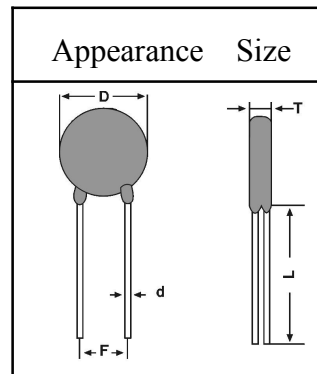


SPECIFICATION FOR APPROVAL

**High Voltage Ceramic Disc Capacitor**

**Appearance Size and Structure**


Item	Specification			L (mm)	D Max(mm)	T Max(mm)	F (mm)	d (mm)
	Volt.	Cap.	Material					
1	1KV	10K	NPO	19Min	6.5	3	5.0±0.5	0.5±0.05
2		15-33K	N750	19Min	7.5	3.5	5.0±0.5	0.5±0.05
3		47K	SL	19Min	6.5	3	5.0±0.5	0.45±0.05
4		56-68K	SL	19Min	6.5	3	5.0±0.5	0.45±0.05
5		101K	SL	19Min	7	2.5	5.0±0.5	0.45±0.05
6		151-331K	Y5P	25Min	7	3.5	5.0±0.5	0.5±0.05
7		471K	Y5P	25Min	6.5	3.5	5.0±0.5	0.5±0.05
8		681K	Y5P	25Min	6.5	3.5	5.0±0.5	0.5±0.05
9		821-102K	Y5P	25Min	7	3.5	5.0±0.5	0.5±0.05
10		122K	Y5P	25Min	7.5	3.5	5.0±0.5	0.5±0.05
11		152K	Y5P	25Min	8.5	3.5	5.0±0.5	0.5±0.05
12		222K	Y5P	25Min	9.5	3.5	5.0±0.5	0.5±0.05
13		152M	Y5V	25Min	6.5	3.5	5.0±0.5	0.5±0.05
14		222M	Y5V	25Min	6.5	3.5	5.0±0.5	0.5±0.05
15		272M	Y5V	25Min	6.5	3.5	5.0±0.5	0.5±0.05
16		332M	Y5V	25Min	6.5	3.5	5.0±0.5	0.5±0.05
17		472M	Y5V	25Min	8	3.5	5.0±0.5	0.5±0.05
18		682-103M	Y5V	25Min	9.5	3.5	5.0±0.5	0.5±0.05

Item	Specification			L (mm)	D Max(mm)	T Max(mm)	F (mm)	d (mm)
	Volt.	Cap.	Material					
19	2KV	10P K	Y5P	25Min	6.5	3.5	5.0±0.5	0.5±0.05
20		15-33P K	Y5P	25Min	6.5	3.5	5.0±0.5	0.5±0.05
21		47-56K	SL	25Min	6.5	3.5	5.0±0.5	0.5±0.05
22		68K	SL	25Min	7.5	3.5	5.0±0.5	0.5±0.05

23	101K	DL	25Min	7	4	5.0±0.5	0.6±0.05
24	331K	Y5P	25Min	7	4	5.0±0.5	0.6±0.05
25	471K	Y5P	25Min	7	4	5.0±0.5	0.6±0.05
26	681K	Y5P	25Min	8	4	5.0±0.5	0.6±0.05
27	821-102K	Y5P	25Min	8.5	4	5.0±0.5	0.6±0.05
28	122K	Y5P	25Min	10	4	7.5±0.5	0.6±0.05
29	152K	Y5P	25Min	10	4	7.5±0.5	0.6±0.05
30	222K	Y5P	25Min	12	4.5	7.5±0.5	0.6±0.05
31	122M	Y5V	25Min	8	4	5.0±0.5	0.6±0.05
32	152M	Y5V	25Min	8	4	5.0±0.5	0.6±0.05
33	222M	Y5V	25Min	8	4	5.0±0.5	0.6±0.05
34	272M	Y5V	25Min	8	4	5.0±0.5	0.6±0.05
35	332M	Y5V	25Min	8	4	5.0±0.5	0.6±0.05
36	472M	Y5V	25Min	9	4	5.0±0.5	0.6±0.05
37	272M	Y5V	25Min	8	4	7.5±0.5	0.6±0.05
38	332M	Y5V	25Min	8	4	7.5±0.5	0.6±0.05
39	472M	Y5V	25Min	9	4	7.5±0.5	0.6±0.05
40	682M	Y5V	25Min	10	4	7.5±0.5	0.6±0.05
41	103M	Y5V	25Min	11.5	4.5	7.5±0.5	0.6±0.05

