

## TS15- Ceramic disk capacitor

### Class I- Temperature compensation

Linear temperature coefficient of capacitance  
High stability of capacitance.  
Low loss at wide range of frequency.



### Specification

OPERATING TEMPERATURE RANGE	-25°C TO +85°C
RATED WORKING VOLTAGE	DC 50V, 500V
TEST VOLTAGE	3 times of the rated voltage
CAPACITANCE	Within the tolerance at 1 MHz, 1±0.2 Vrms. 25 °C
Q FACTOR	At 1 MHz. 1±0.2 Vrms. 25 °C C≥30pF .....Q≥1,000 C<30pF .....Q≥400+20□ (C: Rated capacitance)
INSULATION RESISTANCE	10,000 MΩmin.

Rated Volt. (VDC)	Temp. Char.	Capacitance		Dimensions (mm)		
		Range (pF)	Tolerance	D Ø max	T max	F
50	CH 0±60 PPM/□ (NPO)	0.5 ~ 47	±0.25pF & ±0.5pF (Under 10pF) ±5% & ±10% (Over 10pF)	5.5	3.5	5.0
		0.5 ~ 47		6.5		
		82 ~ 100		7.5		
		120 ~ 150		8.5		
		180 ~ 270		10.5		
		300 ~ 390		12.5		
50	SL +350 ~ -1000PPM/□	10 ~ 120	±5% & ±10%	5.5	3.5	5.0
		150 ~ 240		6.5		
		270 ~ 330		7.5		
		360 ~ 470		8.5		
		500 ~ 820		10.5		

### Class II- High dielectric constant

Large capacitance in small size  
Non linear liner temperature coefficient of capacitance.

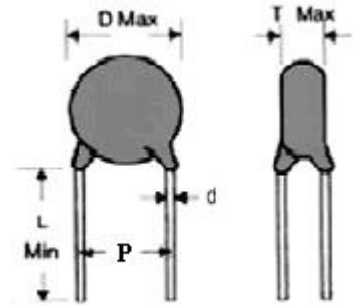
### Specification

RATED WORKING VOLTAGE	DC 50V, 500V
TEST VOLTAGE	2.5 times of the rated voltage
CAPACITANCE	Within the tolerance at 1 MHz, 1±0.2 Vrms. 25°C

## TS16M – High voltage ceramic disc capacitors

Use for coupling and by pass circuit there are a stable and high reliability products.

CAP	TOL
≤5pF	A±0.1pF B±0.5pF
≥5F<10pF	C±0.25pF D±0.5pF
≥10F	J±5% K±10% M±20% Z+80-20%

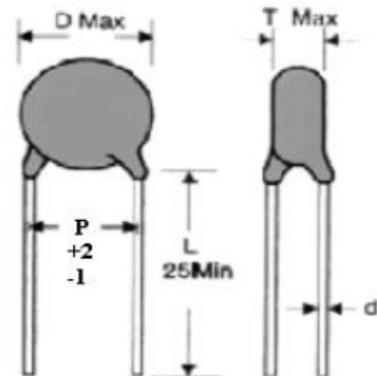


RATED W. V	TEMP.CHARACTERISTICS & CAPACITANCE RANGE				DIMENSION			
	SL	Y5P(B)	Y5U(E)	Y5V(F)	D	P	T	d
4KV				102	07	7.5~10	5	0.6   0.8
		221~471	102	222	09			
		561~681	222	472	11			
		102	332~472	103	14			
6.3KV		221~471		102	08	7.5~10	6	0.6   0.8
		561~681	102	222	10			
		102	222	472	13			
		152~222	332~472	103	16			
		332~472	103		21			
8KV		221~471	102	102	10	7.5~10	7	0.6   0.8
		681~102	222	222	13			
		152~222	472	472	16			
				103	22			
10KV		101~221		102	09	10~12	8	0.8
		471~561		152	10			
		681~102	102	222	13			
		152	332	472	16			
		222	682		19			
		332		103	22			
15KV		101~221		102	09	10~12	9	0.8
		471~561	102	222	13			

