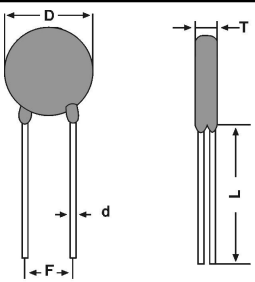


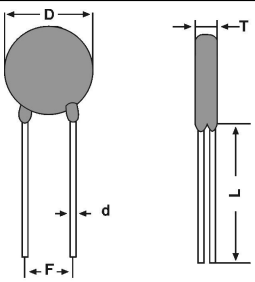
## SPECIFICATION FOR APPROVAL

### **Low Voltage Ceramic Disc Capacitor**

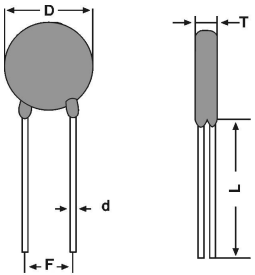
Dimensions and Tolerance

PN.	L		T	F	d	Drawing
	Min (mm)	Max (mm)				
100V-NPO-4.7D	19	5.5	3.0	5±0.5	0.5±0.05	
100V-NPO-6.8D	19	5.5	3.0	5±0.5	0.5±0.05	
100V-NPO-8.2D	19	5.5	3.0	5±0.5	0.5±0.05	
100V-NPO-10K	19	5.5	3.0	5±0.5	0.5±0.05	
100V-NPO-15K	19	5.5	3.0	5±0.5	0.5±0.05	
100V-NPO-22K	19	5.5	3.0	5±0.5	0.5±0.05	
100V-NPO-27K	19	5.5	3.0	5±0.5	0.5±0.05	
100V-NPO-33K	19	5.5	3.0	5±0.5	0.5±0.05	
100V-NPO-39K	19	5.5	3.0	5±0.5	0.5±0.05	
100V-NPO-47K	19	5.5	3.0	5±0.5	0.5±0.05	
100V-SL-82K	19	5.5	3.0	5±0.5	0.5±0.05	
500V-NPO-8.2D	19	5.5	3.0	5±0.5	0.5±0.05	
500V-NPO-10K	19	5.5	3.0	5±0.5	0.5±0.05	
500V-NPO-12K	19	5.5	3.0	5±0.5	0.5±0.05	
500V-NPO-15K	19	5.5	3.0	5±0.5	0.5±0.05	
500V-NPO-18K	19	5.5	3.0	5±0.5	0.5±0.05	
500V-SL-22K	19	5.5	3.0	5±0.5	0.5±0.05	
500V-SL-33K	19	5.5	3.0	5±0.5	0.5±0.05	
500V-SL-39K	19	5.5	3.0	5±0.5	0.5±0.05	
500V-SL-47K	19	5.5	3.0	5±0.5	0.5±0.05	
500V-SL-56K	19	5.5	3.0	5±0.5	0.5±0.05	
500V-SL-68K	19	5.5	3.0	5±0.5	0.5±0.05	
500V-SL-82K	19	5.5	3.0	5±0.5	0.5±0.05	
500V-SL-101K	19	5.5	3.0	5±0.5	0.5±0.05	

Dimensions and Tolerance

PN.	L Min (mm)	D Max (mm)	T Max (mm)	F (mm)	d (mm)	Drawing
100V-Y5P-101K	19	5.5	3.0	5±0.5	0.5±0.05	
100V-Y5P-121K	19	5.5	3.0	5±0.5	0.5±0.05	
100V-Y5P-221K	19	5.5	3.0	5±0.5	0.5±0.05	
100V-Y5P-331K	19	5.5	3.0	5±0.5	0.5±0.05	
100V-Y5P-471K	19	5.5	3.0	5±0.5	0.5±0.05	
100V-Y5P-681K	19	5.5	3.0	5±0.5	0.5±0.05	
100V-Y5P-821K	19	5.5	3.0	5±0.5	0.5±0.05	
100V-Y5P-102M	19	5.5	3.0	5±0.5	0.5±0.05	
100V-Y5P-152M	19	5.5	3.0	5±0.5	0.5±0.05	
100V-Y5P-222M	19	6.0	3.5	5±0.5	0.5±0.05	
100V-Y5V-472M	19	5.5	3.0	5±0.5	0.5±0.05	
100V-Y5V-103Z	19	5.5	3.0	5±0.5	0.5±0.05	
500V-Y5P-121K	19	5.5	3.0	5±0.5	0.5±0.05	
500V-Y5P-151K	19	5.5	3.0	5±0.5	0.5±0.05	
500V-Y5P-181K	19	5.5	3.0	5±0.5	0.5±0.05	
500V-Y5P-221K	19	5.5	3.0	5±0.5	0.5±0.05	
500V-Y5P-271K	19	5.5	3.0	5±0.5	0.5±0.05	
500V-Y5P-331K	19	5.5	3.0	5±0.5	0.5±0.05	
500V-Y5P-471K	19	5.5	3.0	5±0.5	0.5±0.05	
500V-Y5P-561K	19	5.5	3.0	5±0.5	0.5±0.05	
500V-Y5P-681K	19	5.5	3.0	5±0.5	0.5±0.05	
500V-Y5P-102M	19	5.5	3.0	5±0.5	0.5±0.05	
500V-Y5U-152M	19	5.5	3.0	5±0.5	0.5±0.05	

