APPROVAL SHEET
承认书

Customer 客户	深圳市顺海科技有限公司	
Product Name 品名	DOUBLE SIDED METALLIZED POLYPROPYLENE FLIM CAPACTIORS (BOX-TYPE) 塑料外壳双面金属化聚丙烯膜电容器	
Customer P/N 客户料号 EG P/N EG 代码	Customer P/N 客户料号	EG P/N EG 代码
		DMB123J16KD15L200(80)
Date 日期	2024-08-08	

（MANUFACTURER APPROVAL） 供应商承认栏			（CUSTOMER APPROVAL） 客户承认栏		
Prepared 承办	Checked 审核	Approved 批准	Prepared 承办	Checke 审核	Approved 批准
赵红	赵红	魏龙			

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Record of Revision
更改修订记录表

Edition 版本	Update Date 修订日期	Main Update Item 主要更改内容	Design 更改者	Approve 确认人
A/1	2024.08.08	首次送样	赵红	魏龙

东莞市易利嘉电子有限公司

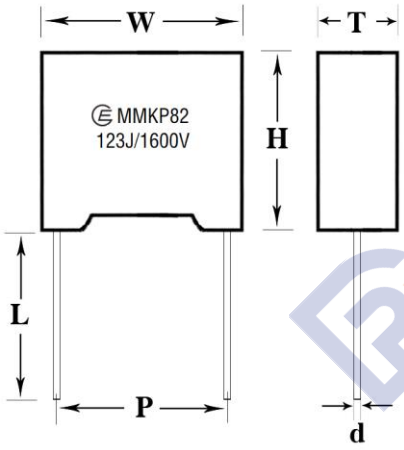
电容器（简式）规格书

DMB123J16KD15L200(80)

推 荐 | 目前生产 | 一般用 | 105℃ | 波峰 | RoHS | REACH

EG-RD4-021-19-0
初始日期 2024-08-08
更新日期 2024-08-08

外形及标志



宽度尺寸 W	18.0±0.5 mm
高度尺寸 H	13.5±0.5 mm
厚度尺寸 T	7.5±0.5 mm
引线间距 P	15.0±1.0mm
引线直径 d	0.80±0.08mm
引线长度 L	18.0Min mm

参考信息

包装	散件或编带	最小包装数量
	散件	500PCS
环保法规与指令符合情况	法规或指令	法规或指令所限制有害物质
	欧盟 2005/84/EC	邻苯二甲酸盐(18P)
	GS 认证 PAHS 要求	多环芳香烃(PAHS)

电气性能

气候类别	40/105/56
标称电容量	0.012μF
额定电压	1600VDC
标称电容量误差	±5%
耐电压	2560VDC
介质损耗	0.1%Max
绝缘电阻	≥100000MΩ
工作温度范围	-40℃～+105℃

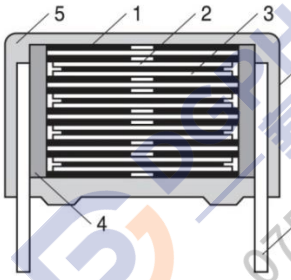
1 product brief introduction 产品简介（示例）

1.1 EG part No.易利嘉产品类别代码：DMB

1.2 Construction and main materials of products 产品结构和主要材料

DMB type capacitor of constructed with polypropylene fime dielectric,pole with double sided metallized polyester fime,twain section spray-metal form Non-inductive , configuration,Electrode lead unilateralism fetch out and flame retardant epoxy resin dip sealed, box coating.

DMB 电容器采用聚丙烯薄膜做为介质，以自愈性优良的耐高温双面金属化聚酯做电极，两端喷金构成无感结构，单向引出，阻燃环氧树脂灌封，塑壳封装。



NO.	Main Construction 主要结构	Materials 、Specification 材料、规格	Note 注意
1	Dielectric film 介电薄膜	Double sided metallized polypropylene terephthalate film (polyester ,PET) 双面金属化聚丙烯对苯二甲酸乙二醇酯膜	-/-
2	Dielectric film 介电薄膜	Polypropylene film (PP) 聚丙烯薄膜	
3	Dielectric film 介电薄膜	Metallized polypropylene (PP) 金属化聚丙烯薄膜	-/-
4	Solder 焊接料	Sn-Zn alloy 锡锌合金	
5	Sealed Materia 封装材料	Epoxy resin 环氧树脂	
6	Plastic Case 塑胶壳体	PBT according to UL 94-0	-/-
7	Terminal 引线	CP wire (Ø0.8or 0.6mm) 镀锡铜包钢线（Ø0.6 或 0.8mm）	-/-

