產 品 承 認 書

SPECIFICATION FOR APPROVAL

客戶名稱 CUSTOMER	
客戶料號 PART NO	
規格描述 DESCRIPTION	10PF~4700PF AC250V/AC500V Y1 TYPE
成功料號 SUCCESS P/N	See page 5
日期 DATE	2018/5/31

安規認證規格（Safety Recognized Type）

★ 符合 **RoHS&HF** 及其他環保要求；金屬鍍層不含六價鉻

RoHS &HF& Requirements of Environmental; prohibit containing $Cr^{+}6$ in the plating with metal

Success Electronics Co., Ltd		
Made By	Checked By	Approval By
吳裕武	祁[illegible]	楊豪

Customer Approval		
Prepared By	Checked By	Approval By

成功工業（惠州）有限公司

SUCCESS ELECTRONICS (HUIZHOU) CO., LTD.

中國廣東省惠州市仲愷高新區潼僑鎮潼僑工業基地新科大道

（New Tech Blvd, TongQiao Industrial Base, TongQiao Town, ZhongKaiGaoXin Dist, HuiZhou City, China）

電話（TEL）:+86-752-5311152/53 傳真（FAX）: +86-752-5311150/51

目錄 Table of Contents

COMPONENT SPEC VERSION RECORD

VER	MINUTE OF CHANGES	SEC CHECK	RELEASE DATE
1.0	CHECKED AND RELEASED	祁能	2016/08/10

一．品名說明 (Part No. Explain)

品名(Part No.):	5	S	E	2	2	2	M	T	4	0	2	E	9	6	E
說明(Explain No.):	1	2		3			4	5				6	7	8	9

說明 1 (Explain No. 1)：種類 (Type)

No.	電容種類	Capacitor Type
5	安規電容	Safety Recognized Type

說明 2 (Explain No. 2)：溫度特性 (Temperature Characteristic)

標示 (Code)	SB	SE	SF	SL
溫度特性 (Temp. Char.)	Y5P	Y5U	Y5V	SL

說明 3 (Explain No. 3)：靜電容量 (Nominal Capacitance)

標示 (Code)	100	471	222	472
靜電容量 (Nominal Cap.)	10PF	470PF	2200PF	4700PF

說明 4 (Explain No. 4)：靜電容量許容差 (Nominal Capacitance Tolerance)

標示 (Code)	J	K	M
許容差 (Tolerance)	±5%	±10%	±20%

說明 5 (Explain No. 5)：測試電壓 (Test Voltage)

標示 (Code)	T402 (Y1)
測試電壓(Test Voltage)	AC 4.0 KV

說明 6 (Explain No. 6):引線形狀及包裝方式(Lead Style and Packing)

代碼說明(Code configuration)	散裝(Bulk)	盒裝編帶(Ammo)		軸裝編帶(Reel)	
編帶孔對孔距離（P0）	/	PO=12.7mm	P0=15.0mm	PO=12.7mm	P0=15.0mm
直腳長腳(Straight long)	A	S	T	L	V
直線短腳(Straight short)	H	/	/	/	/
一字形腳(Vertical crimped)	E	M	R	P	W
外彎長腳(Outside crimped long)	J	N	B	Q	/
外彎短腳(Outside crimped short)	D	/	/	/	/

說明 7 (Explain No. 7)：引線間距（Lead spacing）

8	引線間距為 9.0mm (Lead spacing for 9.0 mm)
9	引線間距為 10.0mm (Lead spacing for 10.0 mm)

說明 8 (Explain No. 8)：引線直徑 (Wire Diameter)

6	引線直徑為 0.60mm (Wire Diameter for 0.60mm)
7	引線直徑為 0.65mm (Wire Diameter for 0.65mm)

說明 9 (Explain No. 9):

E	表示符合無鉛無鹵產品 RoHS+HF

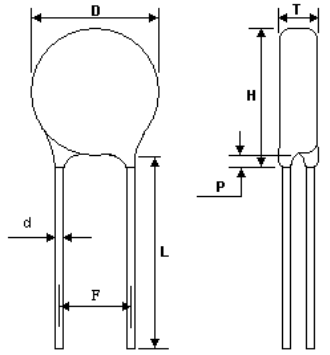
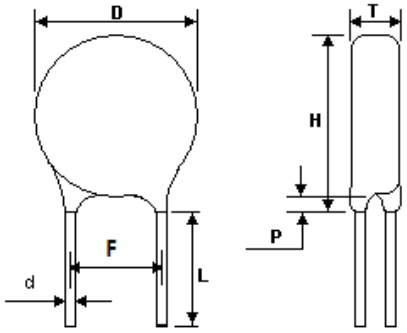
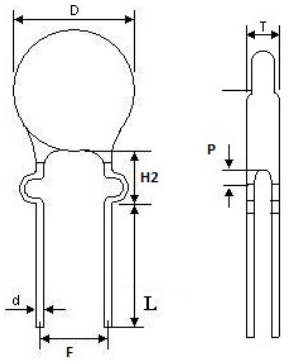
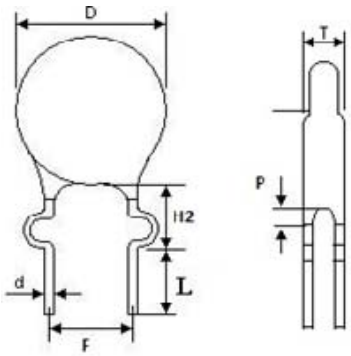
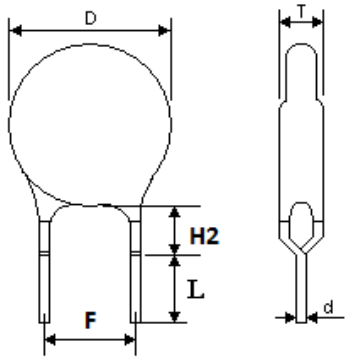
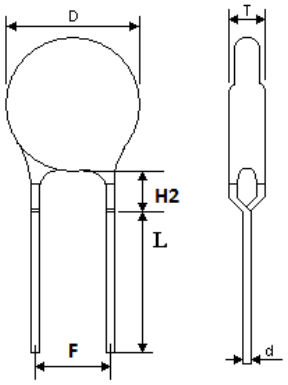
二、產品規格表（Capacitance value vs. rated voltage, product diameter）:

