Diameter	dφ	0.50 ± 0.05	0.65 ± 0.05
Pitch of sprocket Hole	P <sub>0</sub>	12.7 ± 0.3	12.7 ± 0.3
Pitch of Component	P	12.7 ± 1.0	25.4 ± 1.0
Lead Length from Hole Center Lead	P <sub>1</sub>	3.85 ± 0.7	7.7 ± 1.0
Lead Length from Hole Center to Component Center	P <sub>2</sub>	6.35 ± 1.3	12.7 ± 1.5
Lead Spacing	F	5.0 <sup>+0.8</sup> <sub>-0.2</sub>	10.0 ± 1.0
Deviation Along Tape, Left or Right	△S	0 ± 1.0	0 ± 1.0
Deviation Across Tape	△h	0 ± 2.0	0 ± 2.0
Carrier Tape Width	W	18.0 <sup>+1.0</sup> <sub>-0.5</sub>	18.0 <sup>+1.0</sup> <sub>-0.5</sub>
Hold Down Tape Width	W <sub>0</sub>	5.0Min	9.0Min
Position of Sprocket Hole	W <sub>1</sub>	9.0 ± 0.5	9.0 ± 0.5
Hole Down Tape Position	W <sub>2</sub>	3.0Max	3.0Max
Height of Component From Hole Center	H	18.0 <sup>+1.0</sup> <sub>-0.5</sub>   20.0 <sup>+1.0</sup> <sub>-0.5</sub>	20.0 <sup>+1.5</sup> <sub>-1.0</sub>
Lead-Wire Clinch Height	H <sub>0</sub>	16.0 ± 0.5	16.0 ± 0.5
Component Height	H <sub>1</sub>	32.25Max	
Length of Snipped Lead	L	11.0Max	11.0Max
Diameter of sprocket Hole	φD <sub>0</sub>	4.0 ± 0.2	4.0 ± 0.2
Total Tape Thickness	t <sub>1</sub>	0.7 ± 0.2	0.7 ± 0.2
Total Thickness, Tape and LeadWire	t <sub>2</sub>	15Max	1.7Max
Lead Wire Protrtsion	Lx	1.0Max	1.0Max

ITEM	CODE	TAPING SPECIFICATION	
		FF7	FF8
Body Diameter	D	6.3 ≤ D ≤ 14.0	15.0 ≤ D ≤ 20.0
Body Thickness	T	6.0Max	
Lead Diameter	dφ	0.65 ± 0.05	
Pitch of sprocket Hole	P <sub>0</sub>	15.0 ± 0.3	
Pitch of Component	P	15.0 ± 1.0	30.0 ± 1.0
Lead Length from Hole Center to Lead	P <sub>1</sub>	3.75 ± 1.0	
Lead Length from Hole Center to Component Center	P <sub>2</sub>	7.5 ± 1.5	
Lead Spacing	F	7.5 ± 1.0	
Deviation Along Tape	△S	0 ± 1.0	
Deviation Across Tape	△h	0 ± 2.0	
Carrier Tape Width	W	18.0 <sup>+1.0</sup> <sub>-0.5</sub>	
Hold Down Tape Width	W <sub>0</sub>	5.0Min	
Position of Sprocket Hole	W <sub>1</sub>	9.0 ± 0.5	
Hole Down Tape Position	W <sub>2</sub>	3.0Max	
Lead-Wire Clinch Height	H <sub>0</sub>	16.0 ± 0.5	
Height of Component Hole	H	20.0 <sup>+1.5</sup> <sub>-1.0</sub>	
Diameter of sprocket Hole	φD <sub>0</sub>	4.0 ± 0.2	
Length of Snipped Lead	L	11.0Max	
Total Tape Thickness	t	0.7 ± 0.2	
Lead Wire Protrtsion	Lx	1.0Max	