Manufacturer : Anshan Keifat Electronic Ceramic Tec	chnical Co.,Ltd. No:
Approval Sheet for Pr	oduct Specification
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Customer:	
Product: Lead type 250VAC-Y1 cap	
PART No.:	
Mfr. P/N:	
Date: 年 月 日	
Manufacturer	Customer Confirm

Manuf	acturer	Customer	Confirm
Prepared by	薛志豪	合格 OK □ 不合格 NG □	
Checked by	于金龙	Checked by	
Approved by	范垂旭	Approved by	

Address: No. 177 Xingsheng Road Tiexi District Anshan, China

Tel.: 86-412-8234566 Fax: 86-412-8200366

E-mail: asaec111@126.com



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Lood type 250VAC-V1 con	Edition	Page
Lead type 250VAC-Y1 cap	Α	2

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Lead type 250VAC-Y1 cap	А	3

Revision History

Revision history				
Edition	Date	Contents of formulation $/$ modification $/$	Formulation	Approval
		repeal		
Α		New edition released	薛志豪	于金龙



	PART NO.	
Lood type 250VAC-V1 con	Edition	Page
Lead type 250VAC-Y1 cap	Α	4

■ Features

- Small size
- High performance
- High insulation resistance
- High breakdown strength
- Operating temperature range -40~+125 °C
- Fully symmetric full copper electrode
- Class X1/Y1 capacitors certified by UL/CQC/VDE/ENEC/KC.
- Coated with flame-retardant epoxy resin (conforming to UL94V–0 standard).
- AC250V & AC400V Rated Voltage item are available.

■ Application

- 1. Use as X/Y capacitors for AC line filter and primary-secondary coupling on switching power supplies and AC adapters.
- 2. Ideal applications are D-A insulation and noise reduction for transformerless DAA modems
- 3. Suitable for all kinds of filter, bypass and coupling circuit

■ Part Number Designation

CT7 -250VAC - Y1 - B - 101 K b 10 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

①Type

Code	Type Designation
CT7	Safety Standard Certified

3Class Code

Code	Class Code
Y1	Y1

⑤Capacitance

Code	Capacitance
22	22 pF
101	100 pF
102	1000 pF

②Rated Voltage

Code	Rated Vol. (AC)
250VAC	250V

4Temperature Characteristic

GB	EIA	Temp. range	Cap. Change
S	SL.	+25∼+85℃	+350∼−1000ppm/°C
В	Y5P	-25∼+85℃	±10%
Е	Y5U	-25~+85°C	−56%∼+22%
F	Y5V	-25 ∼+85℃	−82%∼+22%

6Tolerance

Code	Tolerance
J	$\pm5\%$
K	±10%
М	\pm 20%



	PART NO.	
Lood terms SEOVAC VI som	Edition	Page
Lead type 250VAC-Y1 cap	Α	5

7Lead Shape

Code	Shape
b	Straight
Υ	Vertical Kink

8 Lead Space

Code	Lead Space
10	10.0±1.0mm
12.5	12.5 \pm 1.0mm

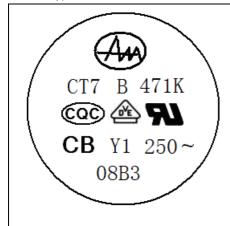
■ Appearance and Structure

CODE	CODE NO.	D_{max}	T _{max}	L	F	d	STYLE
		(mm)	(mm)	(mm)	(mm)	(mm)	
	CT7-250VAC-Y1-SL-020~101K b**	See s	specific	specificat	ion	0.6	b式
	CT7-250VAC-Y1-B-101~681K b10	See s	specific	specificat	ion	0.6	4.0 hox.
	CT7-250VAC-Y1-E-102~472M b10	See s	specific	specificat	ion	0.6	L min.
	CT7-250VAC-Y1-F-102~103M b10	See specific specification		0.6	Y 式		
							Dnax. Tmax.
							400 W
							F di±0.05



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Lead type 250VAC-Y1 cap	A	6

■ 标志

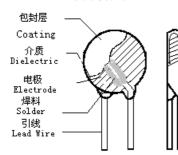


And	Manufacturer's Marking			
CT7	Type Designation			
В	Temperature Characteristic			
471	Nominal Capacitance			
K	Capacitance Tolerance			
@	CQC Approval Mark			
	VDE Approval Mark			
977	UL Approval Mark			
СВ	CB Mark			
Y1	Class code			
250~	Rated Voltage Mark			
08B3	Manufactured Date Code (0: Year, 8: Month, B:			
	date, 3: Sequence code)			