Item	Sepcification			L	D	T	F	d (mm)
	Volt.	Cap.	Material	(mm)	Max(mm)	Max(mm)	(mm)	
42	3KV	10-15P K	Y5P	25Min	7	4	7.5±0.5	0.6±0.05
43		22-39K	SL	25Min	7	4	7.5±0.5	0.6±0.05
44		47K	SL	25Min	7	4	7.5±0.5	0.6±0.05
45		68-82K	YL	25Min	8	4	7.5±0.5	0.6±0.05
46		101K	DL	25Min	7	4	7.5±0.5	0.6±0.05
47		151-331K	Y5P	25Min	8	4.5	7.5±0.5	0.6±0.05
48		471K	Y5P	25Min	9	4.5	7.5±0.5	0.6±0.05
49		681K	Y5P	25Min	10	4.5	7.5±0.5	0.6±0.05
50		102K	Y5P	25Min	11	5	7.5±0.5	0.6±0.05
51		122M	Y5U	25Min	10	4.5	7.5±0.5	0.6±0.05
52		152M	Y5U	25Min	10	4.5	7.5±0.5	0.6±0.05
53		222M	Y5U	25Min	10	4.5	7.5±0.5	0.6±0.05
54		272M	Y5U	25Min	10	4.5	7.5±0.5	0.6±0.05
55		332M	Y5U	25Min	13	5.5	7.5±0.5	0.6±0.05
56		472M	Y5U	25Min	13	5.5	7.5±0.5	0.6±0.05

57		821-102M	Y5V	25Min	8	4.5	7.5±0.5	0.6±0.05
58		152M	Y5V	25Min	9	4.5	7.5±0.5	0.6±0.05
59		222M	Y5V	25Min	9	4.5	7.5±0.5	0.6±0.05
60		272M	Y5V	25Min	10	4.5	7.5±0.5	0.6±0.05
61		332M	Y5V	25Min	10	4.5	7.5±0.5	0.6±0.05
62		472M	Y5V	25Min	11	4.5	7.5±0.5	0.6±0.05
63		682M	Y5V	25Min	12	5	7.5±0.5	0.6±0.05
64		103M	Y5V	25Min	15	5.5	7.5±0.5	0.6±0.05

Item	Sepcification			L	D	T	F	d (mm)
	Volt.	Cap.	Material	(mm)	Max(mm)	Max(mm)	(mm)	
65	4KV	101K	Y5P	25Min	8	4	7.5±0.5	0.6±0.05
66		221K	Y5P	25Min	8	4	7.5±0.5	0.6±0.05
67		331K	Y5P	25Min	9	4.5	7.5±0.5	0.6±0.05
68		471K	Y5P	25Min	10	5	7.5±0.5	0.6±0.05
69		681K	Y5P	25Min	11	5	7.5±0.5	0.6±0.05
70		102K	Y5P	25Min	13	5.5	7.5±0.5	0.6±0.05
71		471K	Y5U	25Min	8	4	7.5±0.5	0.6±0.05
72		681M	Y5U	25Min	9	4.5	7.5±0.5	0.6±0.05
73		102M	Y5U	25Min	9	4.5	7.5±0.5	0.6±0.05
74		152M	Y5U	25Min	10	4.5	7.5±0.5	0.6±0.05
75		222M	Y5U	25Min	12	5	7.5±0.5	0.6±0.05
76		102M	Y5V	25Min	8	4	7.5±0.5	0.6±0.05
77		152M	Y5V	25Min	9	4.5	7.5±0.5	0.6±0.05
78		222M	Y5V	25Min	9.5	5	7.5±0.5	0.6±0.05
79		332M	Y5V	25Min	11	5	7.5±0.5	0.6±0.05
80		472M	Y5V	25Min	13	5.5	7.5±0.5	0.6±0.05
81		682M	Y5V	25Min	13	5.5	7.5±0.5	0.6±0.05
82		103M	Y5V	25Min	15	5.5	10.0±0.5	0.6±0.05