Ps:料號中“*”表示引線形狀，參照第三項線型尺寸選定；“#”表示引腳間距，參照表格右側 Lead spacing 參數。

Part Number	Cap. (pF)	Cap. Tol. (%)	Rated Volt.	尺寸 Dimension (mm)			
				D(Max)	T(Max)	Lead spacing(F)	Diameter of wire
5SL100KT402*#6E	10	±10%	AC250V/AC500V	7.5	5.5	10±1.0	0.60±0.1
5SL150KT402*#6E	12	±10%	AC250V/AC500V	7.5	5.5	10±1.0	0.60±0.1
5SL180KT402*#6E	18	±10%	AC250V/AC500V	7.5	5.5	10±1.0	0.60±0.1
5SL220KT402*#6E	22	±10%	AC250V/AC500V	7.5	5.5	10±1.0	0.60±0.1
5SL330KT402*#6E	33	±10%	AC250V/AC500V	8.0	5.5	10±1.0	0.60±0.1
5SL470KT402*#6E	47	±10%	AC250V/AC500V	8.0	5.5	10±1.0	0.60±0.1
5SL560KT402*#6E	56	±10%	AC250V/AC500V	8.0	5.5	10±1.0	0.60±0.1
5SL680KT402*#6E	68	±10%	AC250V/AC500V	9.0	5.5	10±1.0	0.60±0.1
5SL820KT402*#6E	82	±10%	AC250V/AC500V	10.0	5.5	10±1.0	0.60±0.1
5SB100KT402*#6E	10	±10%	AC250V/AC500V	7.5	5.5	10±1.0	0.60±0.1
5SB150KT402*#6E	15	±10%	AC250V/AC500V	7.5	5.5	10±1.0	0.60±0.1
5SB180KT402*#6E	18	±10%	AC250V/AC500V	7.5	5.5	10±1.0	0.60±0.1
5SB220KT402*#6E	22	±10%	AC250V/AC500V	7.5	5.5	10±1.0	0.60±0.1
5SB330KT402*#6E	33	±10%	AC250V/AC500V	8.0	5.5	10±1.0	0.60±0.1
5SB470KT402*#6E	47	±10%	AC250V/AC500V	8.0	5.5	10±1.0	0.60±0.1
5SB560KT402*#6E	56	±10%	AC250V/AC500V	8.0	5.5	10±1.0	0.60±0.1
5SB680KT402*#6E	68	±10%	AC250V/AC500V	9.0	5.5	10±1.0	0.60±0.1
5SB820KT402*#6E	82	±10%	AC250V/AC500V	10.0	5.5	10±1.0	0.60±0.1
5SB101KT402*#6E	100	±10%	AC250V/AC500V	7.5	5.5	10±1.0	0.60±0.1
5SB151KT402*#6E	150	±10%	AC250V/AC500V	7.5	5.5	10±1.0	0.60±0.1
5SB221KT402*#6E	220	±10%	AC250V/AC500V	7.5	5.5	10±1.0	0.60±0.1
5SB271KT402*#6E	270	±10%	AC250V/AC500V	8.5	5.5	10±1.0	0.60±0.1
5SB331KT402*#6E	330	±10%	AC250V/AC500V	8.5	5.5	10±1.0	0.60±0.1
5SB391KT402*#6E	390	±10%	AC250V/AC500V	9.0	5.5	10±1.0	0.60±0.1
5SB471KT402*#6E	470	±10%	AC250V/AC500V	9.0	5.5	10±1.0	0.60±0.1
5SB561KT402*#6E	560	±10%	AC250V/AC500V	10.0	5.5	10±1.0	0.60±0.1
5SB681KT402*#6E	680	±10%	AC250V/AC500V	10.0	5.5	10±1.0	0.60±0.1
5SB821KT402*#6E	820	±10%	AC250V/AC500V	11.5	5.5	10±1.0	0.60±0.1
5SB102KT402*#6E	1000	±10%	AC250V/AC500V	12.5	5.5	10±1.0	0.60±0.1
5SB152KT402*#6E	1500	±10%	AC250V/AC500V	16.5	5.5	10±1.0	0.60±0.1
5SB222KT402*#6E	2200	±10%	AC250V/AC500V	18.5	5.5	10±1.0	0.60±0.1
5SE102MT402*#6E	1000	±20%	AC250V/AC500V	8.5	5.5	10±1.0	0.60±0.1
5SE152MT402*#6E	1500	±20%	AC250V/AC500V	10.0	5.5	10±1.0	0.60±0.1
5SE222MT402*#6E	2200	±20%	AC250V/AC500V	11.5	5.5	10±1.0	0.60±0.1
5SE332MT402*#6E	3300	±20%	AC250V/AC500V	13.5	5.5	10±1.0	0.60±0.1
5SE472MT402*#6E	4700	±20%	AC250V/AC500V	15.5	5.5	10±1.0	0.60±0.1
5SF102MT402*#6E	1000	±20%	AC250V/AC500V	7.5	5.5	10±1.0	0.60±0.1
5SF152MT402*#6E	1500	±20%	AC250V/AC500V	8.5	5.5	10±1.0	0.60±0.1
5SF222MT402*#6E	2200	±20%	AC250V/AC500V	9.0	5.5	10±1.0	0.60±0.1
5SF332MT402*#6E	3300	±20%	AC250V/AC500V	11.5	5.5	10±1.0	0.60±0.1
5SF472MT402*#6E	4700	±20%	AC250V/AC500V	12.5	5.5	10±1.0	0.60±0.1

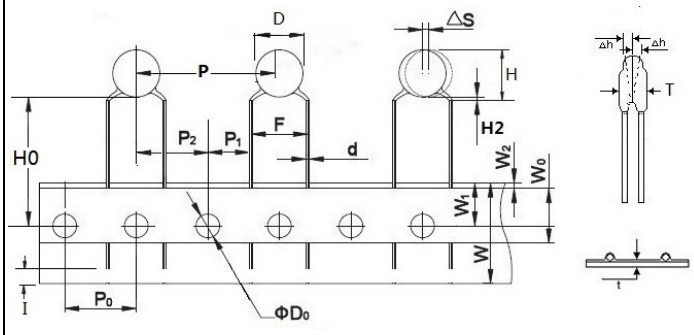
三、線型尺寸 (Figures & Dimension)

3.1 散裝線型(Bulk pack lead style)

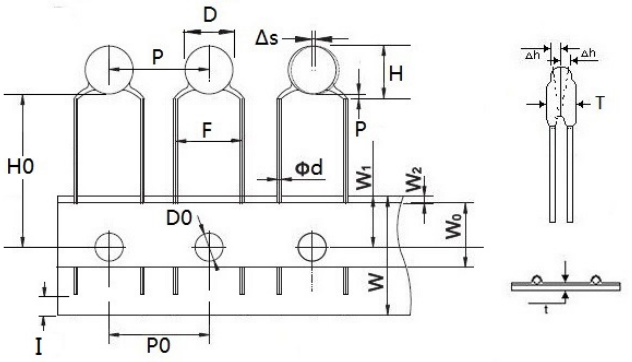
<table>
<tr><td>A→直腳長腳(Straight long)
 
</td><td>H→直線短腳(Straight short)
 
</td><td>D
T
F
d
H
P
L</td><td>See page 5
See page 5
See page 5
See page 5
D+P
3.0mm max
Straight long:18mm min
Straight short: 3.5±0.5mm or The customer request</td></tr>
<tr><td>J→外彎長腳(Outside crimped long)
 
</td><td>D→外彎短腳(Outside crimped short)
 
</td><td>D
T
F
d
P
H2
L</td><td>See page 5
See page 5
See page 5
See page 5
Not exceed the kink leads for kink lead
4.8mm max
long:18mm min
short: 3.5±0.5mm or The customer request</td></tr>
<tr><td colspan="4">E→一字形腳(Vertical crimped)</td></tr>
<tr><td> 
</td><td> 
</td><td>D
T
F
d
P
H2
L</td><td>See page 5
See page 5
See page 5
See page 5
Not exceed the kink leads for kink lead
4.8mm max
long:18mm min
short: 3.5±0.5mm or The customer request</td></tr>
</table>

