

**SAFETY STANDARDS REGULATED, REINFORCED
INSULATION TYPE, AH SERIES**

POE-D10-00-E-24

Ver: 24

Page: 1 / 17

PRODUCT SPECIFICATION

**PRODUCT: CERAMIC DISC CAPACITOR
SAFETY RECOGNIZED**

P/N: YP0AH561K080L3CN0B

CUSTOMER: 凯铨

DOC. NO.: POE-D10-00-E-24

DATE: 2022/6/17

APPROVED BY CUSTOMER

VENDOR : <ul style="list-style-type: none"><input type="checkbox"/> WALSIN TECHNOLOGY CORPORATION 566-1, KAO SHI ROAD, YANG-MEI TAO-YUAN, TAIWAN<input type="checkbox"/> PAN OVERSEAS (GUANGZHOU) ELECTRONIC CO.,LTD. NO.277,HONG MING ROAD,EASTERN SECTION, GUANG ZHOU ECONOMIC AND TECHNOLOGY DEVELOPMENT ZONE,CHINA<input type="checkbox"/> DONGGUAN WALSIN TECHNOLOGY ELECTRONICS CO., LTD. NO.638, MEI JING WEST ROAD,XINIUPO,ADMINISTRATIVE ZONE,DALANGTOWN,DONGGUAN CITY, GUANGDONG PROVINCE
MANUFACTURE SITE : <ul style="list-style-type: none"><input checked="" type="checkbox"/> PAN OVERSEAS (GUANGZHOU) ELECTRONIC CO.,LTD. NO.277,HONG MING ROAD,EASTERN SECTION, GUANG ZHOU ECONOMIC AND TECHNOLOGY DEVELOPMENT ZONE,CHINA

Table of Contents

No.	Item	Page
1	Part number for SAP system	4
2	Marking	5
3	Scope	6
4	Specification and test method	7~10
5	Packing specification	11
6	Notices	12~15
7	Soldering Recommendation	16
8	Drawing of Internal Structure and material list	17



SAFETY STANDARDS REGULATED, REINFORCED INSULATION TYPE, AH SERIES	POE-D10-00-E-24	Ver: 24	Page: 3 / 17
--	-----------------	---------	--------------

Customer	凯铨	SAP PART NO	YP0AH561K080L3CN0B	
CUSTOMER P/N 客 戶 料 號		REV. 修正		
C A P. 電容量	560 pF TOL.允差 ±10%	WORKING VOLTAGE 工作電壓	X1: 400 VAC	Y1: 250 VAC
D · F 散逸因素	2.5% MAX. AT 1KHz±20% 測試 1.0 Vrms	TEST VOLTAGE 測試電壓	4000 V A C	
I . R. 絕緣電阻	10000MΩ MIN. AT 500VDC 檔位測試	T . C . 溫度特性	Y5P TOL.±10%	
F 脚 距	10.0±0.5 mm	Lead style : L(Straight lead)		
D 外 寬	9.0 mm max			
T 厚 度	5.0 mm max			
L 脚 長	3.3±0.5 mm			
d 線 徑	0.55±0.05 mm			
e 塗 裝 脚 長	3.0mm Max			
MARKING :				
REMARK				
“ · ” : Individual specification code, it is added under the lot no.				

1. Part number for SAP system:

(Ex.) YP 0 AH 561 K 08 0 L 3C N 0 B
(1) (2)-1 (2)-1 (3) (4) (5) (6) (7) (8) (9) (10) (11)

(1) Temperature characteristic (identified code)

CODE	Temperature characteristic	Cap. Change
YP	B(Y5P)	±10%

(2)-1 Rated voltage(identified by 1-figure code) :

Code	Rated voltage
0	X1:400Vac/Y1:250Vac

(2)-2 Type(identified by 2-figure code): AH

(3)Capacitance (identified by 3-figure code) :

Code	Capacitance (pF)
561	560

(4)Capacitance tolerance (identified by code) :

Code	Tolerance
K	±10%

(5)Nominal body diameter dimension :

Code	Max Diameter of Body	Max thickness of body
08	9.0	5.0

(6)Internal code : 0--Normal, other code--Special control

(7)Lead Style :

Code	Tolerance
L	Straight lead

(8)Packing mode :

Bulk Code	Description
3C	Lead length : 3.3mm

(9) Tolerance of lead length

Code	Description
N	±0.5 mm Short lead

(10)Lead space

Code	Description
0	10.0±0.5 mm

(11)Epoxy resin code

Code	Description
B	Halogen and Pb free, epoxy resin.