■ Safety Certification

No	Certificate authority	Certificate No	Rated voltage
1	CQC	08001024648	250VAC-Y1
2	CQC	08001024647	400VAC-X1
3	ENEC	40036847	400VAC-Y1/X1,250VAC-Y1/Y2/X1
4	VDE	40036847	400VAC-Y1/X1,250VAC-Y1/Y2/X1
5	UL	E232980	400VAC-Y1/X1,250VAC-Y1/Y2/X1
6	KC	HU03028-17002A	250VAC-Y1

■ Structure



Coating: Epoxy Resin
 Dielectric: Ceramic

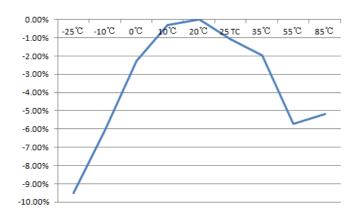
 $\ensuremath{\Im}$ Electrode : Copper or Silver

4 Solder : Alloy Tin
5 Lead wire : CP Lead

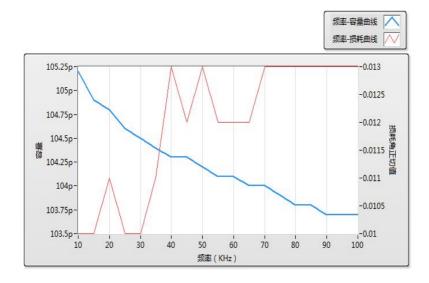


	PART NO.	
Lood type 250VAC-V1 con	Edition	Page
Lead type 250VAC-Y1 cap	A	7

■ Temperature Characteristic Curve



■ Cap. & D.F.—Fre. Curve





	Alls	nan .	Ken	at Electronic (Jeranne 1	T T	CU., 1	Liu.					
						PART N	О.						
Load type 250VAC-V1 can					Edition	n	Pa	age					
Lead type 250VAC-Y1 cap					Α			8					
	Specification	and Te	st Met	hod			1						
It	tem		Sı	pecifications		Test N	Method						
1 Operating	Temp. Range	−40°C	\sim +125 $^\circ$	°C									
2 Appearanc	e	No de	fects or	abnormalities	Visual inspecti	on							
3 Dimensions	s	Within	the spe	cified dimensions	Dimension be i	neasured by ca	aliper						
4 Marking		To be	easily le	egible	The capacitor	should be visua	ally inspect	ed.					
5 Capacita	nce	In spe	cified to	blerance	Temp. 20℃ ± 2	2°C,							
		Cł	har.	Specifications	Vol. AC 5Vrn	ıs Max.							
			SL	<0.15%	Freq. SL: 1±0	.1MHz ,B、E	. F:1±0.1	KHz,					
6 Dissipation	Factor(D.F.)/Q	В.	、 E	≤2.5%	The capacitan	ce, dissipation	factor shou	ıld be me	asured at				
			F	<u>≤3.5%</u>	20°C with 1±	0.1KHz (char.	SL: 1±0.1	MHz) an	d AC				
		-	l.		5Vrms Max.								
					The insulation resistance should be measured with DO		th DC						
7 Insulation	Resistance (I.R.)	10000MΩ min		500±50V within 60±5 sec. of charging.									
					The voltage should be applied to the capacitor through a								
	<u> </u>	N.		resistor of $1M\Omega$. Apply a voltage of Table 1 for 1min. between the lead			n the lead						
		No			Wires.(Charge/								
	Between Lead					Туре	Te	st Volta	ge				
	Wires	Wires	Wires	Wires	Wires				<table 1=""></table>	X1Y1		4000V(rn	
					X1Y2	AC	2500V(rn	ns)					
		No			First, the term	inals of the ca		V					
8 Dielectric					should be conr	_		Ø.					
Strength					as shown in fi foil should b			Meta	about				
Garongan					around the boo	around the body of the capacitor to							
					the distance of about 3 to 4mm form each terminal. Then, the capacitor				Metal Balls				
	Body Insulation				should be inse			I with me	tal balls of				
					about 1mm dia			_					
			ou sec. Bet		ou sec. Between	0 sec. Between the capacitor lead wires and metal ba							
				(T.11.0)	Type Test Voltage								
					<table 2=""></table>	X1Y1		000V(r.m					
			0.		The e	X1Y2	l .	500V(r.m					
			Char.	Capacitance Change	The capacitand	e snould be m	easured at	each ste	p as below				
0 -		SL		+350~-1000ppm/℃	table.								
9 Temperatu	re Characteristic			(+20°C~+85°C)	Step	1 2		4	5				
			B	±10%	Temp.(°C)	20±2 -25:	±2 20±2	85±2	20±2				
			E	_56%∼+22%									