		102	222	472	16			
<b>20KV</b>	10~30	201~271		102	10	10	8	0.6
		331~511	102	222	14	10	8	0.8
		102	222	332	18	12.5	9	0.8
			472	103	24	12.5	9	0.8
<b>30KV</b>		102	472	103	26	15	12	1.5
<b>40KV</b>		102	332		30	15	20	1.5
<b>50KV</b>		102	472		36	15	22	1.5

## TS16L – High voltage ceramic capacitors- Low D.F.

Use for coupling, and by pass circuit there are a stable and high reliability products.  
 High voltage DC supplies or discharge (Lasers, X-ray apparatus, etc.).  
 High frequency AC circuits.  
 Noise suppressor or horizontal output circuits.



### Specification

TEMP. CHARAC	Y5P (B)	Y5T
D. F. MAXIMUM	0.5%	0.1%
Working Voltage	1KV- 15KV	

T. C.	Y5P(B)	Y5T	DIMENSION			
			D	P	T	d
1KV	101~561	101~561	06	5	4	0.6
	102	102	07	5		
	202		10	7.5		
	332		14	10		
	472		16	10		
2KV	101~331	101~331	06	5	4	0.6
	391	471	07	5		
	561	681	08	5		
	102	102	10	7.5		
	152	152	12	7.5		
	222	222	14	10		
	302	302	16	10		
3KV		101~221	06	7.5	5	0.6
	221~331	331	07	7.5		
	471~561	471	08	7.5		
	681~821	821	10	7.5		
	102	102	12	7.5		

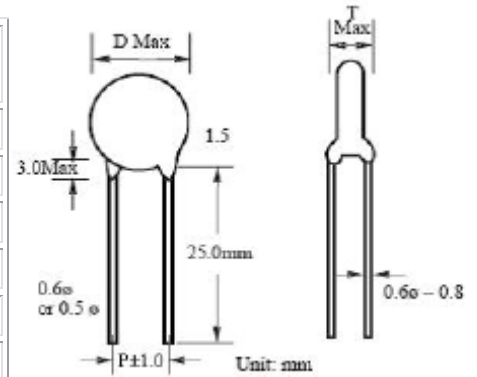
	152	152	14	10		
	222	202	16	10		
<b>6.3KV</b>		221	07	7.5	6	0.8
	221~331	331	08	7.5		
	471	471	10	7.5		
	102	102	13	10		
	152	152	16	10		
<b>8KV</b>		151	07	10	6	0.8
	221	221	08			
	391	391	10			
	681	681	13			
	102~122	122	16			
<b>10KV</b>		121	07	10	7	0.8
	101~221	181	09			
	331~471	331	11			
	561~681	561	14			
	102	102	17			
<b>15KV</b>		820	08	10	7	0.8
	101~221	151	10			
	331~471	331	13			
	561	561	16			

## TS16 – High voltage ceramic capacitors

Use for coupling, and by pass circuit there are a stable and high reliability products.S

### Specification

OPERATING CONDITION RANGE	-10°C to +85°C (Z5U, Z5V) -25°C to +85°C (Y5P)
RATED WORKING VOLTAGE	1 KV – 50KVDC
CAPACITANCE RANGE	100pF – 10,000pF
TEST VOLTAGE	2 times of the rated voltage.
DISSIPATION FACTOR (tan δ)	at 1 KHz, 1±0.2 Vrms. 25°C
Y5P, Z5U .....	tan δ≤2.5%
Z5V .....	tan δ≤5%
INSULATION RESISTANCE	10,000 MΩ or 200 MΩ whichever is the smaller