SAFETY STANDARDS REGULATED, REINFORCED INSULATION TYPE, AH SERIES	POE-D10-00-E-24	Ver: 24	Page: 5 / 17
--	-----------------	---------	--------------

2. Marking:

1.Type Designation	AH		
2.Nominal Capacitance	Identified by 3-Figure Code. Ex. 560pF→"471"		
3.Capacitance Tolerance	K:±10%		
4.Company Name Code(Trade mark)	UK		
5. Products ID	<p>Abbreviation ex.:</p> <p>Manufacture year: ← 2 C 6 1234 → Last 4 digits of lot no.</p> <p>1:2021 2:2022 3:2023 : Individual specification code</p> <p>Manufacture month: 1:January 2:February : 9:September O:October N:November D:December</p> <p>Epoxy resin code: "_" : Halogen and Pb free epoxy resin (For the last code "H" and "B" of SAP P/N)</p> <p>Manufactory: C:Pan overseas (Guangzhou)</p>		
6.Approved Monogram:			
(1) VDE approval mark		IEC 60384-14 Class Code : X1 : 400V~ , Y1 : 250V~ or 400V~	
(2) UL approval mark		(6) DEMKO approval mark	
(3) CSA approval mark		(7) FIMKO approval mark	
(4) SEMKO approval mark		(8) SEV approval mark	
(5) NEMKO approval mark		(9) CQC approval mark	
Normal marking			
One side			
(for SAP part number 10-11 digits ≥ "08" products)			
* Marking by the laser.			
* " <u>C</u> " : Marked with code "_" stand for Halogen and Pb free epoxy resin.			
* "·" : Individual specification code, it is added under the lot no.			

SAFETY STANDARDS REGULATED, REINFORCED INSULATION TYPE, AH SERIES	POE-D10-00-E-24	Ver: 24	Page: 6 / 17
--	-----------------	---------	--------------

3. Scope:

THIS SPECIFICATION APPLIES TO CERAMIC INSULATED CAPACITORS DISK TYPE USED IN ELECTRONIC EQUIPMENT.

3.1 Applicable safety standard

This specification applies to the VDE, SEV, SEMKO, FIMKO, NEMKO, DEMKO, KTL, UL, CSA approved ceramic capacitors disc type for antenna coupling, line-by-pass and across-the-line. X1, Y1 capacitor based on IEC60384-14. "UL, CSA recognized capacitor for across-the-line, line-by-pass" and antenna-isolation.

3.2 Safety standards approval and recognized no.

Safety Standard	Standard No.	Subclass	w.v.	Recognized No.
UL	ANSI/UL 60384-14:2013	X1	400VAC	E146544
		Y1	250VAC/400VAC	
CSA	IEC60384-14 (ed.4) 2013	X1	400VAC	2347971
		Y1	250VAC/400VAC	
VDE (ENEC)	EN 60384-14:2013/A1:2016 IEC 6.384-14:2013 IEC 6.384-14:2013/AMD1:2016	X1	400VAC	40001804
		Y1	250VAC/400VAC	
SEV	EN 60384-14:2013 + A1:16	X1	400VAC	21.0554
		Y1	250VAC/400VAC	
SEMKO	EN 60384-14:2013+A1	X1	400VAC	1811992
		Y1	250VAC/400VAC	
FIMKO	EN 60384-14:2013 + A1:16	X1	400VAC	NCS/FI 30462
		Y1	250VAC/400VAC	
NEMKO	EN 60384-14:2013;A1	X1	400VAC	No. P18222946
		Y1	250VAC/400VAC	
DEMKO	EN 60384-14:2013/A1:2016 EN 60384-14:2013	X1	400VAC	D-07609
		Y1	250VAC/400VAC	
CQC	IEC60384-14:2013+AMD1:2016	X1:400VAC /Y1:400VAC		CQC03001003673
	GB/T6346.14-2015	X1:400VAC /Y1:250VAC		CQC11001055510
KTL	KC60384-1(2015-09)	X1	400VAC	SU03065-14004A
	KC60384-14(2015-09)	Y1	250VAC	SU03065-14005A
	IEC 60384-14(ed.3)	Y1	400VAC	SU03065-14006A

SAFETY STANDARDS REGULATED, REINFORCED INSULATION TYPE, AH SERIES	POE-D10-00-E-24	Ver: 24	Page: 7 / 17
--	-----------------	---------	--------------

4. Specification and test method:

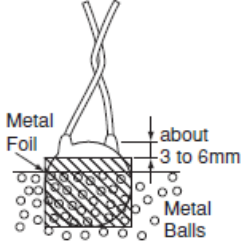
4.1 Operating Temperature Range: -40 to +125°C

4.2 Test condition:

Test and measurement shall be made at the standard condition. (temperature 15~35°C, relative humidity 45~75% and atmospheric pressure 860~1060hpa). Unless otherwise specified herein.

