

Product Specification

Number: L-KLS10-HV16-2KV-Y5V-103Z-P7.5

Name: CERAMIC CAPACITORS

Specification: _____

Customer: _____

Date: 2024-02-01

Customer Signature:



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Compile	Check	Review	Approval
Jenny	Jack.C		

Spec. Name <div style="text-align: center; font-weight: bold; margin-top: 10px;">Ceramic disc capacitor approve</div>		Record number	
Description <div style="text-align: center; font-weight: bold; margin-top: 10px;">Guidelines for using ceramic disc capacitor</div>		Page: 1-7	

1. Applicable range:

The approval guidelines for using and safety item for the ceramic disc capacitor.

Take safety notice

If the capacitor using mistake in relevant rated and performance condition (using environment, circuit etc.) Will worsen it that will short or broken circuit, as smoke and fire as worst condition. Guide lines for using must strict confirm the safety condition as following.

2. Strict item as safety:

2.1 Using environment and circuit design.

2.1.1 Using environment and rated performance confirm

- Confirm stonrage and using environment ,It can not over the using environment .
It'll worson short or broken circuit, as smoke and fire the capacitor over performance.
- Using in human machine (aviation,space,medical machin etc) must confirm with us before using

2.1.2 Operating temperature range

- It can't over operating temperature range
 - ① Don't over the highest temperature by the approve.
 - ② Don't over the highest temperature including environment and self-heathy

2.1.3 Operating voltage

- Applied voltage between the capacitor terminals, In the DC circuit ,it using DC type capacitor.
Operating voltage don't over the 1/2 rated voltage of capacitor in the circuit. It must attention the max. electromotive force and pulse voltage that must less the 1/2 rated AC voltage.
- In communication or changes in ac/dc conversion circuit, ac voltage of capacitor should be used, and must consult manufacturers, confirmed rear can use. But in the general circuit, which USES voltage is less than (1). Please use our Y2, 500 vac capacitance, (2). 500 vac ~ 1 kvac. Please use our Y1 capacitance and should be considered under the condition of the surge in the outside world, using the maximum possible voltage, shall not exceed the rated ac voltage.
- In communication or changes in ac/dc conversion circuit, if use dc voltage of capacitor, in its general circuit, using voltage shall be the rated dc voltage for the 1/8, and should be considered under the condition of the surge in the outside world, using the maximum possible voltage shall not exceed the rated dc voltage 1/8. (1). Please use our Y2, 500 vac capacitance, (2). 500 vac ~ 1 kvac, please use our Y1 capacitance.
- Under fixed voltage, high frequency voltage, topped the pulse voltage loop when using continuous, consult please confirm.

2.1.4 The use of current

- Apply high frequency and pulse continuos that operating high current circuit must confirm with us before using.

2.1.5 heat-self confirm

- Operating AC or osillation circuit in machine test, the temperature rise under 20℃


2.1.6 Location Limitation

- Please don't use in the following places
 - ① Water or sart solvent
 - ② Dew
 - ③ Corrosive place
 - ④ High vibration place as over apprve

2.2 Operating environment and circuit design.

- If the capacitor using at plastic assembly ,Must research influence of the capacitor ,Some assembly will damage self-capacitor,As thermal expansion and cold shrink ,It have crevicas in the epoxy that will worse there humidity

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3. General item of safety

3.1 Real equipment, and welding conditions

3.1.1 design of P.C.B.

- Between the hold of PCB with lead of capacitor must have some apare .

3.1.2 Adjustment of assembly machine

- If it have excessive pound phenomenon when auto assembly, please adjust the assembly machine.
- Capacitor location and the surrounding space adjustment

Voltage	Distance and space between the PCB safety
<250VDC	$\geq 0.5\text{mm}$
500VDC~2KVDC 250VAC~1KVAC	$\geq 1.0\text{mm}$
3KVDC~6.3KVDC 2KVAC~4KVAC	$\geq 2.0\text{mm}$
$\geq 8\text{KVDC}$	$\geq 2.5\text{mm}$

Voltage	At least to maintain the space in other parts of the capacitance between a safe distance to avoid
<250VDC	$\geq 0.5\text{mm}$
500VDC~2KVDC 250VAC~	$\geq 2\text{mm}$
3KVDC~6.3KVDC 2KVAC~4KVAC	$\geq 4\sim 6\text{mm}$
$\geq 8\text{KVDC}$	$\geq 7\text{mm}$
>20KVDC	$\geq 8\text{mm}$

3.1.3 Soldering

- Soldering fluidness: In this flow of the halogen need : $\leq 0.1\text{WT}\%$ (0.1WT% are rated of transform C1)
- Solder: It can't immerge capacitor body in the solder process at approve.
- Washing: It must use lotion wash. If the capacitor wash with P.C.B. must comfirm the solvent can't influence the capacitor body.