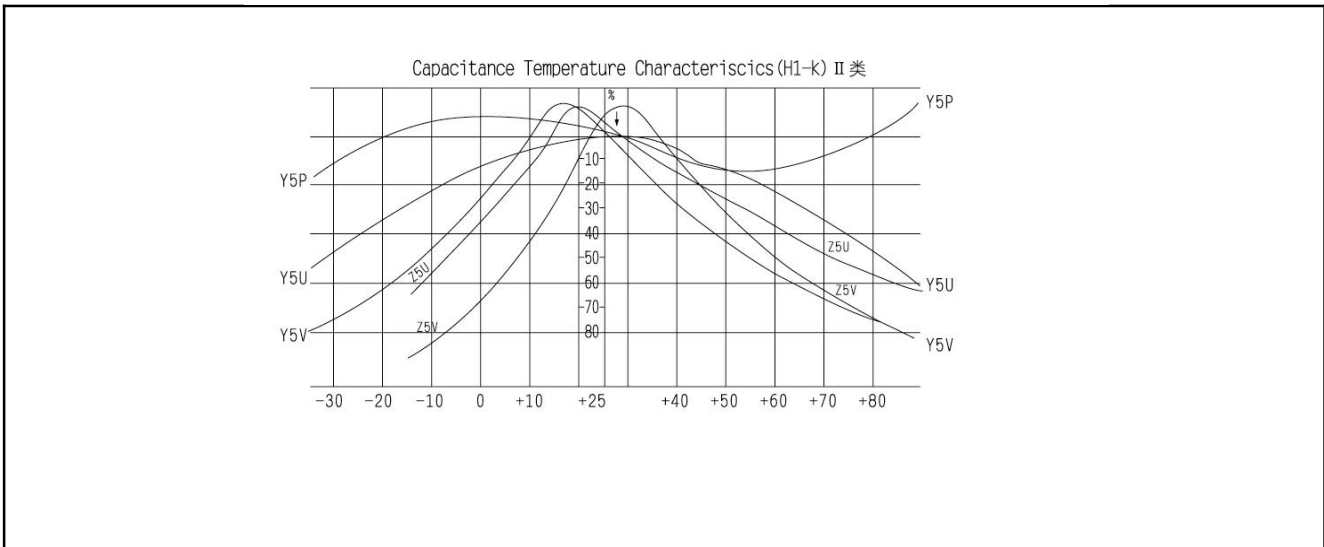
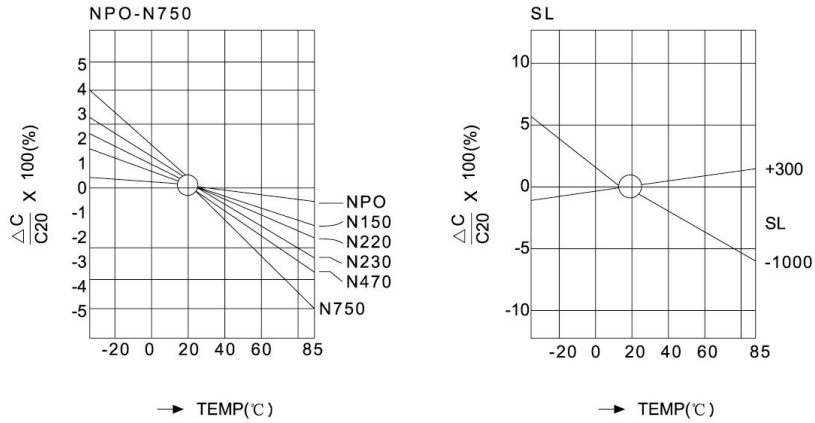
Item	Sepcification			L	D	T	F	d (mm)
	Volt.	Cap.	Material	(mm)	Max(mm)	Max(mm)	(mm)	
83	5KV	101K	Y5P	25Min	8	4	10.0±0.5	0.6±0.05
84		221K	Y5P	25Min	8	4	10.0±0.5	0.6±0.05
85		331K	Y5P	25Min	9	4.5	10.0±0.5	0.6±0.05
86		471K	Y5P	25Min	10	4.5	10.0±0.5	0.6±0.05
87		102K	Y5P	25Min	13	5.5	10.0±0.5	0.6±0.05

88		471K	Y5U	25Min	8	4	10.0±0.5	0.6±0.05
89		681M	Y5V	25Min	8	4	10.0±0.5	0.6±0.05
90		102M	Y5V	25Min	8	4	10.0±0.5	0.6±0.05
91		152M	Y5V	25Min	9	4.5	10.0±0.5	0.6±0.05
92		222M	Y5V	25Min	9.5	4.5	10.0±0.5	0.6±0.05
93		332M	Y5V	25Min	12	5	10.0±0.5	0.6±0.05
94		472M	Y5V	25Min	13	5.5	10.0±0.5	0.6±0.05