3.2 編帶說明 (Taping pack lead style)

3.2.1 直線編帶(Straight)



P0=12.7mm（Lead shape code：S）

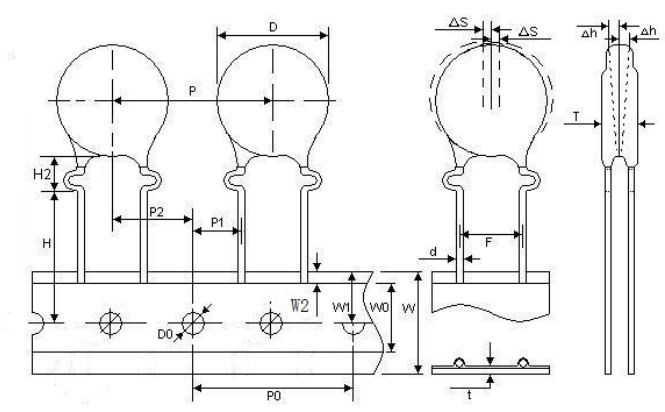


P0=15.0mm（Lead shape code：T）

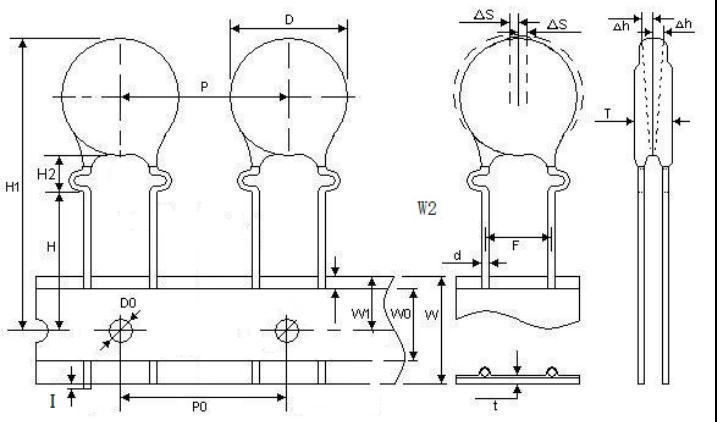
單位(unit)：mm

位置代字 (Symbol)	標示位置 (Item)	Dimensions(mm)	
		PO=12.7	PO=15.0
F	零件之腳距 Lead to lead distance	10±1	
P	零件間距離 Pitch of component	25.4±1.0	15±1.0
P0	定位孔距離 Feed hole pitch	12.7±0.3	15±0.3
P1	定位孔中心與導線中心距離 Feed hole center to lead center	7.7±0.7	/
P2	定位孔中心與本體中心之距離 Feed hole center to body center	12.7±1.3	/
△s	零件本體左右偏移 Component alignment R-L	0±2	
△h	零件前后偏移 Deviation across tape		
W	紙帶寬度 Tape width	18.0±1.0	
W0	固定膠帶寬度 Hold down tape width	7.5min	
W1	定位孔中心距紙帶上沿距離 Hold position	9.0±0.75	
W2	固定膠帶上沿到紙帶上沿距離 Hole down tape position	5.0max	
H	定位孔中心至本體底部距離 Height of component from tape center	20.0 +1.5/-1.0	
H2	涂裝腳長度 Dip Length	3.0max	
D0	定位孔直徑 Feed hole diameter	4.0±0.2	
t	紙帶總厚度 Total tape thickness	0.6±0.3	
d	引線直徑（Lead diameter）	See page5	
D	外徑(Body Diameter)		
T	厚度(Body Thickness)		

3.2.2 外彎編帶(Outside crimped)



P0=12.7mm（Lead shape code：N）



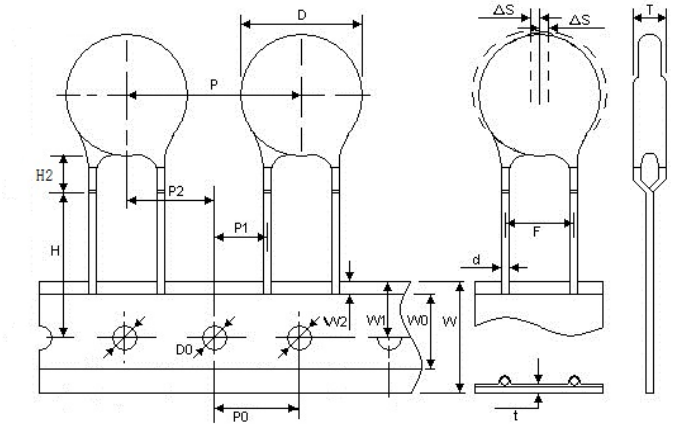
PO=15.0mm（Lead shape code：B）

單位(unit)：mm

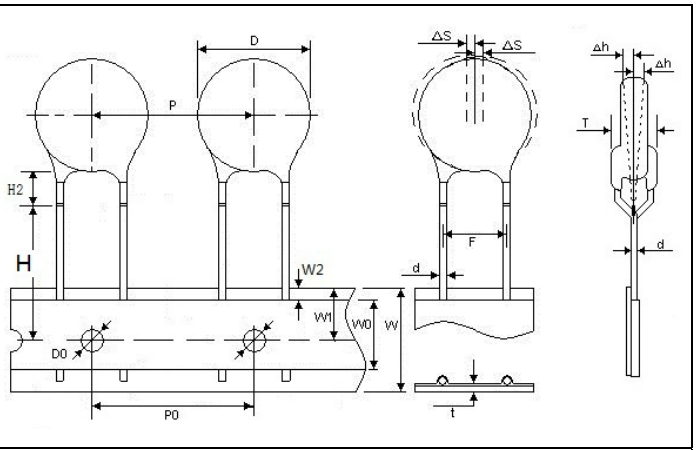
位置代字 (Symbol)	標示位置 (Item)	Dimensions(mm)	
		P0=12.7	P0=15.0
F	零件之腳距 Lead to lead distance	10±1	
P	零件間距離 Pitch of component	25.4±1.0	15±1.0
P0	定位孔距離 Feed hole pitch	12.7±0.3	15±0.3
P1	定位孔中心與導線中心距離 Feed hole center to lead center	7.7±0.7	/
P2	定位孔中心與本體中心之距離 Feed hole center to body center	12.7±1.3	/
△s	零件本體左右偏移 Component alignment R-L	0±2	
△h	零件前后偏移 Deviation across tape		
W	紙帶寬度 Tape width	18.0±1.0	
W0	固定膠帶寬度 Hold down tape width	7.5min	
W1	定位孔中心距紙帶上沿距離 Hold position	9.0±0.75	
W2	固定膠帶上沿到紙帶上沿距離 Hole down tape position	5.0max	
H	定位孔中心至本體底部距離 Height of component from tape center	16±0.5	
H2	導線折彎處到本體底部 Height of kink	4.8 max	
D0	定位孔直徑 Feed hole diameter	4.0±0.2	
t	紙帶總厚度 Total tape thickness	0.6±0.3	
d	引線直徑（Lead diameter）	See page5	
D	外徑(Body Diameter)		
T	厚度(Body Thickness)		