1.3 Features 特性

- Double sided metallized polypropylene film 双面金属化聚丙烯膜
- Low loss and small inherent temperature rise 损耗小，内部温升小
- Negative temperature coefficient of capacitance 负电容量温度系数
- Excellent active and passive flame resistant circuit 优异的阻燃性能

1.4 Hazardous Substances Compliance:All products pass following compliance or standard: RoHS: REACH; PAHS;HF;and Phthalates-Phthalates Regulation.

产品有害物质法规符合性：产品符合 RoHS；REACH；PAHS；HF（如需要）；邻苯二甲酸盐等法规。

1.5 Applications 用途

- Widely used in high voltage ,high frequency and pulse circuits 广泛应用于高压、高频和脉冲电路中
- Deflection circuits in TV-sets(S-correction and fly-back tuning) 电视机中 S 校正和行逆程波形和显示器中
- Lamp capacitor for electronic ballast and compact lamps 电子振流器和节能灯中
  Snubber and SCR commutating circuits 吸收和 SCR 整流电路

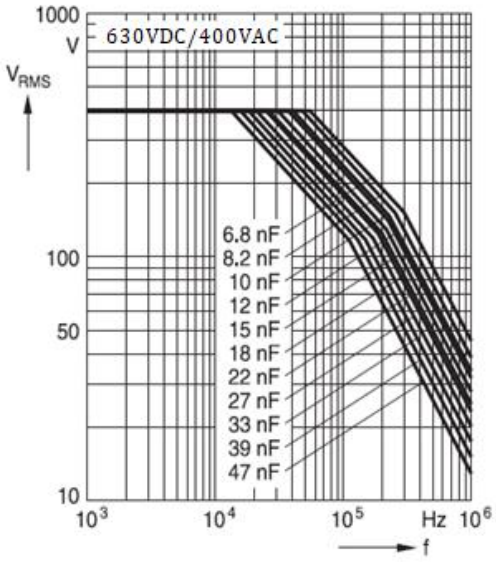
1.6 ectrical Specifications 电气特性

<table>
<tr><td>Item
项目</td><td colspan="6">Specification
标准要求</td></tr>
<tr><td>Climatic Category
气候类别</td><td colspan="6">40/105/56</td></tr>
<tr><td>Rated Temperature
额定温度</td><td colspan="6">85℃ for UR (dc) ； 75℃for UR (ac)</td></tr>
<tr><td>Operating Temperature Range
工作温度</td><td colspan="6">-40℃～+105℃
(+85℃ to +105℃: decreasing factor 1.25% per ℃ for UR (dc))
(+75℃ to +105℃: decreasing factor 1.35% per ℃ for UR (ac))</td></tr>
<tr><td>Capacitance Range
容量范围</td><td colspan="6">0.00022μF～3.9μF</td></tr>
<tr><td>Capacitance Tolerance
容量偏差</td><td colspan="6">G： ±2%　H： ±3%　J： ±5%、K： ±10%</td></tr>
<tr><td>RatedVoltage
额定电压</td><td colspan="6">250VDC(180VAC)　400VDC(250VAC)　630VDC(400VAC)
1000V/1250VDC(600VAC)　1600VDC(650VAC)
2000VDC(700VAC)</td></tr>
<tr><td>Dissipation Factor
损耗角正切</td><td colspan="6">≤0.1%(1KHz at 20～25℃)</td></tr>
<tr><td>Insulation Resistance
绝缘电阻</td><td colspan="6">≥100000MΩ for C_R≤0.33μF ;
≥30000S for C_R＞0.33μF　　(20℃,100V,1min)</td></tr>
<tr><td>Voltage Proof
耐电压</td><td colspan="6">1.6UR（5s）</td></tr>
<tr><td rowspan="8">If the working voltage(U) is lower than the rated voltage(UR)，the capacitor can be worked at a higher dV/dt，In this case，the maximum allowed dV/dt is obtain by multiplying the value with UR/U。
最大脉冲爬升速率 Maximum Pulse Rise Time(dV/dt)：若实际工作电压 U 比额定电压 UR 低，电容器可工作在更高的 dV/dt 场合，这样 dV/dt 允许值应为右表值乘以 UR/U。</td><td rowspan="2">UR（V）</td><td colspan="5">dV/dt(V/us)</td></tr>
<tr><td>P=7.5</td><td>P=10</td><td>P=15</td><td>P=22.5</td><td>P=27.5</td></tr>
<tr><td>250</td><td>1200</td><td>1000</td><td>550</td><td>250</td><td>200</td></tr>
<tr><td>400</td><td>1800</td><td>1500</td><td>900</td><td>500</td><td>300</td></tr>
<tr><td>630</td><td>3200</td><td>3200</td><td>2500</td><td>1500</td><td>900</td></tr>
<tr><td>1000
/1250</td><td>6000</td><td>6000</td><td>3300</td><td>2100</td><td>1000</td></tr>
<tr><td>1600</td><td>--</td><td>--</td><td>6000</td><td>3000</td><td>2000</td></tr>
<tr><td>2000</td><td>--</td><td>--</td><td>10000</td><td>5000</td><td>2200</td></tr>
</table>

