



東莞市威慶電子有限公司

DONGGUAN WEIQING ELECTRONIC CO., LTD

SPEC NO.:2021121301

REV:B

承認書

SPECIFICATION

客戶名稱(CUSTOMER) : _____

產品名稱(PRODUCT NAME) : _____ MMKP82

承認規格(APPROVE ITEM) : _____ 224J/1000V P=22.5MM L=23MM E4 盒 黃色

威慶料號(WEIQING PART NO.) : _____ C383A224JE4L230A10

客戶料號(CUSTOMER PART NO.) : _____ C20416225

送樣日期(SUBMIT THE SAMPLE DATE) : _____

產品尺寸(PRODUCT SIZE) : _____ W*H*T=26.5*19*10MM

樣品印字(SAMPLE PRINT) : _____ WQC/ MMKP82 /224J1000V

威慶確認表

WEIQING CONFIRM LIST

APPROVED	CHECKED	PREPARED
 BASE	徐進闊	何湘華

客戶承認結果

CUSTOMER ACKNOWLEDGE THE RESULT

地址：中國東莞松山湖高新技術產業開發區科技十路7號12棟

Add: Buiding 12.No.Tenth Road of Science&Technolgy,DongGuan SongShanLake High-tech Industrial Development Zone China

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檔案名稱

MMKP82 Approval Sheet
(Double sided Metallized Polypropylene
Film Capacitor(BOX))

文件編號

WQC-AP-14

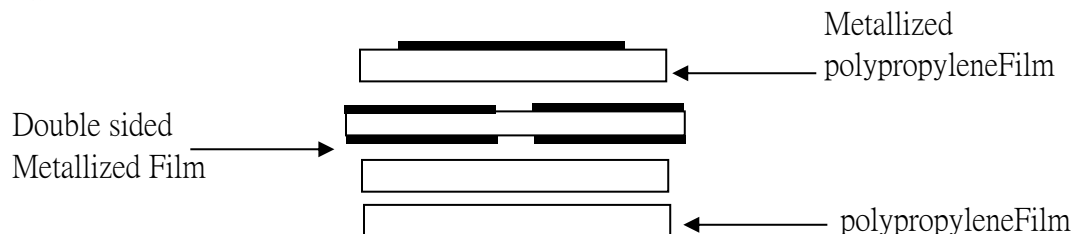
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1. Scope:

This specification applied to capacitor for type MMC(Double sided Metallized Polypropylene Film Capacitor(BOX))

1-1Section View



1-2 case:Flame-retardantPBT(UL94V-0) ,Epoxy resin coating (UL 94 V-0)

2. Temperature

2-1 Rated Temperature : 105℃

2-2 Rated Temperature Range : -40 ~ +105 (+85℃ to +105℃ decreasing factor 1.25% per °C for VR(DC))

3. Capacitance Range:

0.0001uF ~ 0.1 uF

4. Capacitance Tolerance:

±2%(G)、±3%(I)、±5%(J)、±10%(K)、±20%(M)

5. Rated Voltage:

630VDC、1000VDC、1250VDC、1600VDC、2000VDC、2500VDC、3000VDC

6. 產品編碼說明 Film Capacitor Part number system

18 位元產品代碼如下 The 18 digits part number is formed as follow:

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

C	3	8	3	A	2	2	4	J	E	4	L	2	3	0	A	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Digit 1~3 Type Code

第 1~3 位 型號代碼

代碼 Code	型號 Type	代碼 Code	型號 Type	代碼 Code	型號 Type	代碼 Code	型號 Type
C11	CL11	C30	CBB20				
C12	CH11	C31	CBB21				
C20	CL20	C32	CBB22				
C21	CL21	C33	CBB23				
C22	CL21X	C34	CBB81				
C23	CL23	C38	MMKP82				
C24	CL23B						