注：涂裝腳長度 Dip Length：不超過引線折彎處 Not exceed the kink leads for kink lead

3.2.3 一字腳（E）形腳編帶(Vertical crimped taping)



P0=12.7mm（Lead shape code：M）



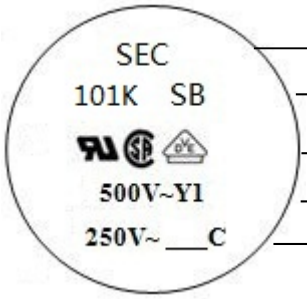
P0=15.0mm（Lead shape code：R）

位置代字 (Symbol)	標示位置 (Item)	Dimensions(mm)	
		P0=12.7	P0=15.0
F	零件之腳距 Lead to lead distance	10±1	
P	零件間距離 Pitch of component	25.4±1.0	15±1.0
P0	定位孔距離 Feed hole pitch	12.7±0.3	15±0.3
P1	定位孔中心與導線中心距離 Feed hole center to lead center	7.7±0.7	/
P2	定位孔中心與本體中心之距離 Feed hole center to body center	12.7±1.3	/
△s	零件本體左右偏移 Component alignment R-L	0±2	
△h	零件前后偏移 Deviation across tape		
W	紙帶寬度 Tape width	18.0±1.0	
W0	固定膠帶寬度 Hold down tape width	7.5min	
W1	定位孔中心距紙帶上沿距離 Hold position	9.0±0.75	
W2	固定膠帶上沿到紙帶上沿距離 Hole down tape position	5.0max	
H	定位孔中心至本體底部距離 Height of component from tape center	16±0.5	
H2	導線折彎處到本體底部 Height of kink	4.8 max	
D0	定位孔直徑 Feed hole diameter	4.0±0.2	
t	紙帶總厚度 Total tape thickness	0.6±0.3	
d	引線直徑（Lead diameter）	See page5	
D	外徑(Body Diameter)		
T	厚度(Body Thickness)		

注：涂裝腳長度 Dip Length：不超過引線折彎處 Not exceed the kink leads for kink lead

四、 標印說明 (Marking Explain)

4.1 圖樣（pattern）

等級(Type)	Pattern	說明（Explain）
Y1 TYPE		Logo Mark Rated Cap./Tol. /Temp. Safety Standard/Recognized Rated Voltage/Class Rated Voltage/Date code / China factory

4.2 安規標誌(Safety logo) :標印 01～03 或由客戶指定(Marking 01～03 or for user)

01	02	03	04	05	06
					
UL	CSA	VDE	ENEC	CQC	K MARK

4.3 生產周期表示（Date code the said）

4.3.1 生產年份代碼(Production code for the years)

年份(Years)	2013	2014	2015	2016	2017	2018	2019	2020	.....
代碼（Code）	3	4	5	6	7	8	9	0	.....

4.3.2 生產之周期代碼(Production code for the week)

周(Week)	The first week	The second week	The third week	The fourth week	……
代碼（Code）	01	02	03	04	……

4.3.3 示例：

3 48	
2013 年（In 2013’）	第 48 周（48 weeks）

4.4 溫度特性標印方法(**Temperature characteristic marking code)**

標印代碼 **Mark code**	**SB**	**SE**	**SF**	**SL**
溫度特性 **Temp. char.**	**Y5P**	**Y5U**	**Y5V**	**SL**

五． 安規認證標準及相關內容說明（**Safety standards approval and recognized no.**）

Safety Standard	Class	Rated Voltage	TYPE	Recognized No.
UL	X1 Y1	AC250V OR AC500V	SB/SE/SF/SL	E114280
VDE	X1 Y1	AC250V OR AC500V	SB	40020001
	X1 Y1	AC250V OR AC500V	SE	40020002
	X1 Y1	AC250V OR AC500V	SF	40019457
	X1 Y1	AC250V OR AC500V	SL	40019465
ENEC	X1 Y1	AC250V OR AC500V	SB	40037221
	X1 Y1	AC250V OR AC500V	SE	40037211
	X1 Y1	AC250V OR AC500V	SF	40040181
	X1 Y1	AC250V OR AC500V	SL	40039623
CSA	X1 Y1	AC250V~AC500V	SB	2169507(LR82827)
	X1 Y1	AC250V~AC500V	SE	1369955(LR82827）
	X1 Y1	AC250V~AC500V	SF	1819542(LR82827)
	X1 Y1	AC250V~AC500V	SL	1819266(LR82827)
CQC	Y1	AC250V	SB	CQC02001001788
	X1 Y1	AC250V/AC500V		CQC13001097405
	Y1	AC250V	SE	CQC02001001788
	X1 Y1	AC250V/AC500V		CQC13001097395
	Y1	AC500V	SF	CQC09001036642
	X1 Y1	AC250V/AC500V	SL	CQC09001036641
KTL	X1 Y1	AC250V	SB	SU03009-3001B
	X1 Y1	AC250V	SE	SU03009-3002B
	Y1	AC250V	SL	SU03009-14001

六．外觀及電氣特性（Appearance &Electronic Characteristics）

6.1 外观尺寸检查（Appearance and dimension）

元件表面清洁，无异物附着，标志清晰，无可见损伤，尺寸符合规定要求
（Clean surface, marking shall be legible, no visible damage. Dimension according to ordain requirement）

6.2 靜電容量(Capacitance)

類別(Type)	測量频率（Test Frequency）	測量电压(Test Voltage)	判定標準（Standard）
SB(Y5P)/ SE(Y5U)/ SF(Y5V)	1KHz±20%	1±0.2Vrms	在允许的偏差等级范围内 To be within the specified tolerance.
SL	1MHz±20%	1±0.2Vrms	

6.3 品質因素或損失角（Quality Factor or Dissipation Factor）

類別(Type)	測量频率（Test Frequency）	測量电压(Test Voltage)	判定標準(Standard)
SB(Y5P)/SE(Y5U)	1KHz±20%	1±0.2Vrms	DF:2.5％max.
SF(Y5V)			DF:5.0% max
SL	1MHz±20%	1±0.2Vrms	<30pF Q≧400+20×C (pF) ≧30pF Q>1000

6.4 絕緣阻抗(Insulation Resistance)

測量電壓（Test Voltage）	測試時間（Test Time）	判定標準（Standard）
DC500V	60±3s	10GΩ min.