If doubt occurred on the value of measurement, and measurement was requested by customer capacitors shall be measured at the reference condition. (temperature 20±2°C or 25 ± 2°C, relative humidity 60~70% and atmospheric pressure 860~1060hpa.)

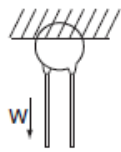
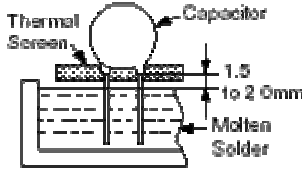
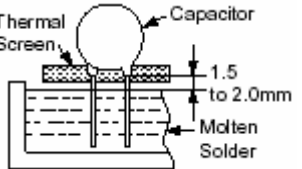
4.3 Performance:

No	Items	Performance	Testing method										
4.3.1	Appearance And dimension	No visible defect, and dimensions are within specified range.	The capacitor should be visually inspected for evidence of defect. Dimensions should be measured with slide calipers.										
4.3.2	Marking	To be easily legible.	The capacitor should be visually inspected.										
4.3.3	Between terminals	No failure.	The capacitors shall not be damage when AC4000V (rms.) are applied between the lead wires for 60sec. (Charge/Discharge current ≤ 50mA.)										
	Body Insulation	No failure.	First, the terminals of the capacitor should be connected together. Then, a metal foil should be closely wrapped around the body of the capacitor to the distance of about 3 to 6mm from each terminal. Then, the capacitor should be inserted into a container filled with metal balls of about 1mm diameter. Finally, AC4000V (r.m.s.)<50/60Hz> is applied for 60 s between the capacitor lead wires and metal balls. (Charge/Discharge current ≤ 50mA.) 										
4.3.4	Insulation Resistance	Between terminals 10000MΩ or more.	The insulation resistance shall be measured with DC500±50V within 60±5sec of charging.										
4.3.5	Capacitance	Within specified tolerance.	Y5P: The capacitance should be measured at 20°C with 1±0.2kHz and AC5V(r.m.s.) max.										
4.3.6	Dissipation Factor(tanδ)	Y5P : D.F. ≤ 2.5%											
4.3.7	Temperature Characteristic	<table border="1"> <tr> <th>Char.</th> <th>Capacitance Change</th> </tr> <tr> <td>Y5P</td> <td>Within ± 10%</td> </tr> </table>	Char.	Capacitance Change	Y5P	Within ± 10%	The capacitance measurement shall be made at each step specified in Table 1.						
		Char.	Capacitance Change										
Y5P	Within ± 10%												
<table border="1"> <tr> <th>Step</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> </tr> <tr> <td>Temp.(°C)</td> <td>+20±2</td> <td>-25±2</td> <td>+20±2</td> <td>+85±2</td> <td>+20±2</td> </tr> </table>	Step	1	2	3	4	5	Temp.(°C)	+20±2	-25±2	+20±2	+85±2	+20±2	Pre-treatment: Capacitor shall be stored at 125±2°C for 1hour, then placed at *1 room condition for 24±2hours before measurements.
Step	1	2	3	4	5								
Temp.(°C)	+20±2	-25±2	+20±2	+85±2	+20±2								
4.3.8	Solderability of Leads	Lead wire should be soldered with uniform coating on the axial direction over 3/4 of the circumferential direction.	The lead wire of capacitor should be dipped into molten solder for 5 ± 0.5 sec. The depth of immersion is up to about 1.5 to 2.0 mm from the root of lead wires. Temp. of solder : Lead Free Solder (Sn-3Ag-0.5Cu) 245±5°C										

※ "room condition" temperature : 15~35°C, humidity : 45~75%,atmospheric pressure : 86~106kPa

※ "C" expresses nominal capacitance value (pF).