東莞市威慶電子有限公司

製作日期

2015-10-28

版本

04

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型號代碼說明

代碼 Code	型號 TYPE	備註 NOTS
滌綸電容 Polyester film inductive Capacitors		
C11	PEI(CL11)	PEI(CL11)聚乙脂薄有感電容器
C12	PPI(CH11)	PPI(CH11)聚丙烯膜有感電容器
聚酯膜電容器 Polyester Capacitors		
C20	CL20	CL20(MET/A)金屬化聚乙脂膜(軸向)電容器(扁形/圓形)
C21	CL21	CL21(MEF)金屬化聚乙脂膜電容器
C22	CL21X	CL21X(MEM)小型金屬化聚乙脂膜電容器 腳距 5mm
C23	CL23	CL23(MEC)金屬化聚乙脂膜(盒裝)電容器
C24	CL23B	CL23B(MEB)小型金屬化聚乙脂(盒裝)電容器 Mini Box 腳距 5mm
聚丙烯膜電容器 Polypropylene Capacitors		
C30	CBB20	CBB20(MET/A)金屬化聚丙烯膜(軸向)電容器(扁形/圓形)
C31	CBB21	CBB21 (MPP)金屬化聚丙烯膜電容器
C32	CBB22	CBB22 (MPP、 DMP)金屬化聚丙烯膜電容器
C33	CBB23	CBB81 (MPC)金屬化聚丙烯膜(盒裝)電容器
C34	CBB81	CBB81 (PPS)PPS 無感箔式高壓電容器
C38	MMKP82	双面金属化聚丙膜谐振电容器

Digit 4~5 Rated Voltage Code

第 4~5 額定電壓代碼

	A	B	C	D	E	F	G	H	J	K	L	M	N
1			16	20				50	63			1100	
2	100	125	160	200	250	315	400	500	630	800	120		
3	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	1200	1400	
	P	Q	R	S	T	U	V	W	X	Y			
1	240	300	330	440	540	600	700	850	900				
2	275	305	350	450	520		760						
3	280	310		480									

說明：參考日本 JIS 標準，字母加數位元表示交流，數位元加字母表示直流，例如 A2 表示 100VAC，2A 表示 100VDC .Explanation:Refer to JIS standard,Letter and then number indicate AC,but number and then Letter indicate DC,for example,2A indicate 100VDC,A2 indicate 100VAC.

Digit 6~8 Capacitance Expressed in 3-digit code 3 Code

第 6~8 容值代碼

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The first 2digits indicate significant figures,and the third digit specifies the number of zero to follow.

前兩位表示基數，第三個數位表示其後零的個數

This gives the capacitance in picofarads.容量值單位元為皮法

For examples 舉例：

102=10*102PF=1,000PF=1.0nF=0.001uF 105=10*105PF=1,000,000PF=1000nF=1uF

Digit 9 Capacitance Tolerance Code

第 9 容量偏差代碼

公差 Tolerance	±1%	±2%	±3%	±5%	±10%	±20%	+80%/-20%
代碼 Code	F	G	H	J	K	M	Z

Digit 10~11 Box Case No. Or Pitch expressed by Case two digits Code

第 10~11 盒體或兩個數位的腳距代碼

Box Type 盒裝型

Pitch 腳距	7.5	10	12.5	15	20	22.5	27.5	37.5	42.5	55
Case No. 殼體代碼	B*	C*	G*	D*	S*	E*	F*	J*	K*	P*

Powder Coating Type 粉塗型

Pitch 腳距	2.5	5.0	7.5	10	15	20	22.5	27.5
Case No. 腳距代碼	02	05	07	10	15	20	22	27

Axial Type 軸向型

Code 代碼	Axial Type 軸向型
A1	軸向橢圓形
A2	軸向圓形

Digit 12 Lead Form Code

第 12 引線加工型代碼

Lead Type

Code 代碼	L	H	K	N	M	T	S
Lead Type 引線型式	長腳	短腳	內彎青蛙腳	內彎直腳	外彎直腳	Taping	Customer Special Require

Digit 13~14 Lead Length(Straight) and Tolerance of Lead Length(straight): Expressed in 3-Letter Code

第 13~15 引線長度和偏差以 3 個數位代碼表示

Example 舉例：Code 代碼 035:35/10=3.5mm 230:230/10=23mm

Digit 16~18 Internal use packing\material group\place of production\ product grade\Environmental Protection(EP)