6.5 耐壓(Dielectric Withstand Voltage)

類別(Type)	測試電壓(Test Voltage)	測試時間（Test Time）	判定標準(Standard)
端子間 Between Lead Wires	AC4000V	60S	No breakdown
端子與外殼間 Body Insulation	将电容器的引线连在一起，主体外紧包一层金属箔，边沿距引线 3-4mm，在电容器引线和金属箔间施加 AC4000V 电压一分钟。（The terminals of the capacitor shall be connected together, A metal foil shall be closely wrapped around the body of the capacitor to the distance of about 3-4 mm from each terminal, A voltage of AC4000V is applied between the capacitor lead wires and the metal balls for 1 min）		No breakdown

注意(Caution):

1、批量生產時測試時間為 1~5 秒鐘(Test 1~5seconds for lot production)

2、測試環境（The test environment）

除非另有說明，測試應在下列條件下完成(Unless otherwise specified, test and measurement shall be made at the standard conditions）

溫度（Temperature）	相對濕度(Humidity)	標準气压（atmospheric pressure）
15～35℃	45～85%	86～106kPa

当测试结果有争议时，仲裁标况为：（If the validity of measurement value determined under the standard condition is questioned or if there occurs a special need of evaluating the test results, capacitors shall be tested and measured at the determinant ambient conditions:

溫度（Temperature）	相對濕度(Humidity)	標準气压（atmospheric pressure）
25±1℃	48～52%	86～106kPa

七.信賴性試驗（Reliability Test）

7.1 端子強度 – 抗拉強度(Terminal Strength－Tensile Strength)

測試條件(Test condition)	判定標準(Standard)
固定待測電容器本體,在引線垂直方向施加 1 公斤拉力,持續 10±1 秒。 (Fix the capacitor body, apply the force gradually to each lead in the radial direction of the capacitor until reaching 1.0 kg and than keep applied the force 10+/-1s.)	端子無損傷或斷裂。 Termination not to be broken or loosened。

7.2 端子強度 – 抗彎折強度(Terminal Strength － Bending Strength)

測試條件(Test condition)	判定標準(Standard)
在引線端施加 0.5 kg力,朝一方向做 90°角彎折後回到原點,再向另一方做 90°角彎折並再折回原點,每個彎折時間約 2～3 秒, 共做兩個循環。 (Each lead wire shall be subjected to a force of 0.5 kg and then be bend 90° at the point of egress in one direction, Each wire is then returned to the original position and bend per 2～3 seconds, two time.)	端子無損傷或斷裂。 Termination not to be broken or loosened。

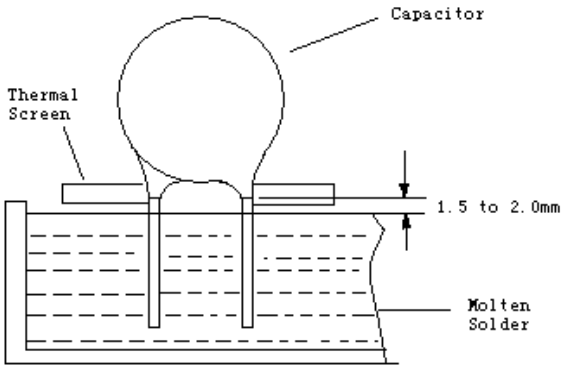
7.3 銲錫附著性(Solder Ability)

測試條件(Test condition)	判定標準(Standard)
銲錫溫度(Solder temp.) :245±5℃ 銲錫時間(Solder time) : 3±0.5s	銲錫覆蓋面積須達 75％以上。 (Lead wire should be soldered With uniformly coated on the axial direction over 75% of the circumferential direction.)

7.4 溫度特性(Temperature Characteristics)

測試條件(Test condition)	判定標準(Standard)		
以 25℃為基準溫度,測得最低與最高溫度,加以計算取得。 The change of capacitor should be got from the capacitor at 25℃, After capacitor measured from Min. Temp. to Max. Temp. it should be calculated from the formula below . SB/SE/SF: TC= (C2-C1)/C1×100％ SL：TC(PPM/℃)= [（C2-C1）*10^6]/[C1(T2-T1)] C1 : Capacitance at standard temperature (25℃). C2 : Capacitance at each temperature. T1: Test temperature（Min. Temp. and Max. Temp.） T2: Reference temperature	類型 Type	溫度范圍 Temperature Range	容量變化率 MAX. CAP. CHANGE
	SB(Y5P)	-30～+85℃	±10％
	SE(Y5U)	-30～+85℃	+22～-56％
	SF(Y5V)	-30～+85℃	+22～-82％
	SL	25~85℃	+350~ -1000PPM/℃

7.5 銲錫耐熱性(Resistance To Soldering Heat)

測試條件(Test condition)	判定標準(Standard)
如圖所示：将引线浸泡在260±5℃的焊料中，其深度为距端子根部1.5至2.0mm处; 焊錫時間：10±1秒 初次测量之前，将电容器存放在85±2℃条件下1小时。然后，在室内条件下存放24±2小时。 后处理:将电容器在室内条件下存放1至2小时。 Solder temperature 260±5℃ The depth of immersion shall be a position 1.5~2.0mm from the seating plane, using a thermal insulation screen of 1.5±0.5mm thickness. solder time 10±1s Pre-treatment Capacitor shall be stored at 85±2℃ for 1 hour, then placed at room condition for 24±2 hour before initial measurements . Post-treatment Capacitor shall be stored for 1 to 2 hours at room condition.	外觀(Appearance) : 無損傷(No damage) 靜電容量變化率(Change from the value before) SB(Y5P):±5.0％ SE（Y5U）:±15％ SF（Y5V）:±20％ SL :±5.0% 耐壓(Dielectric Withstand Voltage):AC4KV*3S 

7.6 冷熱衝擊（Thermal Shock Test）

測試條件(Teat condition)	判定標準(Standard)
電容器應承受5次溫度循環測試，下表1~4為一個循環， The capacitor should be subjected to 5 temperature cycles.1 ~ 4 for a cycle <Temperature cycle> 序號Step / 溫度Temperature(℃) / 時間Time 1 / -40±3 / 30min 2 / Room Temp. / ＜5min 3 / -125±3 / 30min 4 / Room Temp. / ＜5min Remove and let sit 24±2 hour at room temperature.	外觀(Appearance) :No mechanical damage 靜電容量變化率(Capacitance change): SB(Y5P) :±10％ SE(Y5U) : ±20％ SF(Y5V) : ±30％ SL :±5.0% 品質因素或損失角（Quality Factor or Dissipation Factor） : SB(Y5P) /SE(Y5U) :5.0％max SF(Y5V):7.5% max SL: ＜10 pF Q≧200+10C(pF) ≧10 pF ＜30 pF Q≧275+2.5C(pF) ≧30 pF Q≧350 絕緣阻抗(Insulation resistance) :1000MΩ min. 耐壓(Dielectric strength) :AC4KV*3S

7.7 耐濕性試驗(Humidity Test)

測試條件(Test condition)	判定標準(Standard)
預处理(Pre-treatment): Capacitor shall be stored at 125±3℃ for 1 hour, then placed at room condition for 24±2 hour before initial measurements . 試驗環境溫度(Ambient temperature) :40+/-2℃ 試驗環境濕度(Relative humidity) :90～95％R.H. 試驗時間(Duration) :500+24 / -0 hrs. 后处理(Post-treatment): Capacitor shall be stored for 1 to 2 hours at room condition..	外觀(Appearance) :No mechanical damage
	靜電容量變化率(Capacitance change) : SB(Y5P) :±10％ SE(Y5U) : ±20％ SF(Y5V) : ±30％ SL :±5.0%
	品質因素或損失角（Quality Factor or Dissipation Factor） : SB(Y5P) /SE(Y5U) :5.0％max SF(Y5V):7.5% max SL: ＜10 pF Q≧200+10C(pF) ≧30 pF Q≧350 ≧10 pF ＜30 pF Q≧275+2.5C(pF)
	絕緣電阻(I.R.) :1000MΩ min.
	耐壓(Dielectric strength) : AC4KV*3S