	PART NO.	
Lood toma SEOVAC VI com	Edition	Page
Lead type 250VAC-Y1 cap	A	9

Appearance	No. m					
0	No marked defect In specified tolerance		The capacitor should be			
Capacitance			firmly soldered to the			
	Char.	Specifications	supporting lead wire and			
	SL	≤0.15%	vibrated at a frequency range			
Dissipation	B、E	≤2.5%	of 10 to 55Hz. 1.5mm in total			
Factor(D.F.)/Q	F	≤3.5%	amplitude. With about a 1 minute rate of vibration change			
			from 10Hz to 55Hz and back to 10Hz.Apply for a total of 6			
			hrs. 2hrs .each in 3 mutually perpendicular directions.			
			Fix the body of the capacitor and apply			
			a tensile weight gradually to each lead			
Tensile	Lead wire should not be cut off		wire in the radial direction of capacitor			
			up to 10N,and keep for 10±1sec.			
	•	should not be	Each lead wire should be subjected to 5N weight and then a			
	broken.		90° bend, at the point of egress in one direction return to			
Bending			original position, and then a 90 $^{\circ}$ bend in the opposite			
			direction at the rate of one bend in 2 to 3s for 2 times.			
		ould be soldered With	The lead wires of the capacitor should be dipped into			
	uniform coating on the axial		alcohol Solution of 25% wt rosin and then into molten solder			
of leads	direction o	ver 95% of the	of 245°C within 2.0sec.In both case the depth of dipping is			
	circumferential direction.		up to about 2.0 to 2.5mm from the root of the lead wires.			
Appearance	No m	arked defect	The lead wires should be immersed in solder of 260±10°C up to 1.5			
Capacitance			to 2.0mm from the roof of terminal			
In specified tolerance Change	citied tolerance	for 3+1/-0sec. Pre-treatment: The capacitor				
I.R.	10	00M Ω min	should be placed at 85±2°C for 1 Solder hour, then placed at room			
Dielectric			condition for 24±2 hours before initial measurement.			
	Per Item 8.		Post-treatment: Capacitor should be stored for 24±2 hours at room condition.			
	Factor(D.F.)/Q Tensile Bending f leads Appearance Capacitance Change	Dissipation Factor(D.F.)/Q Tensile Lead wire shown and capacitor broken. Bending Lead wire shown and capacitor broken. Bending Lead wire shown and capacitor broken. Bending Lead wire shown and capacitor broken. In speech capacitance Change I.R. Dielectric P.	Dissipation B、E ≤2.5% F ≤3.5% Tensile Lead wire should not be cut off and capacitor should not be broken. Bending Lead wire should be soldered With uniform coating on the axial direction over 95% of the circumferential direction. Appearance Capacitance Change I.R. No marked defect In specified tolerance In specified tolerance Per Item 8. No marked 8. Per Item 8. Dielectric Per Item 8. Per Item 8. Per Item 8.			