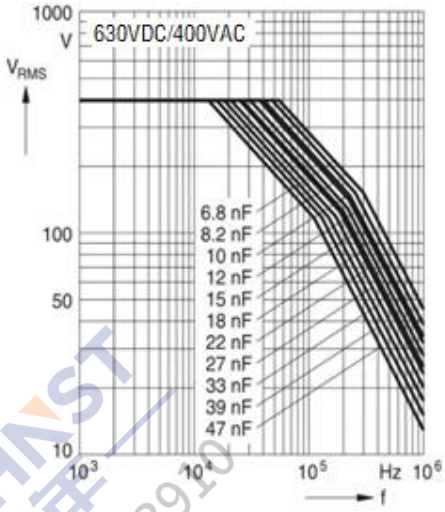
PermissibleACvoltageVRMSversusfrequencyf(forsinusoidalwaveforms,TA≤85°C,ΔT≤15°C)

容许交流电压 vrms 与频率 f：（≤85℃）

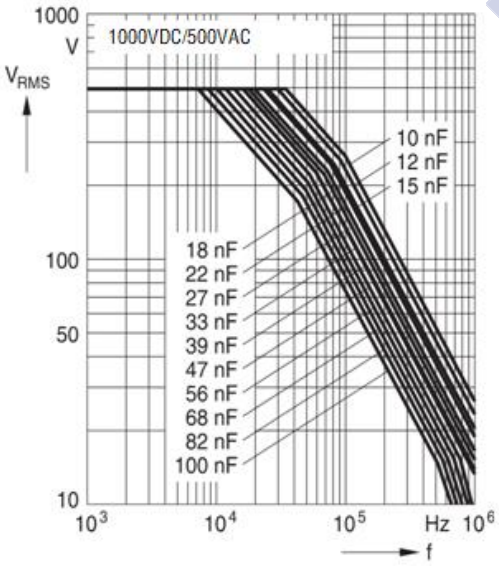
Leadspacing10mm



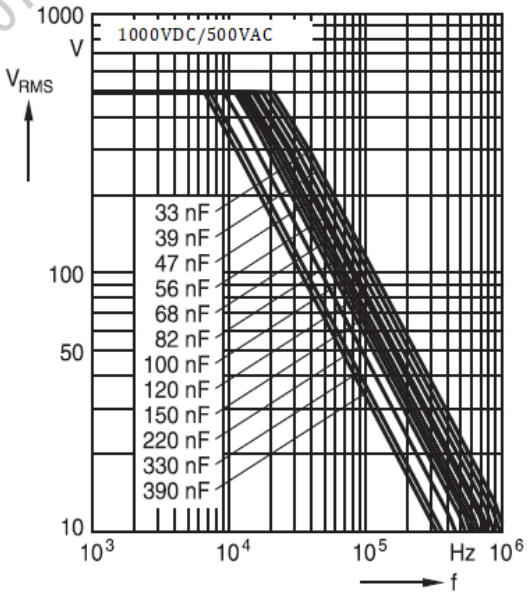
Leadspacing15mm



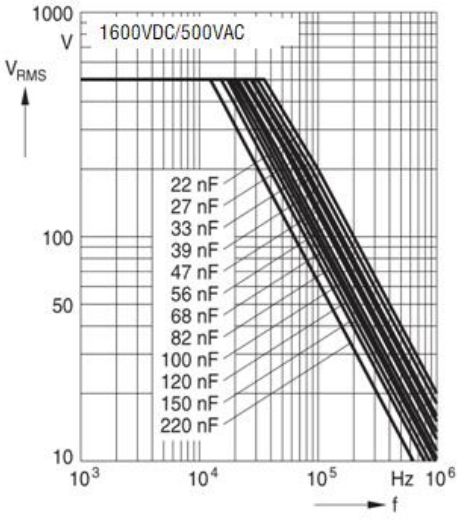
Leadspacing15mm



Leadspacing22.5mm