7.8 耐濕負荷試驗 (Humidity Loading Test)

測試條件(Test condition)	判定標準(Standard)
預处理(Pre-treatment): Capacitor shall be stored at 125±3℃ for 1 hour, then placed at room condition for 24±2 hour before initial measurements . 試驗環境溫度(Ambient temperature) :40+/-2℃ 試驗環境濕度(Relative humidity) :90～95％R.H. 負荷電壓(Loading voltage) : Rated voltage 試驗時間(Duration) :500+24 / -0hrs. 后处理(Post-treatment): Capacitor shall be stored for 1 to 2 hours at room condition.	外觀(Appearance) : No mechanical damage
	靜電容量變化率(Capacitance change) : SB(Y5P) :±10％ SE(Y5U) : ±20％ SF(Y5V) : ±30％ SL :±7.5%
	品質因素或損失角（Quality Factor or Dissipation Factor） : SB(Y5P) /SE(Y5U) :5.0％max SF(Y5V):7.5% max SL: ＜10 pF Q≧200+10C(pF) ≧30 pF Q≧350 ≧10 pF ＜30 pF Q≧275+2.5C(pF)
	絕緣電阻(I.R.) :500 MΩ min.
	耐壓(Dielectric strength) : AC4KV*3S

7.9 高溫負荷試驗(High Temperature Load Exposure)

測試條件(Test condition)	判定標準(Standard)
預处理(Pre-treatment): Capacitor shall be stored at 125±3℃ for 1 hour, then placed at room condition for 24±2 hour before initial measurements . 試驗環境溫度(Ambient temperature) : 125+/-2℃ 負荷電壓(Loading voltage) :150％ Rated voltage 試驗時間(Duration) :1000+48 /-0 hrs. 后处理(Post-treatment): Capacitor shall be stored for 1 to 2 hours at room condition.	外觀(Appearance) :No mechanical damage
	靜電容量變化率(Capacitance change) : SB(Y5P) :±10％ SE(Y5U) : ±20％ SF(Y5V) : ±30％ SL :±3.0%
	品質因素或損失角（Quality Factor or Dissipation Factor） : SB(Y5P) /SE(Y5U) :5.0％max SF(Y5V):7.5% max SL: ＜10 pF Q≧200+10C(pF) ≧30 pF Q≧350 ≧10 pF ＜30 pF Q≧275+2.5C(pF)
	絕緣電阻(I.R.) :1000MΩ min.
	耐壓(Dielectric strength) : AC4KV*3S

7.10 振動實驗（Vibration Resistance）

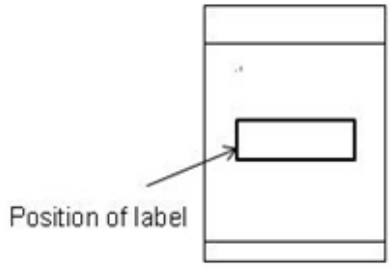
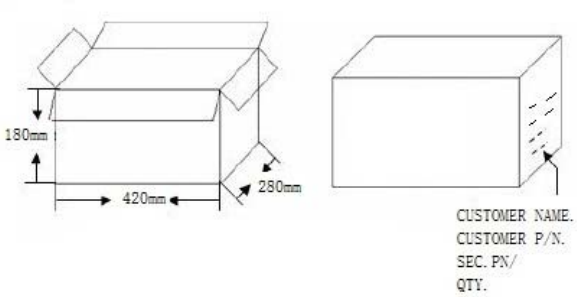
試驗方法（Testing Method）	判定標準(Standard)
將電容器導線焊穩和調整振動頻率為 10-55Hz 總振幅為 1.5mm,振動從 10Hz 到 55Hz,然後再回到 10,大約一分鐘.(The capacitor should be soldered to the supporting lead wire and vibrated at a frequency range of 10 to 55Hz,1.5mm In total amplitude, with about a 1 minute rate of vibration charge from 10Hz to 55Hz and back to 10Hz) 總時間六個小時,每兩個小時在相互垂直方向來回三次 (Apply for a total of 6 hrs,2hrs each In3 mutually perpendicular directions.)	外觀(Appearance):沒有可見損傷(No marked defect) 靜電容量 (Capacitance): Specification values range 品質因素或損失角（Quality Factor or Dissipation Factor） : Specification values range 絕緣阻抗(Insulation resistance) :10000MΩ min 耐壓(Dielectric strength) : AC4KV*3S

7.11 被動可燃性試驗（Passive Flammability）

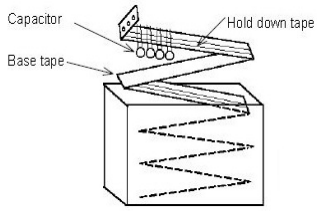
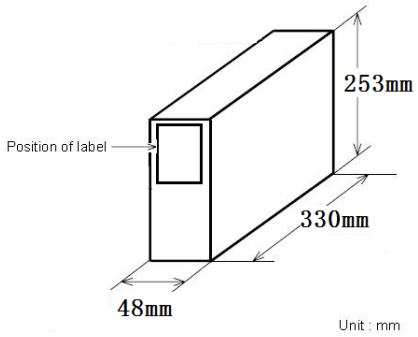
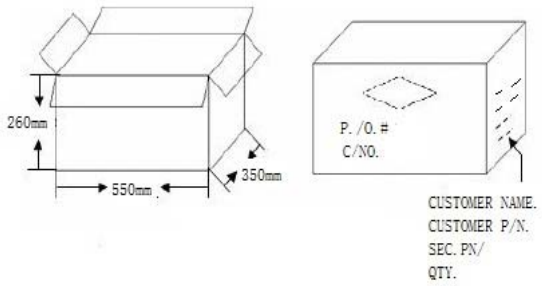
試驗方法（Testing Method）	判定標準(Standard)
测试的电容器应在燃烧效果最佳的位置。每个样品应一次性燃烧。 燃烧时间：30 秒 火焰尺寸：12±1mm 喷烧器：35mm 长 内径: 0.5±0.1mm 外径: 最大 0.9mm 气体 ：纯度 95%以上的丁烷 The capacitor under test shall be held in the position which best promotes burning. Each specimen shall only be exposed once to flame. Time of exposure to flame: 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.	燃烧时间不超过 30 秒。 薄纸不燃烧。 The burning time shall not be exceeded the time 30sec. The tissue paper shall not ignite.