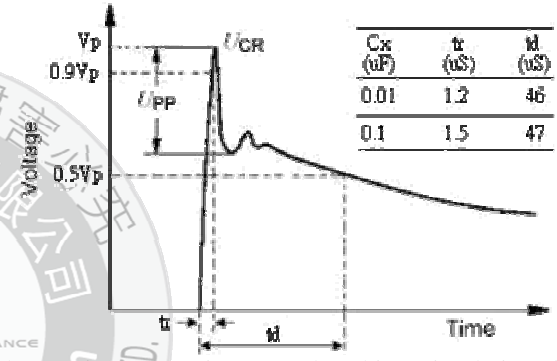
SAFETY STANDARDS REGULATED, REINFORCED INSULATION TYPE, AH SERIES	POE-D10-00-E-24	Ver: 24	Page: 8 / 17
--	-----------------	---------	--------------

No	Items	Performance	Testing method
4.3.9	Robustness of Terminations	Tensile Lead wire shall not cut off capacitor shall not be broken.	As shown in the figure at right, fix the body of the capacitor and apply a tensile weight gradually to each lead wire in the radial direction of the capacitor up to 10N and keep it for 10±1 sec. 
		Bending Lead wire shall not cut off. Capacitor shall not be broken.	With the termination in its normal position, the specimen is held by its body in such a manner that the axis of the termination is vertical; a mass applying a force of 5N is then suspended from the end of the termination. The body of the specimen is then inclined, within a period of 2 to 3sec, through an angle of approximately 90° in the vertical plane and then returned to its initial position over the same period of time; this operation constitutes one bend. One bend immediately followed by a second bend in the opposite direction.
4.3.10	Soldering Effect (Non-Preheat)	Appearance No marked defect.	As shown in figure, the lead wires should be immersed in solder of 350 ± 10 °C or 260 ± 5 °C up to 1.5 to 2.0 mm from the root of terminal for 3.5 ± 0.5 sec (10 ± 1 sec. for 260 ± 5 °C). 
		I.R. 1000 MΩ min.	
		Dielectric Strength Per item 4.3.3	
		Capacitance Change Y5P : Within ±10 %	
4.3.11	Soldering Effect (On-Preheat)	Appearance No marked defect.	First the capacitor should be stored at 120+0/-5 °C for 60 +0/-5 sec. Then , as in figure , the lead wires should be immersed solder of 260+0/-5 °C up to 1.5 to 2.0 mm from the root of terminal for 7.5+0/-1 sec. 
		I.R. 1000 MΩ min.	
		Dielectric Strength Per item 4.3.3	
		Capacitance Change Y5P : Within ±10 %	

※ "room condition" temperature : 15~35°C, humidity : 45~75%,atmospheric pressure : 86~106kPa

※ "C" expresses nominal capacitance value (pF).

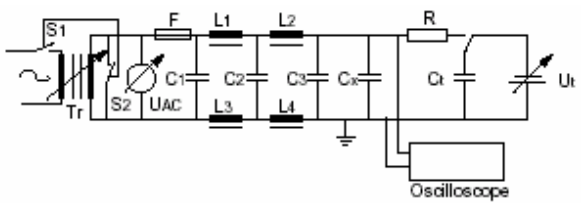
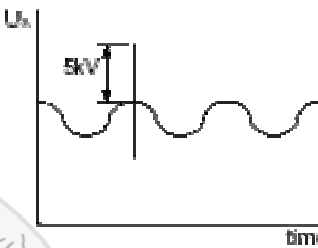
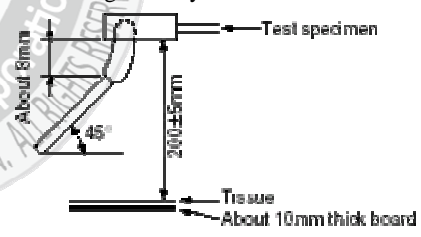
SAFETY STANDARDS REGULATED, REINFORCED INSULATION TYPE, AH SERIES	POE-D10-00-E-24	Ver: 24	Page: 9 / 17
--	-----------------	---------	--------------

No	Items	Performance	Testing method									
4.3.12	Appearance	No marked defect.	Set the capacitor for 500±12hours at 40±2°C in 90 to 95% relative humidity. Then capacitor shall be stored for 1 to 2 hours at *1room condition. Pre-treatment: Capacitor shall be stored at 125±2°C for 1hour.then placed at*1room condition for 24±2hours. Post-treatment: Capacitor shall be stored for 1 to 2hours at *1room condition.									
	Humidity (Under steady State) Capacitance Change	Y5P : Within ±10%										
	D.F.	Y5P : 5.0% max.										
4.3.13	Humidity Loading I.R.	Y5P : 3000MΩ min.	Apply the rated voltage for 500±12 hours at 40±2°C in 90 to 95% relative humidity Pre-treatment: Capacitor shall be stored at 125±2°C for 1hour.then placed at*1room condition for 24±2hours. Post-treatment: Capacitor shall be stored for 1 to 2hours at *1room condition.									
	Dielectric Strength	Per Item 4.3.3										
4.3.14	Appearance	No marked defect.	<p>Impulse Voltage</p> <p>Each individual capacitor shall be subjected to 8kV impulses for three times. After the capacitors are applied to life test.</p>  <table border="1" data-bbox="1260 1008 1468 1142"> <thead> <tr> <th>Cx (uF)</th> <th>tx (uS)</th> <th>td (uS)</th> </tr> </thead> <tbody> <tr> <td>0.01</td> <td>1.2</td> <td>46</td> </tr> <tr> <td>0.1</td> <td>1.5</td> <td>47</td> </tr> </tbody> </table>	Cx (uF)	tx (uS)	td (uS)	0.01	1.2	46	0.1	1.5	47
	Cx (uF)	tx (uS)		td (uS)								
	0.01	1.2		46								
	0.1	1.5		47								
Capacitance Change	Y5P : Within ±20%											
I.R.	3000MΩ min.											
Life Dielectric Strength	Per Item 4.3.3											