RATED W. V	SL	Y5P(B)	Y5U(E)	Y5V(F)	DIMENSION			
					D	P	T	d
1KV	680	501	102	332	06	5	4	0.6
	101	102	222	472	07	5		0.6
	151	152		682	08	5		0.6
	221	272	562	123	10	10		0.6
			103		13	10		0.6
2KV	680	471	102		06	5	5	0.6
	101		222		07	5		0.6
	121	102	332		08	5		0.6
	181		472	822	10	10		0.6
			103	153	13	10		0.6
3KV		561			07	5	5	0.6
			222		08	7.5		0.6
		122	332		10	7.5		0.6
		222	562	822	13	7.5		0.6
		332			16	10		0.8
		472			19	10		0.8
4KV		471	102		07	10	5	0.6
	680	561	152	272	08	10		0.6
		102	272		10	10		0.6
		152			13	10		0.8
		222			16	10		0.8
6.3KV	390	391	102		08	10	7	0.8
			202		10	10		0.8
			302		12	10		0.8

			402		14	10		0.8
<b>10KV</b>		201			10	10	7	0.6
		391	102	152	12	10	8	0.8
		681	152	222	14	10		0.8
		102	222		17	10		0.8
<b>15KV</b>		221			08	10	9	0.8
		471	122		12	10		0.8
		681			14	10		0.8
		102	272		17	10		0.8
<b>20KV</b>	10~30	201~271			10	10	8	0.6
		331~511			14	10	8	0.8
		102			18	12.5	9	0.8
			472	103	24	12.5	9	0.8
<b>30KV</b>		102	472	103	30	15	12	1.5
<b>40KV</b>		102			30	15	20	1.5
<b>50KV</b>		10			36	15	22	1.5



## TS17- Multilayer mono ceramic capacitors

Wide application in computer, data processor, telecommunication

Industrial control, and instrumentation equipments, etc.

Built by superior moisture and shock resistant epoxy coating, can be supplied

In both bulk or tape and reel package for automatic insertion in printed circuit board

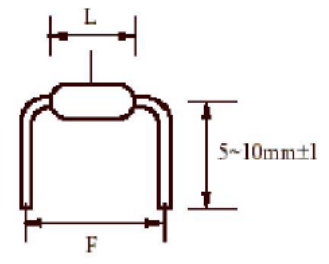
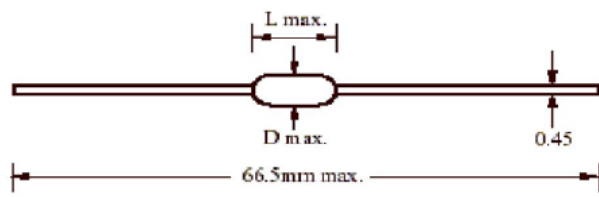
### TS17R - RADIAL