Class (Halogen-Free Compliant ROHS Compliant) Code

第 16~18 內部特徵碼

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No	Test items	Performance	Test Method
7-1	Withstand voltage (Between Terminals)	Shall be no abnormality	150% Of Rated Voltage, 60sec.
	Between terminal and Enclosure	Shall be no abnormality	UR×200%+1000VDC, 60sec.
7-2	Insulation resistance (Between Terminals)	$IR \geq 15,000M \Omega$	Measured at $100 \pm 15VDC$, For 60sec / $25^{\circ}C$
7-3	Capacitance	Within the tolerance specified	1KHz, 1Vrms Max. at $25^{\circ}C$
7-4	Dissipation Factor	0.001 (0.1%) Max.	1KHz, 1Vrms Max. at $25^{\circ}C$
7-5	Tense Strength of Terminal	No wire breakage and No Damage of Capacitor	1. Load Force : 1.0 Kg 2. Holding Time : $10 \pm 1sec$
7-6	Bending Strength of Terminal	No wire breakage and No Damage of Capacitor	1. Load Force : 0.5 Kg 2. Bending Time : $4 \times 90^{\circ}$ in 5sec
7-7	Solder-ability	1. Appearance : No Visible Damage 2. Covering an area of > solder 95%	Soldering Peocess 1.Capacitor preheating temperature of $T < 120^{\circ}C$ 2.Preheating time capacitor $t < 5$ min Single wave soldering 1.Solder temperature: $270 \pm 5^{\circ}C$ 2.Solder time: $2 \pm 0.5sec$
7-8	Heat Shock test	(1) Appearance : No Visible Damage (2) Withstand Voltage : Normal (3) Capacitance Change : $\leq \pm 3\%$ of The Initial Value	The terminal of capacitor shall be immersed in the melting solder. a. Solder temperature: $270 \pm 5^{\circ}C$ b. Solder time: $3 \pm 0.5sec$ c. Test Voltage: 100% of The Rate Voltage For 1min.

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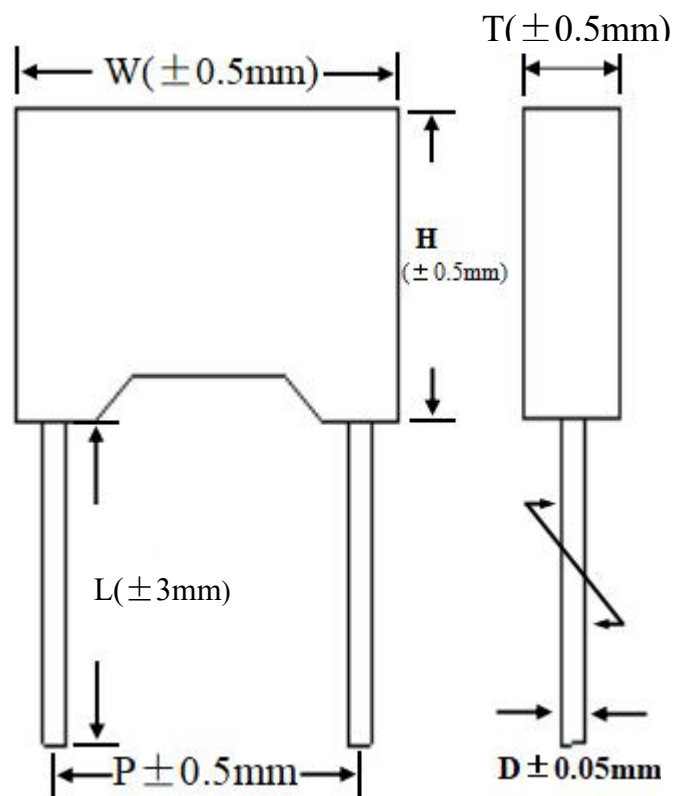
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No	Test items	Performance	Test Method
7-9	Cold Resistance	(1) Appearance : No Visible Damage (2) Capacitance Change : $\leq 0\sim -10\%$ of The Initial Value	a. Test Temperature: -40°C b. Test Times: 2Hrs
7-10	Dry Heat Resistance	(1) Appearance : No Visible Damage (2) Withstand Voltage : Normal (3) Capacitance Change : $\leq +5\sim -2\%$ Of The Initial Value	a. TEST TEMPERATURE: $105^{\circ}\text{C} \pm 2^{\circ}\text{C}$ b. Test Times: 2Hrs
7-11	Humidity Resistance	(1) Appearance : No Visible Damage (2) Withstand Voltage : Normal (3) Capacitance Change : $\leq \pm 10\%$ of The Initial Value (4) Insulation Resistance: $\geq 50\%$ of the rated value (5) DF ($\tan \delta$) ≤ 0.001	a. TEST TEMPERATURE: $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ b. RELATIVE HUMIDITY: $90 \sim 95\%$ c. Test Times: 240 ± 8 HRS d. TEST VOLTAGE: 125% of The Rated Voltage for 1 min.
7-12	Heat Resistance (Charge & Discharge)	(1) Appearance : No Visible Damage (2) DF ($\tan \delta$) ≤ 0.001 (3) Capacitance Change : $\pm 10\%$ of The Initial Value (4) Insulation Resistance: $\geq 50\%$ of the rated value	a. Test Voltage : Rated Voltage Charge for 2sec. Discharge for 2 sec. Repeated For 1000 ± 100 cycles b. Test Temperature: $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$
7-13	Heat Resistance (Continuous)	(1) Appearance : No Visible Damage (2) DF ($\tan \delta$) ≤ 0.001 (3) Capacitance Change : $\pm 10\%$ of The Initial Value (4) Insulation Resistance: $\geq 50\%$ of the rated value	a. Test Temperature: $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$ b. Test Times: 500 ± 24 Hrs c. TEST VOLTAGE: 125% of The Rated Voltage