※ "room condition" temperature : 15~35°C, humidity : 45~75%,atmospheric pressure : 86~106kPa

※ "C" expresses nominal capacitance value (pF).

SAFETY STANDARDS REGULATED, REINFORCED INSULATION TYPE, AH SERIES	POE-D10-00-E-24	Ver: 24	Page: 10 / 17
--	-----------------	---------	---------------

No	Items	Performance	Testing method																					
4.3.15	Active Flammability	The cheesecloth shall not be on fire.	<p>The specimens shall be individually wrapped in at least one but more than two complete layers of cheesecloth. The specimens shall be subjected to 20 discharges. The interval between successive discharges shall be 5 sec. The UAC shall be maintained for 2 min after the last discharge.</p>  <p> C1,2 : 1μF±10% L1 to 4 : 1.5mH±20% C3 : 0.033μF±5% 10kV 16A Rod core choke Ct : 3μF±5% 10kV R : 100Ω±2% Cx : Capacitor under test UAC : UR±5% F : Fuse, Rated 10A UR : Rated Voltage Ut : Voltage applied to Ct </p> 																					
4.3.16	Passive Flammability	The burning time shall not be exceeded the time 30 sec. The tissue paper shall not ignite.	<p>The capacitor under test shall be held in the position which best promotes burning. Each specimen shall only be exposed once to flame. Time of exposure to flame: 30sec. Length of flame : 12±1mm Gas burner : Length 35mm min. Inside Dia. : 0.5±0.1mm Outside Dia. : 0.9mm max. Gas : Butane gas Purity 95% min.</p> 																					
4.3.17	Temperature Cycle	<p>Appearance No marked defect</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 33%;">Char.</td> <td style="width: 33%;">Cap. Change</td> <td style="width: 33%;">DF</td> </tr> <tr> <td>Y5P</td> <td>≤+10%</td> <td>DF≤5.0%</td> </tr> </table> <p>I.R. 3000MΩ min.</p> <p>Dielectric strength Per Item 4.3.3</p>	Char.	Cap. Change	DF	Y5P	≤+10%	DF≤5.0%	<p>The capacitor should be subjected to 5 temperature cycles, <Temperature Cycle time: 5cycles></p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Step</th> <th>Temperature(°C)</th> <th>Time(min)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-40+0/-3</td> <td>30</td> </tr> <tr> <td>2</td> <td>Room temp.</td> <td>3</td> </tr> <tr> <td>3</td> <td>125+3/-0</td> <td>30</td> </tr> <tr> <td>4</td> <td>Room temp.</td> <td>3</td> </tr> </tbody> </table> <p>Pre-treatment: Capacitor shall be stored at 125±2°C for 1hour, then placed at *1 room condition for 24±2hours.</p> <p>Post-treatment: Capacitor shall be stored for 1 to 2hours at *1 room condition.</p>	Step	Temperature(°C)	Time(min)	1	-40+0/-3	30	2	Room temp.	3	3	125+3/-0	30	4	Room temp.	3
Char.	Cap. Change	DF																						
Y5P	≤+10%	DF≤5.0%																						
Step	Temperature(°C)	Time(min)																						
1	-40+0/-3	30																						
2	Room temp.	3																						
3	125+3/-0	30																						
4	Room temp.	3																						

※ “room condition” temperature : 15~35°C, humidity : 45~75%, atmospheric pressure : 86~106kPa

※ "C" expresses nominal capacitance value (pF).