Size	Dimensions (mm)				Voltage	Capacitance		
Code	F (±0.5)	L max	H max	T max		COG (NPO)	X7R	Y5V (Z5U)
0805	2.54	4.2	3.8	3.8	25V	0.5pF ~ 0.0033μF	2200pF ~ 1μF	0.01μF ~ 1μF 0.01μF ~ 0.68μF
					50V	0.5pF ~ 0.0022μF	2200pF ~ 1μF	
					100V	0.5pF ~ 0.001μF	2200pF ~ 0.068μF	
1206	2.54	5.0	4.5	3.8	25V	0.5pF ~ 0.0068μF	1,000pF ~ 1μF	0.01μF ~ 1.2Mf 0.01μF ~ 1μF
					50V	0.5pF ~ 0.0047μF	1,000pF ~ 1μF	
					100V	0.5pF ~ 0.0039μF	1,000pF ~ 0.68μF	
1209	5.08	7.6	5.5	3.8	25V	560pF ~ 0.01μF	1,000pF ~ 0.33μF	0.1μF ~ 1.5μF 0.1μF ~ 1.5μF
					50V	560pF ~ 0.0068μF	1,000pF ~ 1μF	
					100V	560pF ~ 0.047μF	1,000pF ~ 0.1μF	
1812	4.75	8.5	8.5	3.8	25V	1,000pF ~ 0.015μF	0.01μF ~ 0.47μF	0.15μF ~ 3.3μF 0.15μF ~ 3.2μF
					50V	1,000pF ~ 0.01μF	0.01μF ~ 0.33μF	
					100V	1,000pF ~ 0.0068μF	0.01μF ~ 0.22μF	
2225	5.50	10.5	9.5	4.2	25V	1,000pF ~ 0.022μF	0.01μF ~ 1μF	0.68μF ~ 4.7μF 0.68μF ~ 3.3μF
					50V	1,000pF ~ 0.022μF	0.01μF ~ 1μF	
					100V	1,000pF ~ 0.022μF	0.01μF ~ 0.47μF	
3035	7.50	12.5	10.5	4.2	25V	1,000pF ~ 0.1μF	0.01μF ~ 2.2μF	1μF ~ 10μF 1μF ~ 6.8μF
					50V	1,000pF ~ 0.047μF	0.01μF ~ 2.2μF	
					100V	1,000pF ~ 0.033μF	0.01μF ~ 1μF	

### AXIAL

Size	Dimensions (mm)					Voltage	Capacitance		
Code	Lmax	Dmax	F±1	d±0.05	COG(NPO)		X7R	Y5V(Z5U)	
15	3.8	2.5	5.08	10.00	0.45	25V	0.5pF ~ 1,000pF	100pF ~ 33,000pF	2,200pF ~ 0.22μF 2,200pF ~ 0.15μF
						50V	0.5pF ~ 820pF	100pF ~ 22,000pF	
						100V	0.5pF ~ 560pF	100pF ~ 4,700pF	
17	4.3	2.5	5.08	10.00	0.45	25V	0.5pF ~ 3,300pF	330pF ~ 0.1μF	0.01μF ~ 1μF 0.01μF ~ 0.68μF
						50V	0.5pF ~ 2,200pF	330pF ~ 0.047μF	
						100V	0.5pF ~ 1,000pF	330pF ~ 0.022μF	
20	5.1	3.0	7.50	10.00	0.45	25V	0.5pF ~ 4,700pF	1,000pF ~ 0.22μF	0.01μF ~ 1.2μF 0.01μF ~ 1μF
						50V	0.5pF ~ 3,900pF	1,000pF ~ 0.1μF	
						100V	0.5pF ~ 1,500pF	1,000pF ~ 0.068μF	





DISSIPATION FACTOR (tan $\delta$ )	Y5P, Z5U : tan $\delta \leq 2.5\%$ Z5V : tan $\delta \leq 5\%$
INSULATION RESISTANCE	10,000M $\Omega$ or 200M $\Omega$ $\mu$ F, whichever is the smaller

Rated Volt. (VDC)	Temp. Char.	Capacitance		Dimensions (mm)		
		Range (pF)	Tolerance	D $\varnothing$ max	T max	F
50	B $\pm 10\%$	100 ~ 2000	$\pm 10\%$ & $\pm 20\%$	5.5	3.5	5.0
		2200 . 2700		6.5		
		3000 . 3300		7.5		
		3900 . 4700		8.5		
		5600 . 6800 10000		10.5		
50	E +22 ~ - 56% (Z5U)	2200 . 3300 4700 . 5000	$\pm 20\%$ & +80-20%	5.5	3.5	5.0
		5600 . 6800 8200		6.5		
		10000		7.5		
		12000 . 15000		8.5		
		18000 . 20000 22000		10.5		
50	F +22 ~ - 82% (Z5V)	4700 . 5000	+80-20%	5.5	3.5	5.0
		10000 . 15000		6.5		
		18000 . 20000		7.5		
		22000 . 30000		8.5		
		33000 . 40000		10.5		