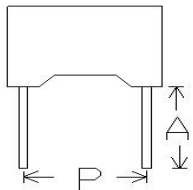
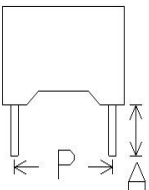
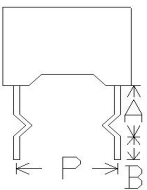
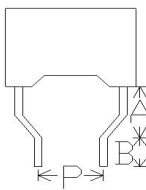
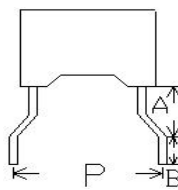
8. Dimensions:



CAPACITOR BODY SIZE (Unit:mm)

CAP	RV	BOX TYP E	W $\pm$ 0.5	H $\pm$ 0.5	T $\pm$ 0.5	D $\pm$ 0.05	L $\pm$ 3	P $\pm$ 0.5
224 J	1000 V	E4	26.5	19	10	0.8	23	22.5

Lead Style

L		H	K	N	M	T		S	
						TAPING (refer to next page)		Customer Require	
CAP	RV	Lead Style	L model-A section($\pm$ 3mm) H.K.N.M model-A section ($\pm$ 0.5mm)		K.N.M model-B section ($\pm$ 0.5mm)				P($\pm$ 0.5mm)
224J	1000V	L	23MM		22.5MM				

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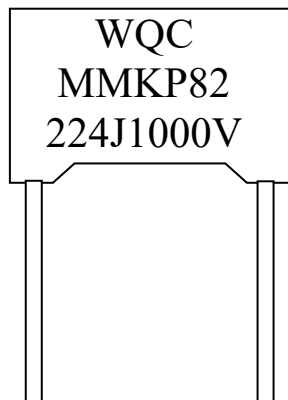
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9. Marking:



WQC	WEIQING CO. LOGO
MMKP82	DOUBLE SIDED MEATALLIZED POLYPROPYLENE FILM CAPACITORC
224	CAPACITANCE
J	CAPACITANCE TOLERANCE
1000	RATED VOLTAGE
V	DC VOLTAGE

10. PACKING:

CAP	R.V.	Pcs / Bag	Pcs/Taping Box (For Taping Style)	Pcs / Box (L:35Cm XH:35Cm X T:35Cm)
224J	1000V	500/PCS		3K/PCS

11.Storage conditions and duration

Packaged capacitors should be kept in clean, ventilated, dry coffers, not near the heat source, not subject to direct sunlight, is strictly prohibited and chemical reagents, acid and harmful gas storage together.

Capacitor at a temperature within the range 20 ~ 25 °C, humidity less than 50% of the state of storage for one year.

12.單峰波峰焊

参照标准: IEC-60384-14

SINGLE WAVE SOLDERING CONDITIONS

組件: 薄膜電容器

Component: Film Capacitors

1. 焊接的建议 Soldering Suggestion:

當焊接電容器時, 焊錫熱會通過導線端子高溫和封裝層傳遞到電容器素子, 因此必須注意高溫和長時間焊接引起的電容器特性衰減或損壞, 請確認焊錫在以下溫度範圍內。

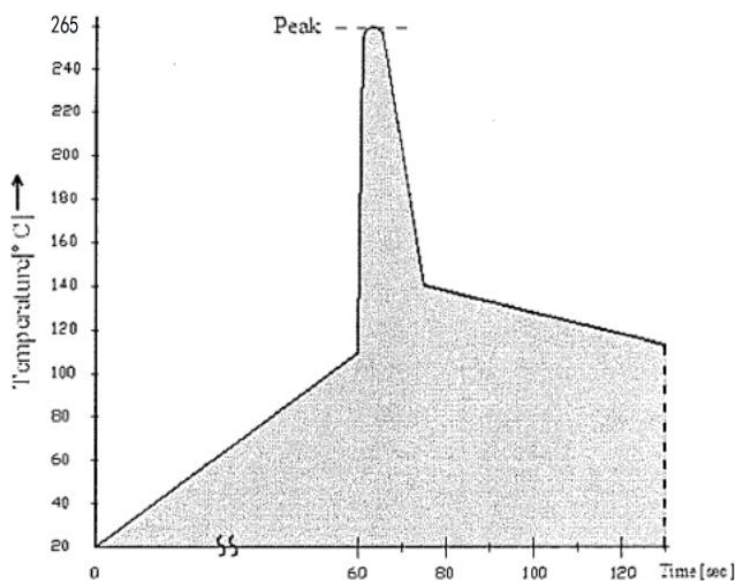
When solder a capacitor, heat in soldering is conducted to the element of the capacitor from wire lead and an enclosure, and hence it should be noted that soldering under high temperature and a long period may cause deterioration of breakdown of capacitors. Be sure to solder within the following temperature condition range.

2. 推荐环境条件 Recommendable Condition:

a. 最高预热温度: $\leq 110^{\circ}\text{C}$ Preheating max temperature: $\leq 110^{\circ}\text{C}$ b. 最大预热时间: ≤ 60 秒Preheating max time: $\leq 60\text{sec}$.c. 温度: $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Temperature: $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$

d.

温度曲线项目	SnPb 合金	无铅合金 (SAC、SbCu 合金)
驻留时间 (板厚在 1.5mm~2.25mm[0.060in~0.090in])	2s~4s	3s~5s
驻留时间 (板厚 > 2.25mm[0.090in])	4s~8s	5s~10s



3. 手工焊接 Hand Soldering:

a. 烙铁最高温度 Soldering iron top temperature: $\leq 350^{\circ}\text{C}$ 焊接时间 Soldering tim: $\leq 3\text{sec}$.

4. 如果需要焊接两次, 第二次焊接必须等到电容器恢复到常温。建议时间 24 小时。

If re-work or dipping twice in necessary, it should be done after the capacitor returned to the normal temperature. Suggestion time is 24 hours.

5. 回流焊接 Reflow Solder

不适合回流焊接 Not suitable for reflow soldering.

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13: 雙峰波峰焊

参照标准: IEC-60384-14

DOUBLE WAVE SOLDERING CONDITIONS

組件: 薄膜電容器

Component: Film Capacitors

1. 焊接的建议 Soldering Suggestion:

當焊接電容器時, 焊錫熱會通過導線端子高溫和封裝層傳遞到電容器素子, 因此必須注意高溫和長時間焊接引起的電容器特性衰減或損壞, 請確認焊錫在以下溫度範圍內。

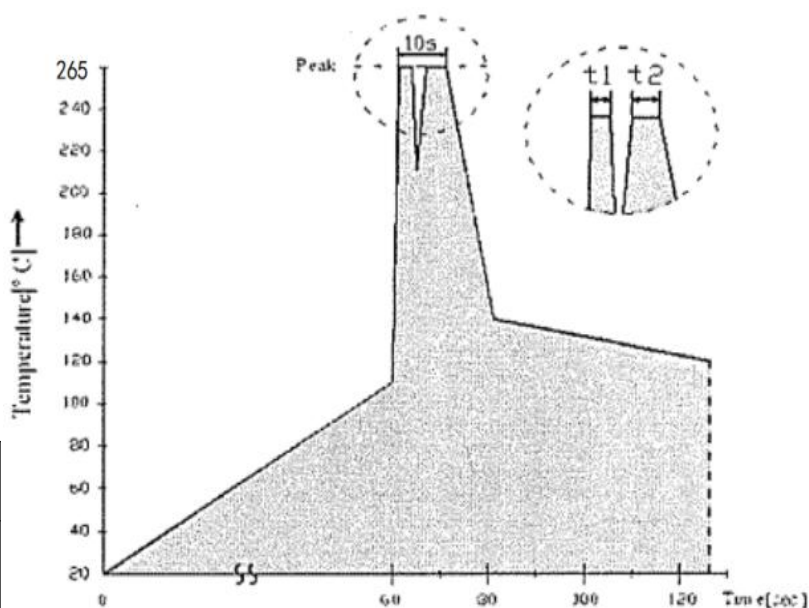
When solder a capacitor, heat in soldering is conducted to the element of the capacitor from wire lead and an enclosure, and hence it should be noted that soldering under high temperature and a long period may cause deterioration of breakdown of capacitors. Be sure to solder within the following temperature condition range.