八.包裝說明（packing description）：

8.1 散裝包裝（Bulk）：客戶有要求時依客戶要求（Or according to customer's requirement）

PE 袋（PE BAG）	外箱（OUT-BOX）
	
*****	裝 20~30 袋（20~30 bags）

8.2 編帶盒裝(Ammo)：

內箱說明（IN-BOX state）	內箱（IN-BOX）	外箱（OUT-BOX）
		
***	***	每外箱裝 10 個內箱（OUT-BOX=10*IN-BOX）

8.3 包裝數量（Packing quantity）：

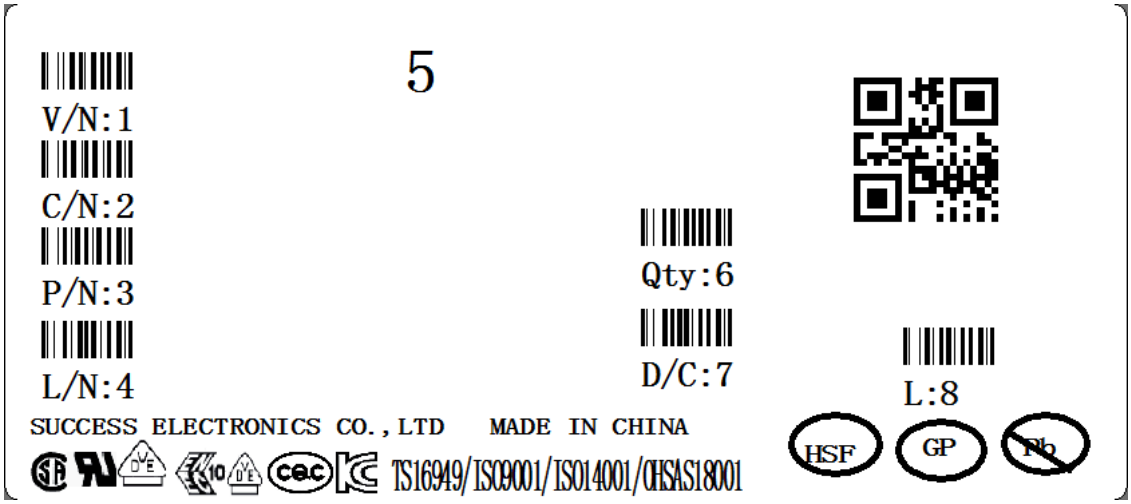
8.3.1 散裝包裝（Bulk）

外徑 Disc diameter（D）	包裝數量（package quantity）
D≦10 ㎜	1000pcs
D＞10 ㎜	500pcs

8.3.2 編帶盒裝(Ammo)

零件腳距(Lead to lead distance)	包裝數量（package quantity）
10.0mm	500pcs
7.5mm/6.35mm	1000pcs

8.4 標簽的內容：The content of the label



8.5 製造國 **country of origin**

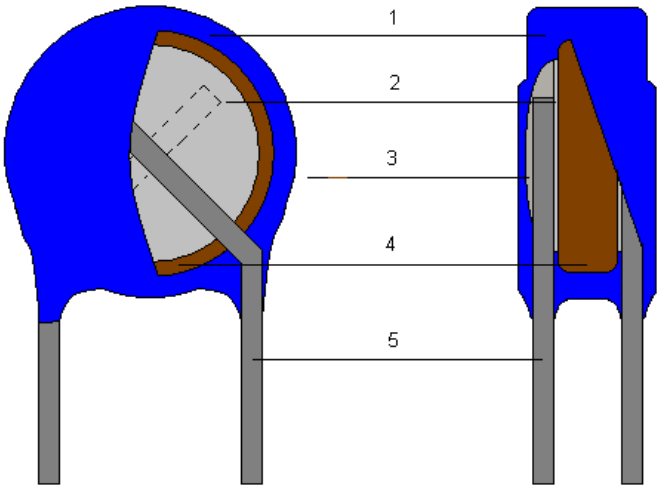
Huizhou ， China.

8.6 生產工場**production factory**

中國廣東省惠州市仲愷高新區潼僑鎮潼僑工業基地新科大道

New tech blvd , Tongqiao industrial Base , Tongqiao Town , Zhongkaigaoxin Dist ,Huizhou City ,Guangdong province , China .

九. 結構說明（structure specification）



1、包封層(Coating)：環氧樹脂(Epoxy Resin) UL94-V0

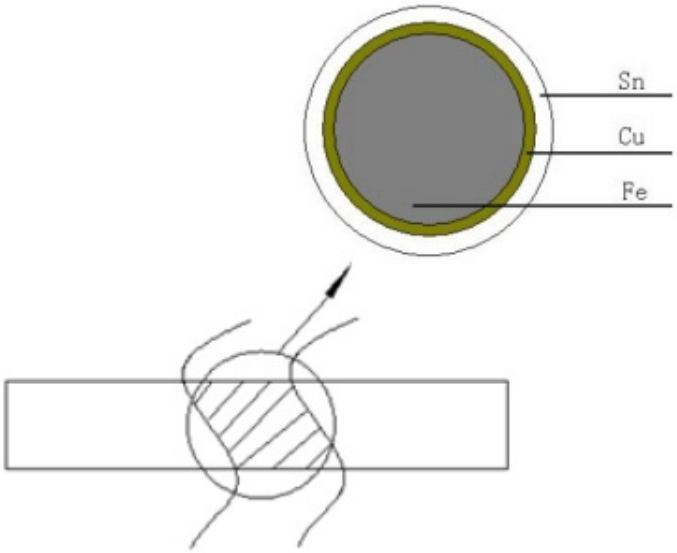
2、電極(Electrode)： 銀(Silver)

3、焊料 (Solder)： 錫(Alloy Tin)

4、介質(Dielectric)： 陶瓷(Ceramic)

5、引線(Lead Wire)： 鍍錫銅包鋼線(Lead)

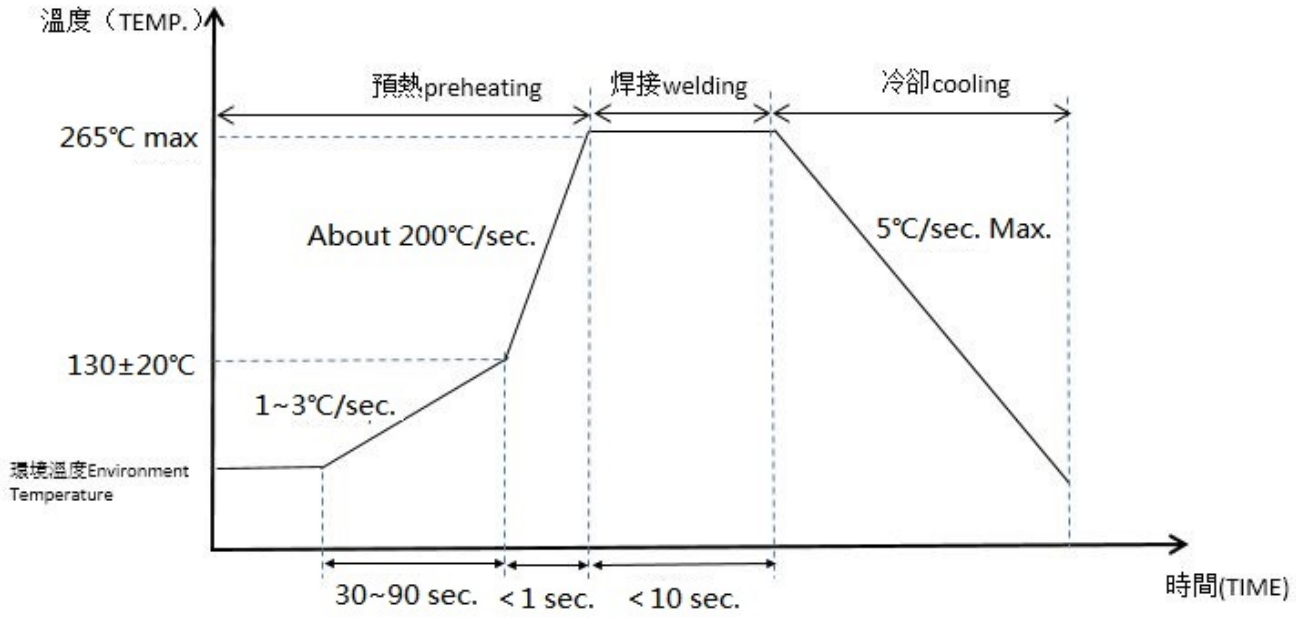
引出線結構(Constituent structure chart of lead)



十．焊接說明Welding according to the instruction

10.1建議波峰焊接條件(Wave soldering condition)：

焊接溫度曲線（Welding temperature curve）



10.2 烙鐵焊接條件(Soldering iron welding)：

烙鐵頭溫度(Solder iron temperature)	400℃max
焊接時間(Welding time)	3.5sec max
烙鐵功率 Soldering iron wattage	50W max.