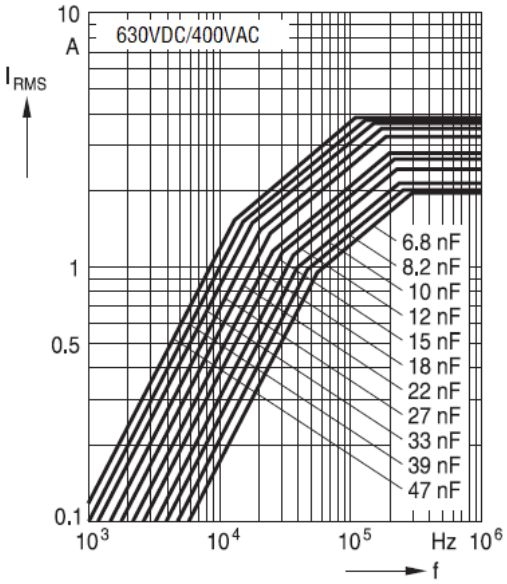


Leadspacing22.5mm



容许电流与频率关系曲线图：（≤85℃）

Leadspacing10mm



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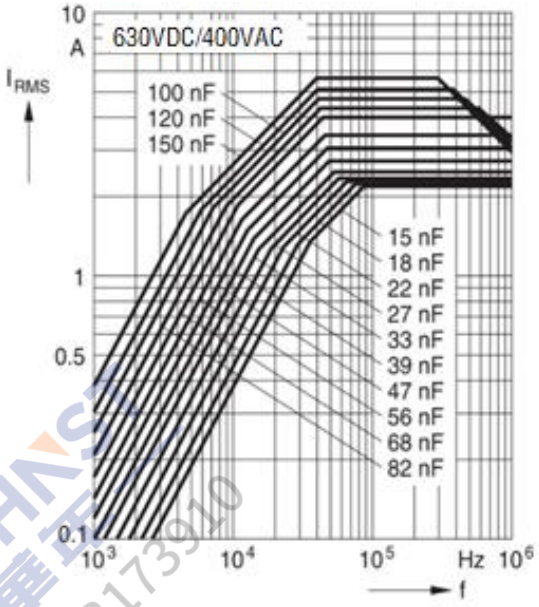

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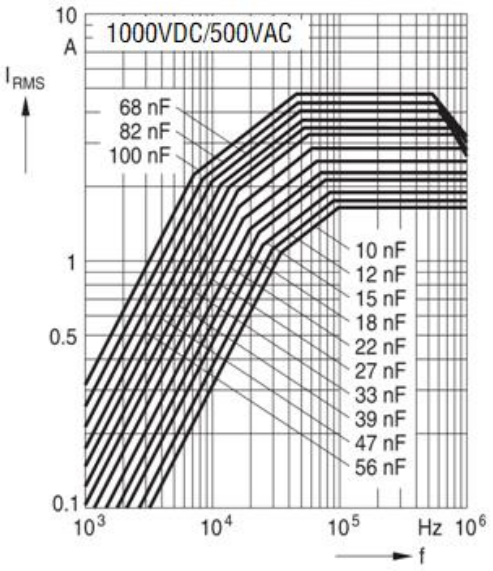
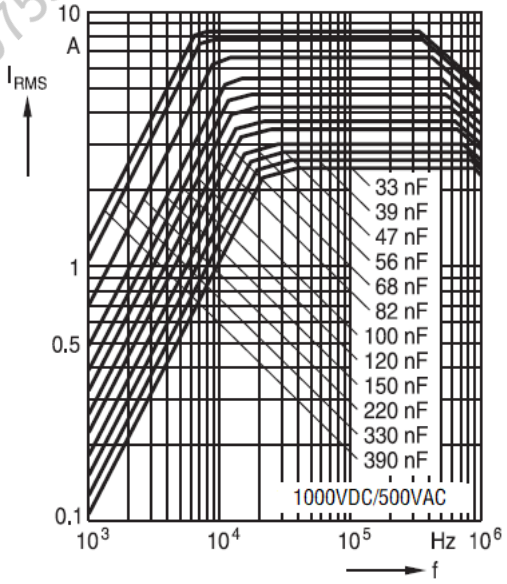