2. 推荐环境条件 Recommendable Condition:

a. 最高预热温度: $\leq 110^{\circ}\text{C}$ Preheating max temperature: $\leq 110^{\circ}\text{C}$ b. 最大预热时间: ≤ 60 秒Preheating max time: $\leq 60\text{sec.}$ c. 温度: $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Temperature: $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$

d.

温度曲线项目	SnPb 合金 (T1+T2)	无铅合金 (SAC 、SbCu 合金)
驻留时间 (板厚在 1.5mm~2.25mm[0.060in ~0.090in])	2s~4s	3s~5s
驻留时间 (板厚 > 2.25mm[0.090in])	4s~8s	5s~10s



3. 手工焊接 Hand Soldering:

b. 烙铁最高温度 Soldering iron top temperature: $\leq 350^{\circ}\text{C}$ c. 焊接时间 Soldering time: $\leq 3\text{sec.}$

4. 如果需要焊接两次, 第二次焊接必须等到电容器恢复到常温。建议时间 24 小时。

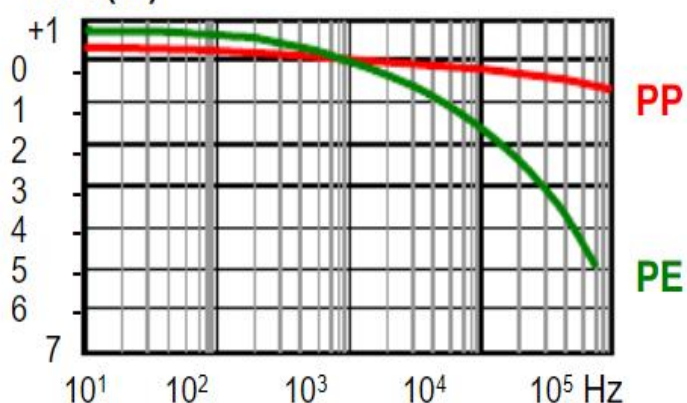
If re-work or dipping twice is necessary, it should be done after the capacitor returned to the normal temperature. Suggestion time is 24 hours.

5. 回流焊接 Reflow Solder

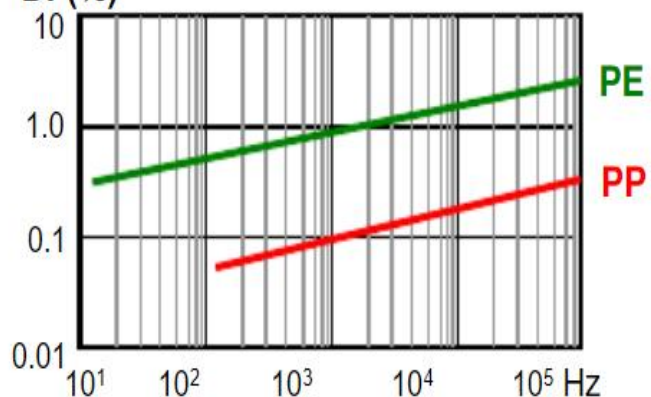
不适合回流焊接 Not suitable for reflow soldering.

14. 频率和温度曲线图 Frequency and temperature curves:

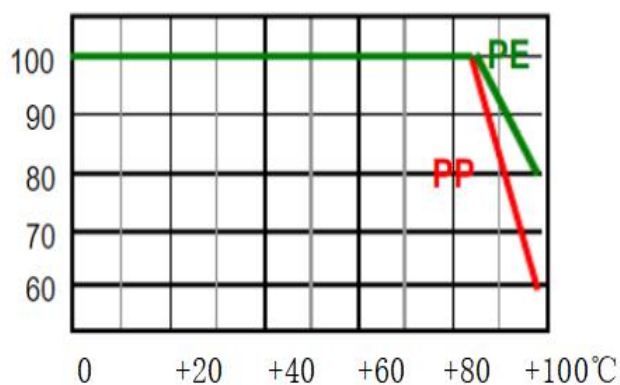
说明: MMKP82 系列谐振电容原材料属于聚丙烯: PP 类材料, 对应相应的材料线条走向即可

 $\Delta C/C(\%)$ 

DF(%)



Vn(%)



I.R.(MOhm)