	PART NO.	
Lood type 250VAC-V1 con	Edition	Page
Lead type 250VAC-Y1 cap	A	10

					Α	10
Ite	m	Sı	pecifications		Test Method	
14. Humidity (under Steady State)	Appearance Capacitance Change Dissipation Factor(D.F.)/Q I.R. Dielectric	-	marked defect Capacitance Change ±5% or ±0.5pF (whichever is larger) ±10% ±20% Specifications <0.3% <5.0% <7.0%	Set the capacitor for 500+24/-0 hrs. at 40±2°C in 90 to 95% relative humidity. Pre-treatment: The capacitor should be placed at 85±2°C for 1 hour, then, placed at room condition for 24±2 hour before initial measurement. Post-treatment: Capacitor should be stored for 24± hours at room condition.		placed at 85±2°C on for 24±2 hours
	Strength					
15. Humidity	Appearance Capacitance Change	Char. SL B E\F	marked defect Capacitance Change ±5% or ±0.5pF (whichever is larger) ±10% ±20%	Apply the rated voltage for 500(+24/-0) hrs. at 90 to 95% relative humidity . (Charge/discharge ≤50mA)		scharge current
Cycling	Dissipation Factor(D.F.)/Q I.R. Dielectric	Char. SL B、E F 3000MΩ m Per Item 8.	Specifications ≤0.3% ≤5.0% ≤7.0%	Pre-treatment: The capacitor should be placed at 85± for 1 hour, then, placed at room condition for 24±2 househore initial measurement. Post-treatment: Capacitor should be stored for 24 hours at room condition.		
	Strength		marked defect			
16. Life Test	Appearance Capacitance Change	Char. SL B E\ F	Capacitance Change ±5% or ±0.5pF (whichever is larger) ±10% ±20%	Apply a voltage of 1.7U _R for 1000hrs. at 125°C (Charge/discharge current≤50mA) and relative hu 50% max.		
	Dissipation Factor(D.F.)/Q I.R. Dielectric Strength	Char. SL B、E F 3000MΩ m Per Item 8.	Specifications	for 1 hour, then, p	Capacitors should be	on for 24±2 hours



	PART NO.	
Load toma 250VAC VI con	Edition	Page
Lead type 250VAC-Y1 cap	Α	11

7.		0	, c	Took Makkad		1	
Item 17. Flame test		The capacit	cor flame discontinued Cycle Time(sec.) 1 2 30max. 3 60max.	Test Method The capacitor should be subjected to applied flame for 15 sec. And then removed for 15 sec. Until 3 cycles are completed.		电容器 火焰 喷烧器: 内径9.5	
	Appearance	No	marked defect	The cap	acitor sł	ould be subjected	to 5 temperature cycles,
	Capacitance	SL	Capacitance Change ±5% or ±1.0pF	then cor	nsecutiv	ely to 2 immersion < Temperature	-
	Change	B _v E _v F	(whichever is larger) ±20%		Step	Temperature($^{\circ}$ C)	Time(min)
				-	2	-40+0/-3 Room temp.	30
		Char.	Specifications	-	3	125+3/-0	30
	Dissipation	SL	≤0.3%	-	4	Room temp.	3
10 T	Factor(D.F.)/Q	B、E	≤5.0%	Cycle time:5 cycles		eles	
18 Temperature		F	≤7.0%	<pre></pre>			cle>
Cycle	I.R.	3000M Ω min		Step	Temp.		Immersion Water
Cycle				1	65+5		Clean water
				2	0±	3 15	Salt water
						Cycle time:2 cyc	eles
	5			Pre-trea	atment:		
	Dielectric Strength	Per Item 8.		Capacito	or should	d be stored at 85±	2° C for 1 hr., then,
	Surengui				placed at room condition for 24±2 hrs.		
				Post-tre	eatment		
				Capacito	or should	d be stored for 24±	±2 hrs. , at room
					n.		,

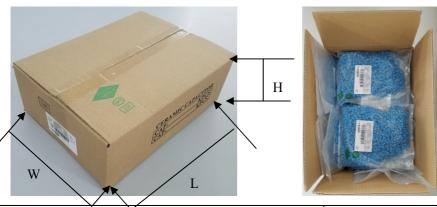


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Lead type 250VAC-Y1 cap	A	12

PackageBulkpacking bag



Inner package

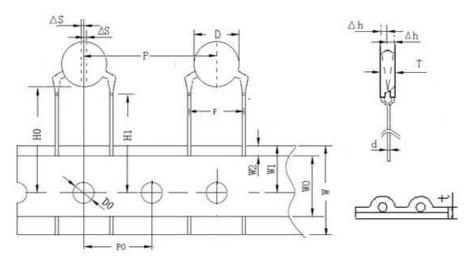


	Dimension: mm		MPQ (Kpcs)	Inner package quantity
L±10	W±5	H±5		(Kpcs)
330	240	120	1 (短脚)	
			0.5 (长脚)	