3.2 Storage

- The capacitor must storage in door , That can't storage in high humidity and high temperature environment. The temperature must at $5\sim 40^{\circ}\text{C}$ and the humidity under 75%. They are wallamted for a period of one year . From the date of mannfacture, But the storage perior must confirm lead will not oxidize.
- It must avoid direct by sun shine and soaked by dew

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Standard title :	Ceramic disc capacitor approve	Record NO.
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1 . Applicable range :

The specification applicable at ceramic disc capacitor (500VDC-15KVDC)

2 . Recommend standard :

●GB9597-88

3 . Operating temperature range :

-25°C ~ 125°C Include capacitor-self heat maximum 20°C, it can't application temperature characteristic.

4 . Performance :

Performance and test method refer to table1.

5 . Experiment condition :

The standard experiment condition as (temperature15~35°C,humidity45`75%,atmospheric pressure 86~106kpa).If it can't limited any condition But doubt place or special place,Must using standard condition, as (temperature20±5°C, humidity 60 ~ 70%, atmospheric pressure 86 ~ 106kPa)



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NO	Item	Characteristics	Test Method
1	Appearance,size and mark	Normal	Size measured by vernier. Appearance and marks by visual inspection
2	Mark and resistance to solvent	The mark reference appendix specification, resistance to solvent test, mark must clear	Appearance marks by visual inspection. Resistance to solvent test: Put the capacitor in the 20-25°C cleanser immerge 5+/-0.5mins
3	Voltage proof	Between terminals	Test Voltage: W.V.=500V-2KV T.V=200%×W.V. W.V.=3KV-6KV T.V=150%×W.V. W.V.=8KV-15KV T.V=150%×W.V. Time of Voltage: 1 ~ 5seconds Charge and discharge current 50mA max
		Between terminal and case	Test Voltage: 1300V.DC Time of Voltage: between 1 ~ 5seconds Charge and discharge current 50mA max Voltage is applied: small metal ball method
4	Insulation resistance	T.C. 10000MΩ MIN HIK 5000MΩ MIN semiconductor(S.C.)100MΩ MIN	Test voltage: Rated voltage≤1KVDC: 100VDC , >1KVDC:500VDC; semiconductor(S.C.): 16VDC。 Test time: 1min+5s
5	Capacitance	Within the standard tolerance	Measure voltage T.C. HIK : 1.0Vrms semiconductor(S.C.) : 0.1Vrms Measure frequency: T.C. : ≤1000PF 1MHz >1000PF 1KHz HIK、 semiconductor (S.C.) : 1KHz Measure temperature : 25°C±2°C
6	Q and Dissipation factor (tan δ)	T.C. : 1.C<30PF : Q≥400+20×C 2.C≥30PF : Q≥1000 HIK : 1.Y5E、Y5P、Z5U、Y5U、X7R : DF≤2.5% 2. Z5V、Y5V : DF≤5% 3. BN、Y5T : DF≤0.5% 4.Y5R : DF≤0.2% semiconductor(S.C.): 1.Y5P、Y5U : DF≤5% 2.Y5V : DF≤7%	same condition as the capacitance

Rve	Edit	Date	Content	Responsible
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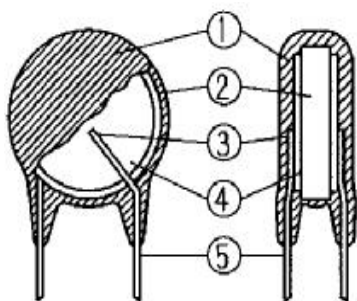


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6 . Construction . Shape . Dimension

Does not specifically limit conditions, according to state (temperature 15 ~ 35 °C, relative humidity of 45 ~ 75%, atmospheric pressure 86 ~ 106kPa).

Doubt occasions or special requirements of the occasion, according to state (temperature 20 ± 5 ° C, relative temperature 60 ~ 70%, atmospheric pressure 86 ~ 06kPa).