5.Packing Baggage :

5.1 Packing size:

Type	Box	Carton
Bulk	<p>Unit:mm</p>	<p>Unit:mm</p> <p>P.O.# C/NO. PF% WV N.W: KG KPCS G.W: KG</p>

5.2 Packing quantity:

Packing type	Lead length	Size code of 10th to 11th in SAP P/N	MPQ (Kpcs/Bag)	Kpcs/Box
Bulk	Long lead (L ≥ 20mm)	06~12	0.5	1.5
		13-15	0.5	1
	Short lead (L < 20mm)	06~14	0.5	2
		15	0.2	1
All		16	0.2	1

5.3 Label samples

CUST P/N: 2580AH133KCPAKLF

NEW POE P/N: YP0AH331K060DAMD0B QTY:1000 PCS

POE P/N: YP0AH331K060DAMD0B

CAP:330pF TOL: + -10%

VOLT:X1:400VAC, Y1:250VAC T.C: Y5P

LOT NO.: 741HK01054 DATE:2018.03.30

PAN OVERSEAS(GUANGZHOU) ELECTRONIC CO.,LTD.

R001

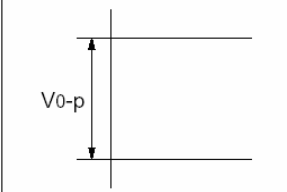
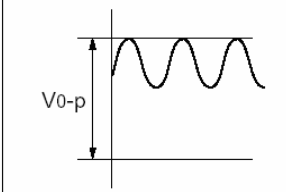
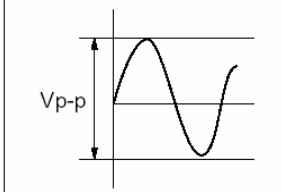
6. Notices:

6.1 Caution (Rating):

(1). Operating Voltage

Be sure to maintain the V_{p-p} value of the applied voltage or the V_{0-p} which contains DC bias within the rated voltage range.

When the voltage is started to apply to the circuit or it is stopped applying, the irregular voltage may be generated for a transit period because of resonance or switching. Be sure to use a capacitor within rated voltage containing this irregular voltage.

Voltage	DC Voltage	DC+AC Voltage	AC Voltage
Positional measurement			

(2). Operating Temperature and Self-generated Heat

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.

(3). Test condition for withstanding Voltage

I. Test Equipment

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

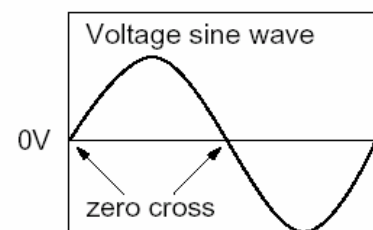
If the distorted sine wave or over load exceeding the specified voltage value is applied, the defective may be caused.

II. Voltage Applied Method

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

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 shall be reduced to near zero, and then capacitor's lead or terminal shall 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 arise, and therefore, the defective may be caused.



ZERO CROSS is the point where voltage sine wave pass 0V.- See the right figure.

III. Applied voltage

The voltages of Table shall be applied between the respective measuring points of 1 min for qualification approval and periodic testing and for a period of not less than 1 s for lot-by-lot quality conformance testing, a voltage proof test such as Test C shall be carried out only for qualification approval tests and periodic tests;

Attention is drawn to the fact that repetition of the voltage proof test by the user may damage the capacitor. If repetition of the voltage proof test is made by the user, the applied voltage should not be greater than 66 % of the test voltage specified in Table .

Table –Voltage proof

Class	Range of rated voltages	Test A	Test B or Test C
X1	$\leq 1\ 000\ V$	4,3 UR (d.c.) c	2 UR + 1 500 V (a.c.) with a minimum of 2 000 V (a.c.) a
Y1	$\leq 500\ V$	4 000 V (a.c.)	4 000 V (a.c.)

a For Delta and T-connected capacitor units according to Figures 5b and 5c, the test voltage for terminals to case shall be the appropriate test voltage for the Y-capacitors.
b The UR in this d.c. test is the rated a.c.voltage value.

Note:

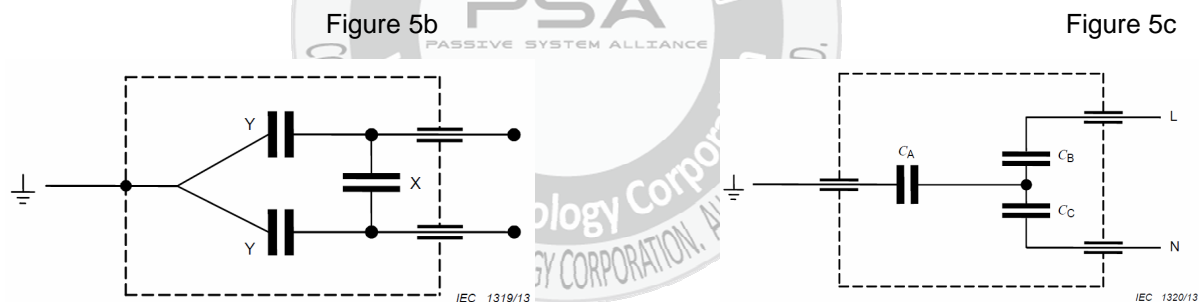
Test A – Between terminations

Test B – Internal insulation

Test C – External insulation (applicable only to insulated capacitors in nonmetallic case or in insulated metal case)