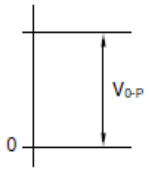
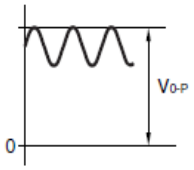
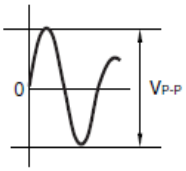
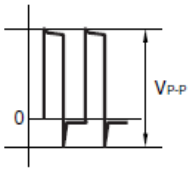
十一. 注意事項 HANDLING PRECAUTIONS FOR CERAMIC CAPACITORS

11.1 使用電壓（Operating voltage）

使用電容器時，端子間施加的電壓應該低于額定電壓。直流電壓上疊加交流電壓時，峰值電壓應該低于額定電壓。用交流電壓或脈衝電壓時，峰電壓也應該低于額定電壓。另外，確認使用的電源設備是不是有可能印加異常電壓（浪涌電壓，靜電，開關突峰電壓），如果產生則異常電壓也應該低于額定電壓（如下圖示）。交流一次側回路時，用于防止雜波的電容器其交流耐壓試驗的實驗條件不能超過規定的條件（電壓、時間、波形）。

Use within the rated voltage of capacitor between terminals. For DC rated voltage application, you should control the peak voltage (Vo-p) under the rated voltage in case the AC voltage is superimposed on the DC voltage. Use within the rate voltage includes peak voltage (Vp-p) when AC voltage or impulse voltage applied in a circuit. Confirm irregular voltage (surge voltage, static electricity, switching noise, etc) occurs in the equipment used, and use within the rated voltage containing the irregular voltage.

When the capacitor is used as a noise suppressor in the AC primary circuit, the voltage proof test should be within the specified conditions (voltage, time, wave form, etc).

Voltage	DC voltage	DC+AC voltage	AC voltage	Pulse voltage
Voltage Measuring position				

11.2 使用溫度(Temperature)

使用時，電容器的表面溫度，包括其自身發熱，必須低於規格書規定的最高使用溫度。

Be sure to use only those operating temperature described in our catalogue or specification. Keep the surface temperature under the maximum temperature, which includes the maximum self-heat temperature.

11.3 自身發熱(Self-exothermal)

在環境溫度 25℃，無冷卻風扇工作的狀態下，自身發熱（電容器的表面溫度與環境溫度的差值）必須在 20℃以下。在連續印加交流電壓或脈衝電壓，電流較大的回路中，更要特別的注意，在連續印加高頻電壓，高頻脈衝電壓的回路中，雖然在額定電壓以下，也有可能影響到信賴性，所以使用時要考慮減輕負荷及自身發熱。

Self-exothermal temperature should be within 20°C on the condition of atmosphere temperature 25°C without the influence of wind such as the cooling fan. Be sure to use a capacitor in a circuit of current increase by AC voltage or pulse voltage applied.

When high frequency voltage or impulse voltage applied in a circuit, reliability should be influenced. Take into considerations the load reduction and self-exothermal temperature, even if voltage should be within the rated voltage.

11.4 電容器的靜電容量變化(Capacitance change of capacitors)

由於使用溫度和施加電壓的不同，電容器的容量有可能發生變化；而且，電容器在放置期間，靜電容量也有可能減少，也就是老化特性。

For some of the capacitors, capacitance value may change considerably in the temperature range, or by applied DC voltage. And capacitor has aging characteristic (capacitance decreases by keeping as it is).

11.5 電容器的振動(Vibration of capacitors)

電容器（種類Ⅱ）在交流回路或者脈衝回路中使用時，由於特定的頻率，電容器本身可能會發生振動，或者發出聲音、噪音。所以在使用之前，請確認能否符合貴司要求。

When the capacitor (class 2) is used in the AC circuit, or pulse circuit, the capacitor might vibrate or noise might occur in the specified frequency. Be sure to confirm the conditions before using the capacitor.

11.6 電容器的使用及保存（保管）(Usage of capacitance and storage)

請不要再以下地方使用電容器(Please do not use capacitors in the following locations.)

★ 日光直射到的地方 （Places where can be shined by direct sunlight）

★ 直接接觸到水及鹽水的地方 （Places where can direct access with water or salt water）

★ 凝結露水的地方 （Places of having dew condensation）

★ 有腐蝕性氣體的地方，如硫化氫、亞硫酸等 Places of having corrosive gases, Such as hydrogen sulfide, sulfuric acid, etc.）

★ 電容器請不要保存在高溫高濕的環境中，而應保存在室溫-10~40℃，濕度75%RH以內的環境中，並在納入後6個月內使用。Capacitors should not be kept in the environment of high temperature and high humidity, and should be kept in the environment where the room temperature between -10 ~ 40 ℃,and the humidity between 75%. Besides, the capacitors should be used within 6 months.

★ 電烙鐵的烙鐵頭不要直接接觸到電容器引腳以外的部位。

Electric soldering iron tip should not directly contact the areas except capacitor lead.

11.7 安裝上的注意點(Inserting precautions)

用自動插件機把電容器插入到基板上時，要確認並管理插件機的安裝條件（推動器壓力，剪切部的調整等），製品拔取，導線剪切時，不要對製品施加過度的衝擊和壓力。電容器的端子間隔要與基板孔的間隔一致。（外力改變導線間距的時候，有可能會損壞導線根部的塗料，如果發生此類的損壞，就有可能導致信賴性下降。）

When inserting capacitors into the PC board by automatic insertion machine, confirm the conditions (such as pressure of pusher, adjustment of clinching portion) and minimize the impact force by chucking the body, or clinching the lead terminals. Distances between the hole position onto a PC board should be equal to the pitch of capacitors. When stretching the lead terminal, any force may load the bottom of the capacitor body and result in damage to the insulation coating. Severe damages may cause poor reliability.

11.8 焊錫(Solder)

★焊錫條件（預熱的溫度及時間，焊錫的溫度及時間）在規格書規定范圍內。

Soldering conditions, such as pre-heat temperature, soldering temperature, and soldering time, should be followed by the descriptions in our catalogue or specification.

★修正作業的時候，要進行充分預熱，並進行溫度管理。

When reworking for soldering, sufficient pre-heating and temperature control should be used.