	PART NO.	
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Lead type 250VAC-Y1 cap	Α	13

Taping



符号	尺寸(mm)	符号	尺寸(mm)
P0	12.7 \pm 0.3	W2	3.0max.
P	25.4 ± 1.0	t1	0.6 ± 0.3
F	12.5 \pm 0.5	D	9.0max.
P1	7.7 \pm 0.5	DO	4 ± 0.2
НО	20.0 ± 1.0	d	0.6 ± 0.05
H1	16.5 \pm 1.0	T	6.0max.
W	18.0 ± 0.5	ΔS	0 ± 1.0
WO	10.0 \pm 1.0	∆h	±1.0max.
W1	9. 0 +0 -0.5		

Product Label



No.	Description	No.	Description	
1	Code Number	5	Remark	
2	ITEM	6	Check	
3	SPEC	7	Produce Date	
4	Quantity	8	Batch	



	PART NO.	
Lood type 250VAC VI cor	Edition	Page
Lead type 250VAC-Y1 cap	A	14

■ Caution (Rating)

1. Operating Voltage

When DC-rated capacitors are to be used in AC or ripple current circuits, be sure to maintain the V p-p value of the applied voltage or the Vo-p that contains DC bias within the rated voltage range.

When the voltage is applied to the circuit, starting or stopping may generate irregular voltage for a transit period because of resonance or switching. Be sure to use a capacitor with a rated voltage range that includes these irregular voltages.

Voltage	DC Voltage	DC+AC Voltage	AC Voltage	Pulse Voltage (1)	Pulse Voltage (2)
Positional Measurement	Vu-p	Vu-p	Vp-p	Vp-p	VD-D

2. Operating Temperature and Self-generated Heat (Apply to B/E Char.)

Keep the surface temperature of a capacitor below the upper limit of its rated operating temperature range. Be sure to take into account the heat generated by the capacitor itself. When the capacitor is used in a high-frequency current, pulse current or similar current, it may have self-generated heat due to dielectric loss. Applied voltage load should be such that self-generated heat is within 20° C under the condition where the capacitor is subjected to an atmospheric temperature of 25° C. When measuring, use a thermocouple of small thermal capacity-K of Φ 0.1mm under conditions where the capacitor is not affected by radiant heat from other components or wind from surroundings. Excessive heat may lead to deterioration of the capacitor's characteristics and reliability. (Never attempt to perform measurement with the cooling fan running. Otherwise, accurate measurement cannot be ensured.)

3. Test Condition for Withstanding Voltage

(1) Test Equipment

Test equipment for AC withstanding voltage should be used with the performance of the wave similar to 50/60Hz sine wave.

If the distorted sine wave or overload exceeding the specified voltage value is applied, a defect may be caused.

(2) Voltage Applied Method

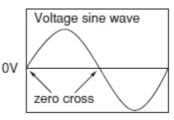
When the withstanding voltage is applied, the capacitor's lead or terminal should be firmly connected to the output of the withstanding voltage test equipment, and then the voltage should be raised from near zero to the test voltage.



	PART NO.	
Lood type 250VAC-V1 con	Edition	Page
Lead type 250VAC-Y1 cap	Α	15

If the test voltage without the raise from near zero voltage would be applied directly to capacitor, test voltage should be applied with the zero cross.* At the end of the test time, the test voltage should be reduced to near zero, and then capacitor's lead or terminal should be taken off the output of the withstanding voltage test equipment. If the test voltage without the raise from near zero voltage would be applied directly to capacitor, the surge voltage may rise, and therefore, a defect may be caused.

*ZERO CROSS is the point where voltage sine wave passes 0V. See the figure at below.



4. Fail-Safe

When the capacitor is broken, failure may result in a short circuit. Be sure to provide an appropriate fail—safe function like a fuse on your product if failure could result in an electric shock, fire or fuming.

FAILURE TO FOLLOW THE ABOVE CAUTIONS MAY RESULT, WORST CASE, IN A SHORT CIRCUIT AND CAUSE FUMING OR PARTIAL DISPERSION WHEN THE PRODUCT IS USED.