Item	Sepcification			L	D	T	F	d (mm)
	Volt.	Cap.	Material	(mm)	Max(mm)	Max(mm)	(mm)	
95	6KV	101K	Y5P	25Min	8	4	10.0±0.5	0.6±0.05
96		221K	Y5P	25Min	8	4	10.0±0.5	0.6±0.05
97		331K	Y5P	25Min	9	4.5	10.0±0.5	0.6±0.05
98		471K	Y5P	25Min	10	4.5	10.0±0.5	0.6±0.05
99		102K	Y5P	25Min	13	5.5	10.0±0.5	0.6±0.05
100		471K	Y5U	25Min	8	4	10.0±0.5	0.6±0.05
101		681M	Y5V	25Min	8	4	10.0±0.5	0.6±0.05
102		102M	Y5V	25Min	8	4	10.0±0.5	0.6±0.05
103		152M	Y5V	25Min	9	4.5	10.0±0.5	0.6±0.05
104		222M	Y5V	25Min	9.5	4.5	10.0±0.5	0.6±0.05
105		332M	Y5V	25Min	12	5	10.0±0.5	0.6±0.05
106		472M	Y5V	25Min	13	5.5	10.0±0.5	0.6±0.05

### Capacitance and Temperature Curve

Material	Temperature Range	Capacitance Range
NPO	-25°C ~ +85°C	0 ± 60 PPM/°C
SL	-25°C ~ +85°C	+300 ~ -1000 PPM/°C
Y5P	-25°C ~ +85°C	+10% ~ -10%
Y5U	-25°C ~ +85°C	+22% ~ -56%
Y5V	-25°C ~ +85°C	+22% ~ -82%



According to: Specification

- GB/T 2693      《Fixed capacitors for use in electronic equipment  
Part1: Generic specification》
- GB/T 5966      《Fixed capacitors for use in electronic equipment  
Part8: Sectional specification  
Fixed capacitors of ceramic dielectric, Class I 》
- GB/T 5968      《Fixed capacitors for use in electronic equipment  
Part8: Sectional specification  
Fixed capacitors of ceramic dielectric, Class II 》
- GB 11305      《Fixed capacitors for use in electronic equipment  
Sectional specification  
Fixed capacitors of ceramic dielectric, Class III》
- GB/T 14472      《Fixed capacitors for use in electronic equipment  
Part14: Sectional specification  
Fixed capacitors for electromagnetic interference suppression and  
connection to the supply mains》
- GB2828      《Sampling procedures and tables for lot-by-lot inspection by attributes》
- GB2829      《Sampling procedures and tables for periodic inspection by attributes》

**Quality Assurance(OQC)and Test**

Check item (lot)	Check level	
	IL	AQL
1. Appearance 2. Size	S--4	2.5
1. Capacitance 2. DF 3. Voltage proof 4. Insulation resistance	II	0.25
1. Solder ability of leads	S--3	2.5

**Specification and Testing Method**

Item	Specification	Testing Method												
1.Operating Temperature Range	-25~+85℃													
2.Capacitance	K: ±10% M: ±20% Z: +80%/-20%	Temperature: 25±2℃ Voltage: 1.0±0.2Vrms Frequency: 1.0±0.2KHz												
3.DF	Y5P: 2.5%max Y5U: 2.5%max Y5V: 5.0%max	Temperature: 25±2℃ Voltage: 1.0±0.2Vrms Frequency: 1.0±0.2KHz												
4.Insulation Resistance (IR)	5000MΩmin	Apply voltage: U=500V Apply current: I≤0.05A Test time: 1min												
5.Dielectric Strength	No failure	Rated voltage: $U_R > 500V$ , Test voltage $U = 1.5U_R$ Apply current: $I \leq 0.05A$ , Test time: 1min												
6.Temperature Characteristic	Y5P: +10%~-10% Y5U: +22%~-56% Y5V: +22%--82% NPO: 0±60PPM/℃ SL: +30-1000PPM/℃	The capacitance measurement shall be made at each step: Before Test : Set the capacitor for 1hour at 85±2℃,after 24±2 hour at room temperature,then can be measured. <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Step</th> <th>Temperature</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>20±2℃</td> </tr> <tr> <td>2</td> <td>-25±3℃</td> </tr> <tr> <td>3</td> <td>20±2℃</td> </tr> <tr> <td>4</td> <td>85±2℃</td> </tr> <tr> <td>5</td> <td>20±2℃</td> </tr> </tbody> </table>	Step	Temperature	1	20±2℃	2	-25±3℃	3	20±2℃	4	85±2℃	5	20±2℃
Step	Temperature													
1	20±2℃													
2	-25±3℃													
3	20±2℃													
4	85±2℃													
5	20±2℃													