Leadspacing22.5mm



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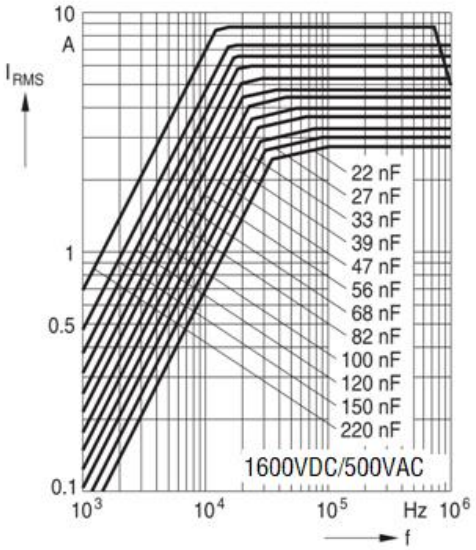


2 EG Part number system 易利嘉产品代码

DMB	183	J	1KV	D	15	L	20	0	(60）
1	2	3	4	5	6	7	8	9	10 11

1 Product Categories产品类别代码：
Double sided metallized polypropylene film capactiors (Box-type)
DMB:塑料外壳双面金属化聚丙烯膜电容器

2 Capacitance Code电容量代码:
The first 2 digits indicate significant figures, and the third digit specifies the number of zero to follow.
前两位数为电容的实际数字,最后一位为倍乘数。
0=×1 1=×10 2=×100
3=×1000 4=×10000 9=×0.1
This gives the capacitance in picofarad.容量值单位为皮法（pF）。
102 =10×10^2 pF=1,000pF =1.0nF = 0.001μF 105 =10*10^5 pF= 1,000,000pF=1000nF = 1μF

3 Capacitance Tolerance电容量允许偏差:
G=±2% H=±3% J=±5% K=±10%

4 Rated Voltage额定电压:
250=250V 400=400V 630=630V 1KV=1000V 12K=1250V 16K=1600V 2KV=2000V

5 Voltage Type电压类别:
D=direct voltage直流电压

6 Lead Space引线间距(mm):
10=10.0 15=15.0 20=20.0 27=27.5

7 Lead Style线型形状:
L/M-type 直线 K-type 直线外弯 Y-type 直脚内弯 J-type 单内弯、单外弯

8 Lead Length引线长度(mm):
35=3.5±0.5 40=4.0±0.5 50=5.0±0.5 80=8.0±1.0 10=10.0±1.0 20=18.0Min 25=20.0Min
T=12.7mm Feeding hole pitch 孔距编带 S=15.0mm Feeding hole pitch 孔距编带

9 RoHS Symbol环保标识:
0：Environmentally friendly products (in compliance with RoHS, Reach, and do not contain PAH or phthalates).
环保产品（符合RoHS、Reach、不含多环芳烃、不含邻苯二甲酸盐）
1：Non environmentally friendly非环保
2：In addition to being compliant with the aforementioned environmentally friendly criteria “0”, it should also show that the amount of halogens contained in the product meets the criteria.
除符合上述“0”代表的环保要求外，还符合不含卤素。