Caution (Storage and Operating Condition)

The insulating Epoxy molded capacitors does not form a perfect seal; therefore, do not use or store capacitors in a corrosive atmosphere, especially where chloride gas, sulfide gas, acid, alkali, salt or the like are present. And avoid exposure to moisture. Before cleaning, bonding or molding this product, verify that these processes do not affect produce quality by testing the performance of a cleaned, bonded or molded product in the intended equipment. Store the capacitors where the temperature and relative humidity do not exceed -40 to 85 degrees centigrade and 15 to 85%. Use capacitors within 6 months after delivery.

FAILURE TO FOLLOW THE ABOVE CAUTIONS MAY RESULT, WORST CASE, IN A SHOCT CIRCUIT AND CAUSE FUMING OR PARTIAL DISPERSION WHEN THE PRODUCT IS USED.

Caution (Soldering, Mounting and Handing)

1. Vibration and Impact

Do not expose a capacitor or its pins to excessive shock or vibration during use.

Excessive shock or vibration may cause fatigue destruction of lead wires mounted on the circuit board.

Please take measures to hold a capacitor on the circuit boards by adhesive, molding resin or another coating.

Please confirm there is no influence of holding measures on the product with the intended equipment.



	PART NO.	
Lead type 250VAC-Y1 cap	Edition	Page
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2. Soldering

When soldering this product to a PCB/PWB, do not exceed the solder heat resistance specifications of the capacitor. Subjecting this product to excessive heating could melt the internal junction solder and may result in thermal shocks that can crack the ceramic element.

Soldering the capacitor with a soldering iron should be performed in the following conditions.

Temperature of iron-tip: 400 degrees C. max.

Soldering iron wattage: 50W max. Soldering time: 3.5 sec. max.

3. Bonding, Resin Molding and Coating

Before bonding, molding or coating this product, verify that these processes do not affect the quality of capacitor by testing the performance of the bonded, molded or coated product in the intended equipment.

In case the amount of applications, dryness/hardening conditions of adhesives and molding resins containing organic solvents (ethyl acetate, methyl ethyl ketone, toluene, etc.) are unsuitable, the outer coating resin of a capacitor is damaged by the organic solvents and it may result, worst case, in a short circuit.

The variation in thickness of adhesive, molding resin or coating may cause outer coating resin cracking and/or ceramic element cracking of a capacitor in a temperature cycling.

4. Treatment after Bonding, Resin Molding and Coating

When the outer coating is hot (over 100 degrees C.) after soldering, it becomes soft and fragile. Therefore, please be careful not to give it mechanical stress.

FAILURE TO FOLLOW THE ABOVE CAUTIONS MAY RESULT, WORST CASE, IN A SHOCT CIRCUIT AND CAUSE FUMING OR PARTIAL DISPERSION WHEN THE PRODUCT IS USED.

Notice (Soldering and Mounting)

Cleaning (ultrasonic cleaning)

To perform ultrasonic cleaning, observe the following conditions.

Rinse bath capacity: Output of 20 watts per liter or less. Rinsing time: 5 min. max.

Do not vibrate the PCB/PWB directly. Excessive ultrasonic cleaning may lead to fatigue destruction of the pins.

Notice (Rating)

- 1. Capacitance Change of Capacitors
- (1) For CH/SL/DL char.

Capacitance might change a little depending on a surrounding temperature or an applied voltage.

Please contact us if you use a strict constant time circuit.



	PART NO.	
Lead type 250VAC-Y1 cap	Edition	Page
	Α	17

(2) For B/E /F char.

Capacitors have an aging characteristic, whereby the capacitor continually decreases its capacitance slightly if the capacitor is left on for a long time. Moreover, capacitance might change greatly depending on the surrounding temperature or an applied voltage. Therefore, it is not likely to be suitable for use in a constant time circuit.

Please contact us if you need detailed information.

2. Performance Check by Equipment

Before using a capacitor, check that there is no problem in the equipment's performance and the specifications.

Generally speaking, CLASS 2 (B/E char.) ceramic capacitors have voltage dependence characteristics and temperature dependence characteristics in capacitance, so the capacitance value may change depending on the operating condition in the equipment. Therefore, be sure to confirm the apparatus performance of receiving influence in the capacitance value change of a capacitor, such as leakage current and noise suppression characteristic.

Moreover, check the surge-proof ability of a capacitor in the equipment, if needed, because the surge voltage may exceed specific value by the inductance of the circuit.