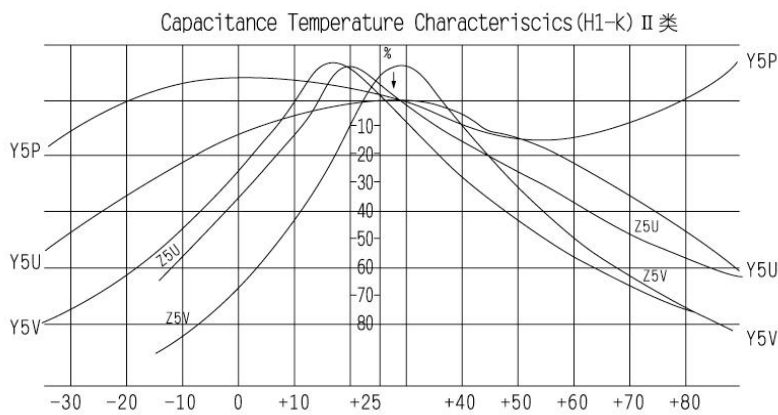
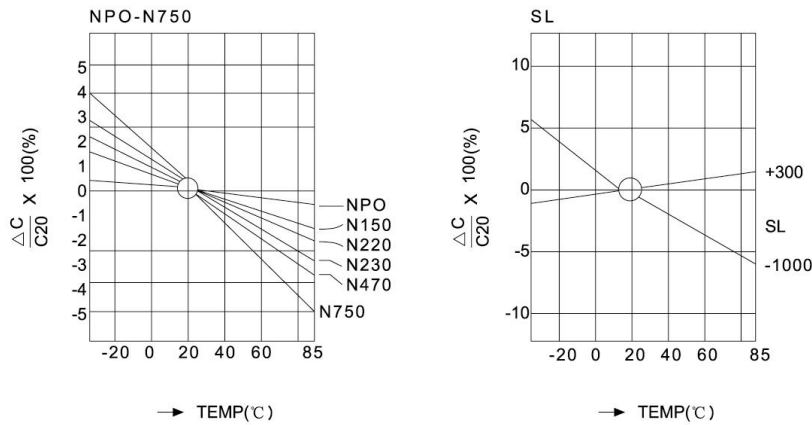
Dimensions and Tolerance

PN.	L Min (mm)	D Max (mm)	T Max (mm)	F (mm)	d (mm)	Drawing	
500V-Y5U-222M	19	5.5	3.0	5±0.5	0.5±0.05		
500V-Y5U-332M	19	5.5	3.0	5±0.5	0.5±0.05		
500V-Y5V-472M	25	7.0	3.5	5±0.5	0.5±0.05		
500V-Y5V-682M	25	7.0	3.5	5±0.5	0.5±0.05		
500V-Y5V-103Z	25	8.0	3.5	5±0.5	0.5±0.05		
500V-Y5V-103Z	25	8.0	3.5	7.5±0.5	0.5±0.05		
100V-Y5V-153Z	19	5.5	3.0	5±0.5	0.5±0.05		
100V-Y5V-223Z	19	5.5	3.0	5±0.5	0.5±0.05		
100V-Y5V-333Z	19	5.5	3.0	5±0.5	0.5±0.05		
100V-Y5V-473Z	19	5.5	3.0	5±0.5	0.5±0.05		
100V-Y5V-683Z	19	5.5	3.0	5±0.5	0.5±0.05		
100V-Y5V-104Z	19	6.5	3.5	5±0.5	0.5±0.05		

Temperature Feature:

Material	Temperature Range	Capacitance Drift
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%

### Capacitance Temperature Characteristics



### □ 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 for 24±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 for 24±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 flux and then into molten solder of 235±5°C for 2±0.5sec.