Figure 5b – Delta by-pass capacitor (in metallic housing)

Figure 5c – Example of a T-connected by-pass capacitor (in non-metallic housing)



***For capacitors with non-metallic housings, the earth connection is brought out as a separate termination as is shown in Figure 5c.**

(4).Fail-Safe

When capacitor would be 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 would follow an electric shock, fire or fume.

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.

6.2 Caution (Storage and operating condition):

Operating and storage environment

The insulating coating of 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 product 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 -10 to 40 degrees centigrade and 15 to 85 % for 6 months maximum and use within the period after receiving the capacitors.

"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."

6.3 Caution (Soldering and Mounting):

6.3.1 Vibration and impact:

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

6.3.2 Soldering

When soldering this product to a PCB/PWB, do not exceed the solder heat resistance specification 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.

When soldering capacitor with a soldering iron, it should be performed in following conditions.

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

Soldering iron wattage: 50W max.

Soldering time: 3.5 sec. max.

6.3.3 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 maximum.

Do not vibrate the PCB/PWB directly.

Excessive ultrasonic cleaning may lead to fatigue destruction of the lead wires.

"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."

6.3.4 List of substances that affect the insulation strength of coating :

Epoxy resin solvent

Category	Model		
Ketone	Acetone	Butanone	Cyclohexanone
Esters	Ethyl acetate	Dibutyl phthalate	
Chlorinated hydrocarbons	Dichloromethane		

Epoxy resin thinner

Category		Model	
Reactive diluent activated thinner	Simple function group	HK-66 (Alkyl glycidyl ether)	
		501 (Butyl glycidyl ether)	
		690 (Phenyl Glycidyl Ether)	
		AGE (C12-14Aliphatic Polyalcohol Glycidyl Ether)	
		692 (Benzyl Glycidyl Ether)	
	Two functional groups	D-678 (Neopentyl glycol diglycidyl ether)	
		622 (1,4-Butanediol diglycidyl ether)	
		669 (Ethylene glycol diglycidyl ether)	
		X-632 (Polypropylene glycol diglycidyl ether)	
		X-652 (1,6-Hexadiol diglycidyl ether)	
Non-activated thinner	Anhydrous ethanol	Toluene	
	Ethyl acetate	Dimethylbenzene	
	Dimethyl formamide	Butyl acetate	
	Acetone	Styrene	
	Polyol	Benzyl alcohol	

Note: The above substances should not contact the coating of the product body, otherwise it will affect the insulation strength of the product

6.4 Caution (Handling):

Vibration and impact

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

"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."

7. Soldering Recommendation:

7.1 Wave Soldering Profile:

- Temperature conditions of the flow is recommended as shown in the chart
- Must implement the pre-heat
- Maximum peak flow temperature is recommended 265°C
- Time “T” implement in the chart recommended within 20 sec. if temperature exceed 200°C
- Take care with the flow solder not to touch the capacitor body directly at mounting