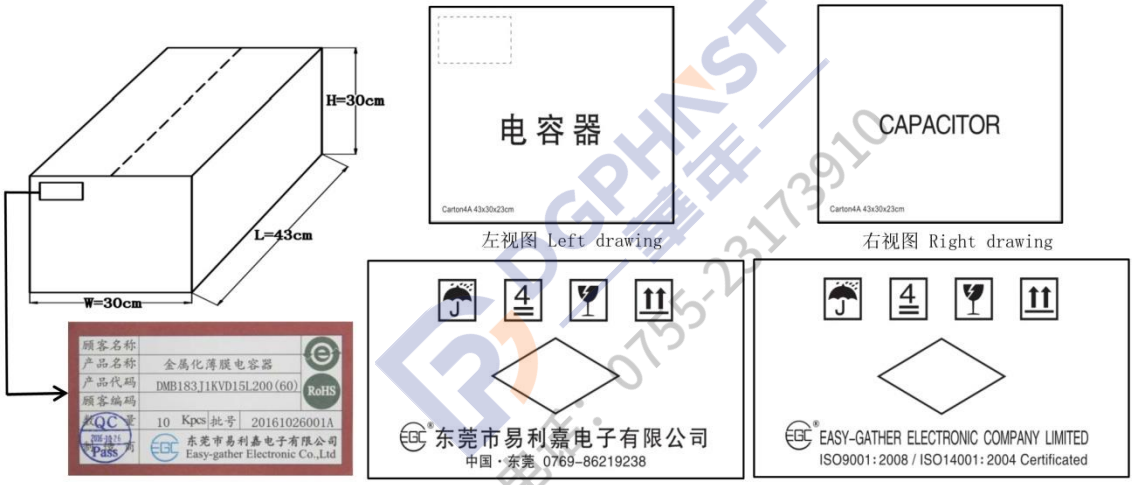
10～12Management Code内部管理码

3 Marking 标志 Example 范例

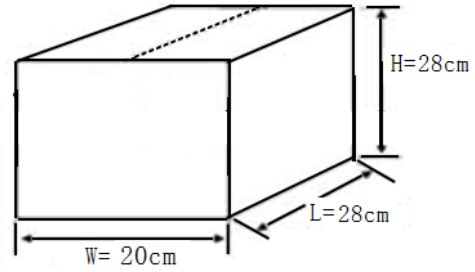
Marking Item 产品标志		Example 范例
Manufacturer Marking 厂商标志	㊣	㊣ MMKP82 183J/1000V
Type Designation 种类标志	MMKP82	
Capacitance, Tolerance 容量与精度	183J	
Rated Voltage 标称电压	1000V	

4 Packing in bulk 包装说明（Example 范例）

4.1 外包装箱尺寸(Outside packing box)　　主视图 front view　　后视图 back view



4.2 内包装箱尺寸(Inner packing box)



5 Regulation in usage 使用规则

5.1 OPERATING AND STORAGE ENVIRONMENT使用和储存环境

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 likes 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℃ and 15 to 75%.

Being exposed in air for too long may result in attenuation of leads' welding performance.

Please use capacitors within 12 months and the date on packaging label should prevail. If overdue, the capacitors should be confirmed the performance before use.

电容器的绝缘外层不可能完全密封。因此，不要在下列大气环境下使用或者储存电容器：含有腐蚀性气体、特别是放置有含氯气体、含硫气体的地方；放置有酸、碱、盐等物质的地方。也要尽量避免将电容器暴露在潮湿的空气中。在清洗、焊接或者成型产品前要确认这些过程不会影响产品的品质，这种确认可以通过使用特定装备来测试清洗过、焊接过或者成型过的产品。电容器储存温度为-10℃～40℃，相对湿度为 15%～75%。

长时间暴露在空气中会导致产品引线焊接性能衰减。

请在 12 个月内使用电容器(以包装标签日期为准)。如超期，应进行性能确认后再使用。

5.2 VIBRATION AND IMPACT 振动和撞击

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

使用时，避免电容器及电容器引线受到过多的撞击或者振动。

5.3 SOLDERING焊接

（1）手动焊接：

最高温度 350℃，时间 3S

(1) Manual soldering:

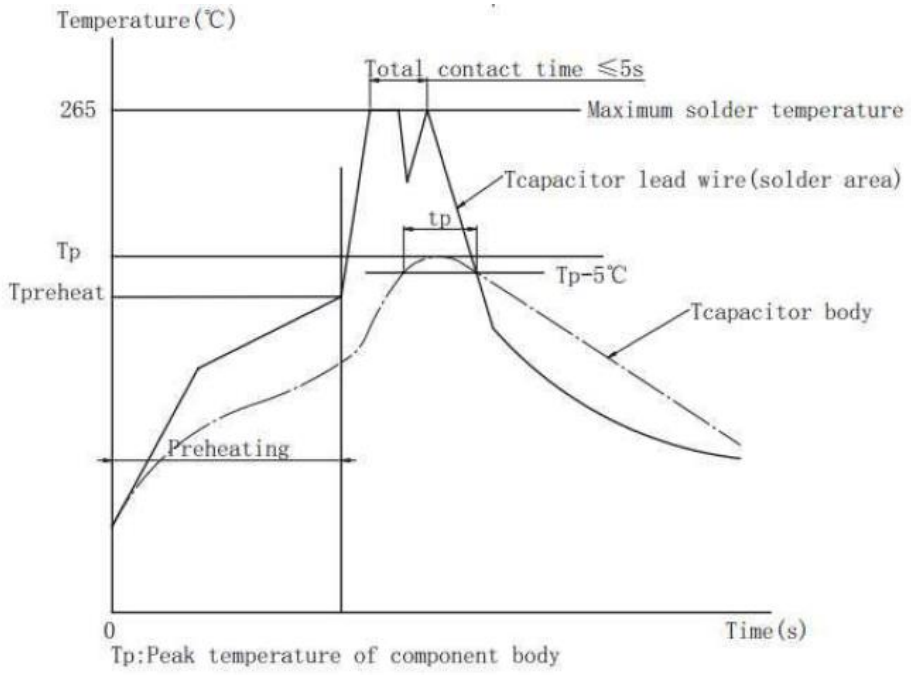
Maximum temperature 350℃, time 3S

（2）波峰焊工艺过程中有较多因素对薄膜电容器受热有影响，如：预热温度、预热时间、锡炉温度、过锡炉时间、其它热源影响等。

典型焊接曲线如下：

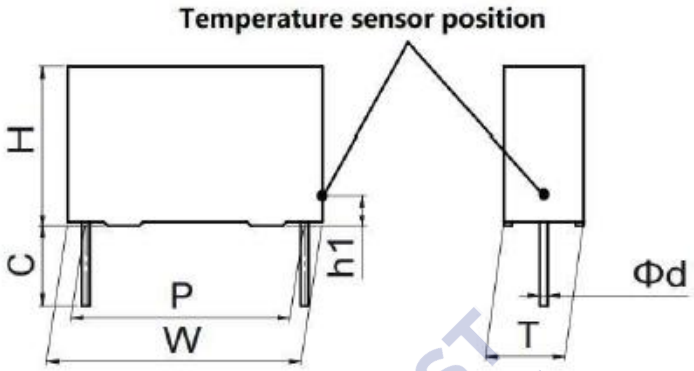
(2) There are many factors that affect the heating of film capacitors during the wave soldering process, such as: preheating temperature, preheating time, tin furnace temperature, tin furnace passing time, the influence of other heat sources, etc.

Typical soldering curves are as follows:



（3）因为过热有可能会损害电容器，我们建议关注电容器最高温度及耐热时间，用热电偶检测电容本体最高温度 Tp（测量位置参考下图）

(3) Because overheating may damage the capacitor, we recommend paying attention to the maximum temperature and heat resistance time of the capacitor, and using a thermocouple to detect the maximum temperature TP of the capacitor body (refer to the picture below for the measurement location).



测量点位置 Temperature sensor position (Tcapacitor body)	电容器引线侧的外壳表面，电容距 PCB 板高度：h1=2-3mm 的位置 The capacitor body surface of lead side, capacitor height position from PCB: h1=2-3mm		
焊接过程电容本体最高耐热温度 Maximum capacitor body temperature Tp (℃)	OPP film P≤15mm	OPP film P＞15mm	PET film
	115	120	125
焊接过程电容引脚最高耐热温度 Maximum capacitor lead wire temperature Tp (℃)	265	265	265
焊接过程电容本体最长耐热时间 Maximum capacitor body heating time Tp=Tp-5℃	30s		

备注：如果需要焊接两次，第二焊接必须等到电容器恢复到常温。

Note: If two soldering are required, the second soldering must be Wait until the capacitor returns to normal temperature.