Item		Specification	Testing Method
7.Vibration resistance	Appearance	No marked defect	The capacitor shall firmly be soldered to the supporting terminal and vibration which is 10HZ to 55HZ in the vibration frequency range 1.5mm in total amplitude and about 1min.in the rate of vibration change from 10HZ to 55HZ and back to 10HZ is applied for a total of 6 hours, 2hours each in there mutually perpendicular direction.
	Capacitance	Y5P: $\Delta C/C \leq 10\%$ Y5U: $\Delta C/C \leq 20\%$ Y5V: $\Delta C/C \leq 30\%$	
	DF	Y5P: 5.0%max Y5U: 5.0%max Y5V: 5.0%max	
8. Soldering effect	Appearance	No marked defect	The lead wire shall be immersed into the melted solder of $260 \pm 5^{\circ}\text{C}$ up to about 1.5to 2.0mm from the main body for $3.5 \pm 0.5\text{sec}$ . Pre-treatment: capacitor shall be stored 1hour at $85 \pm 2^{\circ}\text{C}$ after at normal temperature for $24 \pm 2$ hour before initial measurements. Post-treatment : capacitor shall be measured after $24 \pm 2$ hours at normal temperature.
	Capacitance change	Y5P: $\Delta C/C \leq 10\%$ Y5U: $\Delta C/C \leq 20\%$ Y5V: $\Delta C/C \leq 30\%$	
	Dielectric strength (between lead wires)	No failure	
9.Humidity (under steady state)	Appearance	No marked defect	Set the capacitor for 500 hours at $40 \pm 2^{\circ}\text{C}$ in 90 to 95%RH Pre-treatment: capacitor shall be stored 1hour at $85 \pm 2^{\circ}\text{C}$ after at normal temperature for $24 \pm 2$ hour before initial measurements. Post-treatment: capacitor shall be measured after $24 \pm 2$ hours at normal temperature.
	Capacitance change	Y5P: $\Delta C/C \leq 10\%$ Y5U: $\Delta C/C \leq 20\%$ Y5V: $\Delta C/C \leq 30\%$	
	DF	Y5P: 5.0%max Y5U: 5.0%max Y5V: 7.5%max	
	Insulation Resistance (IR)	500M $\Omega$ min	

Item		Specification	Testing Method
10. Humidity loading	Appearance	No marked defect	Apply rated voltage for 500 hours at 40±2°C in 90 to 95%RH Pre-treatment: capacitor shall be stored 1hour at 85±2°C after at normal temperature for24±2 hour before initial measurements. Post-treatment: capacitor shall be measured after 24±2 hours at normal temperature.
	Capacitance change	Y5P: $\Delta C/C \leq 10\%$ Y5U: $\Delta C/C \leq 20\%$ Y5V: $\Delta C/C \leq 30\%$	
	DF	Y5P: 5.0%max Y5U: 5.0%max Y5V: 7.5%max	
	Insulation Resistance (IR)	1000MΩmin	
11. Life Test	Appearance	No marked defect	Apply 150% of the rated voltage for 1000 hours at 85±2°C Pre-treatment: capacitor shall be stored 1hour at 85±2°C after at normal temperature for24±2 hour before initial measurements. Post-treatment: capacitor shall be measured after 24±2 hours at normal temperature.
	Capacitance change	Y5P: $\Delta C/C \leq 10\%$ Y5U: $\Delta C/C \leq 20\%$ Y5V: $\Delta C/C \leq 30\%$	
	DF	Y5P: 5.0%max Y5U: 5.0%max Y5V: 7.5%max	
	Insulation Resistance (IR)	1000MΩmin	
12. Strength of lead	Dielectric strength	Lead wire shall not cut off, Capacitor shall not be broken.	As a figure fix the body of capacitor, apply a tensile weight gradually to each lead in the radial direction of capacitor upto 10N and keep it for 10±15 sec.
	Bending		Each lead wire shall be subjected to 5N weight and then ±45° bend twice.
	Turn back strength		Each lead wire shall be turn back twice at 180°.
13. Solderability of leads	Lead wire shall be soldered with coated over 95% of the circumferential direction.	The lead wire of a capacitor shall be dipped into flax and then into molten solder of 235±5°C for 2±0.5sec.	