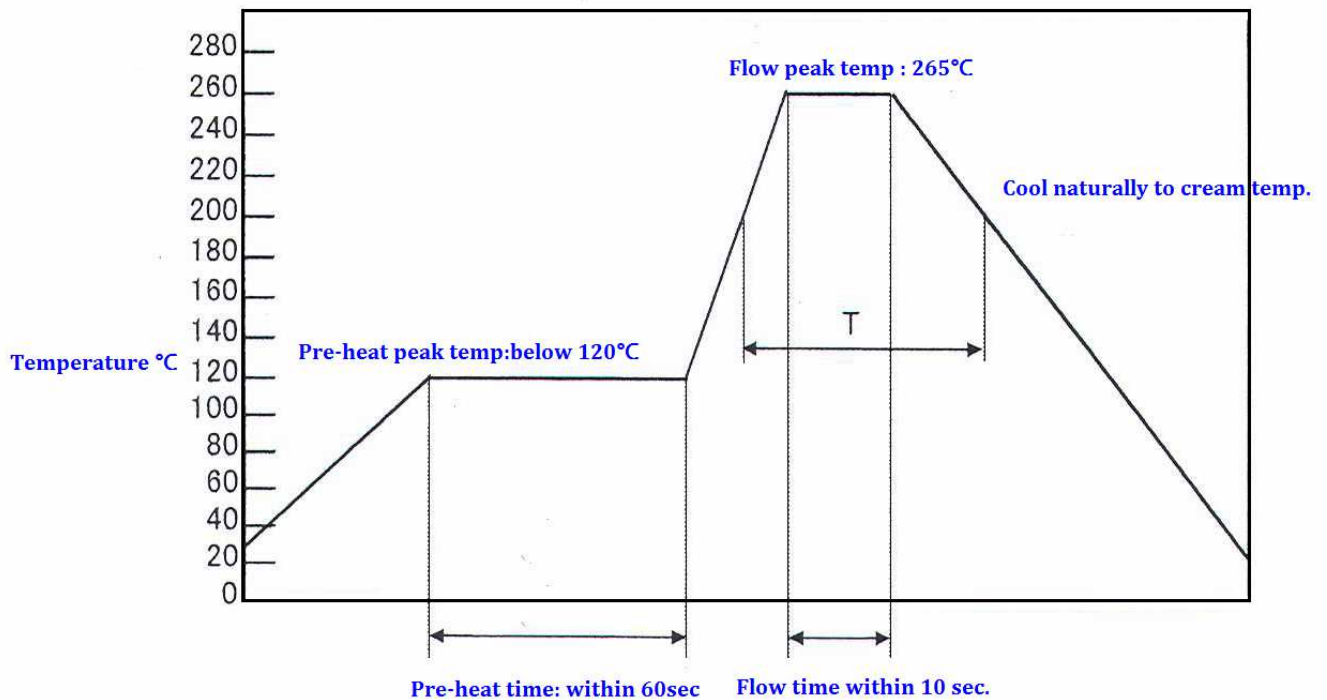


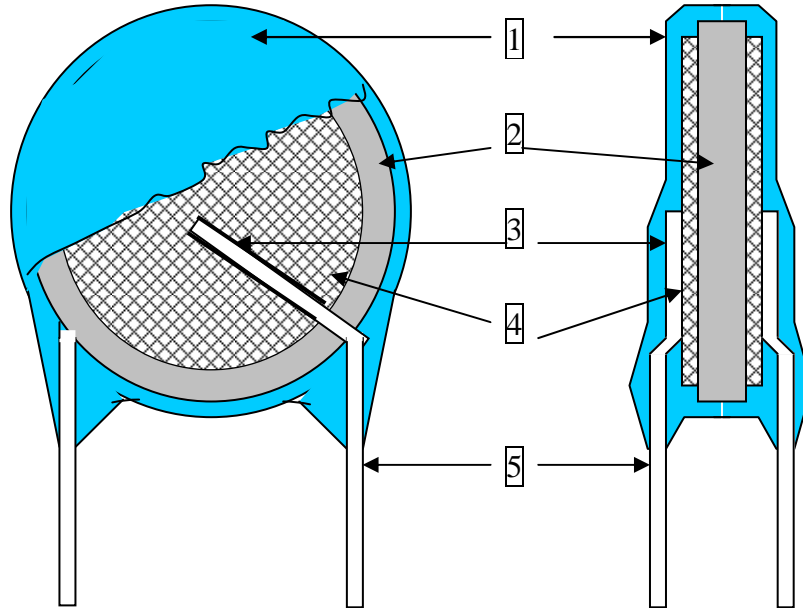
Chart to show flow recommended temp

7.2 Recommended Reworking Conditions with Soldering Iron :

- Temperature of iron-tip: 400 degrees C. max.
- Soldering iron wattage: 50W max.
- Soldering time: 3.5 sec. max.
- Distance from coating body: 2 mm (min.)

7.3 Reflow-Soldering : Lead Ceramic Cap. should not be soldered by reflow-soldering.

8. Drawing of internal structure and material list:



Remarks :

No.	Part name	Material	Model/Type	Component
1	Insulation Coating	Epoxy polymer	EF-150 PCE-300 ECP-357	Epoxy resin、 Pigment (Blue / UL 94 V-0) The minimum thickness of coating (reinforced insulation) is 0.4mm
2	Dielectric Element	Ceramic	Y5P	BaTiO ₃
3	Solder	Tin-silver	Sn96.5-Ag3-Cu0.5	Sn96.5-Ag3-Cu0.5
4	Electrodes	Ag	SP-160PL SP-260PL	Silver 、 Glass frit
5	Leads wire	Tinned copper clad steel wire	0.55±0.05mm	Substrate metal: Fe & Cu Surface plating: Sn 100%(3~7μm)