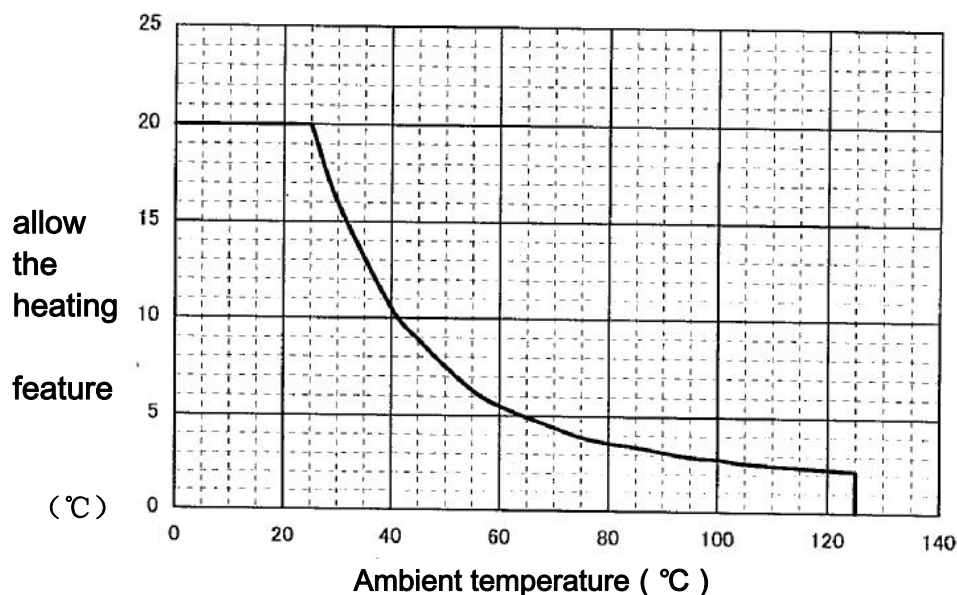


Material

NO.	Name	Material
1	Coating	Blue epoxy UL94.V-0
2	disc	Ceramic
3	Sloder	Tin of ROHS
4	Electrode	Silver
5	Loading	CP Lead

Shape and outline dimension refer to attachmen

7.Ambient temperature - allow the heating features



【Explain】 :

The capacitor operating at AC voltage self-heat temperature in room temperature(25°C)max are 20°C. Self-heat tempetature (to different capacitor surface and environment temperature). It have varied according variety of surface temprature. Environment temperature over 25°C, It'll referent up figure.

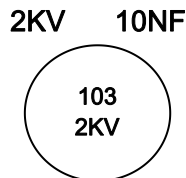
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8 . REPRESATATION :

- 1.Capacitance : under100pF, marking 2 number,over 100pF , marking 3 number
- 2.Voltage : 1kV/2kV/3kV real marking

For example :



9 . Packing Method :

- (1) Bulk ☒ 1000PCS per bag
- (2) Taped ☐ 1000PCS per bag

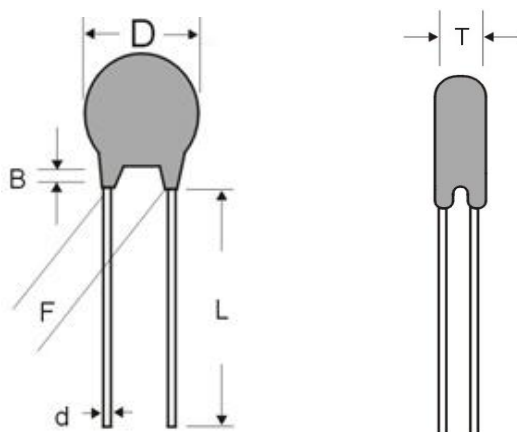
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10.Shape and Dimension



Outline dimension

Symbol	dimension(mm)	Remark
D	-	Refer to be below list
T	-	Refer to be below list
L	-	Refer to be below list
F	7.5±1.0	
B	3.0max	
d	0.5±0.1	

Code

Customer NO.	Type NO.	Capacitance		voltage (KV)	Dimension (mm)			
		Cap.(nF)	tolerance		D max	T max	F	L
	L-KLS10-HV16-2KV-Y5V-103Z-P7.5	10	-20%~+80%	2KV	9.5	3	7.5±1.0	27±5.0

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2024年2月1日

Customer NO 顧客料號				L-KLS10-HV16-2KV-Y5V-103Z-P7.5					Q'TY 數量	PCS
Part No 零件代號										
Operating Temperature (使用溫度範圍)					-25℃～+85℃		Cap change (容量變化率) 溫度範圍		-25℃～+85℃ ' +22%~-94%	
Name Code	C/C	CAP.	10NF (103)	TOL	-20%	Material	Y5V	W.V. 電壓 (DC)	2KV	
規 格		容量		誤差	+80%	材質				

1. Test condition 測試條件

Instrument (儀器)	Freq.頻率	Temp.溫度	R.H.濕度	非ROHS <input type="checkbox"/>
HP4278A	1KHz 1.0V	25℃ +/-2℃	65%	ROHS <input checked="" type="checkbox"/>

Appearance 外觀	Capacitance 靜電容量 (NF)	Insulation Resistance 絕緣電阻 (MΩ)	Body size 外徑 (mm) D	Coating on Lead 塗料長度 (mm) B	Lead Spacing 導線間格 (mm) F
103 2KV	8~18	≥5000	≤9.5	≤3	7.5±1.0
DF值	Lead Length 導線長度 (mm) L	Thickness 厚度 (mm) T	Wire diameter 線徑 (mm) d	Dielectric Strength 誘電體強度 V.DC	
≤5%	27±5.0	≤3.0	0.5±0.1	4.0KV.DC1-5S 充放電電流為50mA以下	

2.Actual record 實測記錄

NO	1	2	3	4	5	6	7	8	9	10
Capacitance 靜電容量(NF)										
DF值(%)										
Judgment 判定	AC <input checked="" type="checkbox"/> RE <input type="checkbox"/>									

3.Reference drawing 圖形參考