5.4 耐压试验被试验样品及试验环境应符合：

Temperature 环境温度：小于 35 ℃

Relative humidity 相对湿度: 25~75%

试验样品：应在相对湿度不大于 75%条件下放置 24 小时以上。

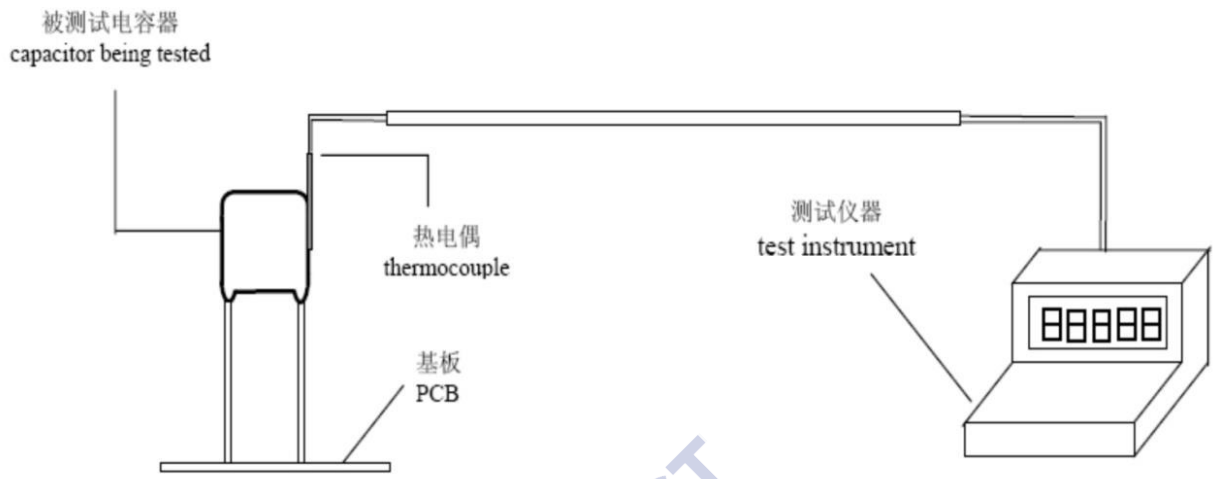
TEST SAMPLE: The sample is required to store under a maximum relative humidity of 75% for minimum 24 hours.

5.5 表面温升（ΔT）：

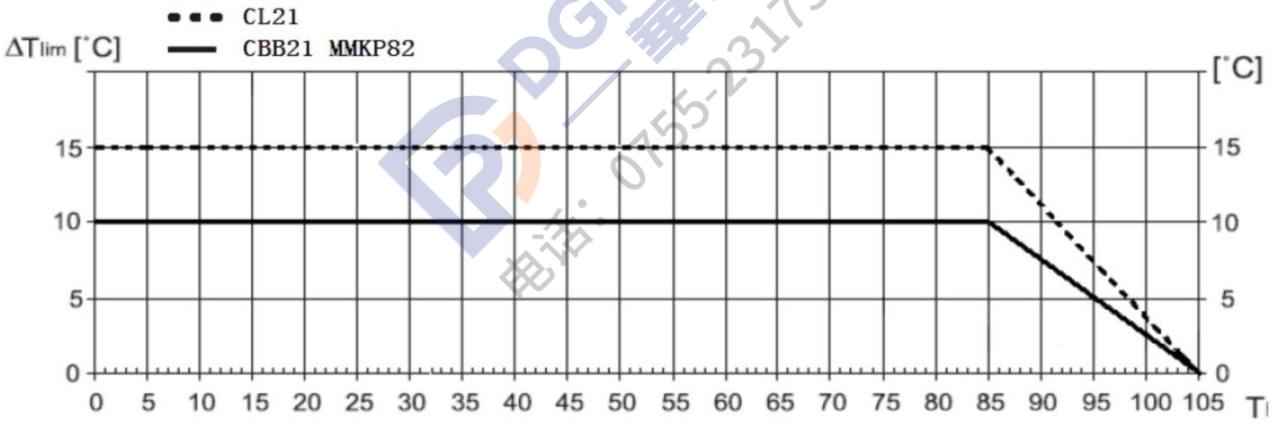
When capacitor is used in A.C. or pulse applications, the current that flows through the capacitor makes it heat up. If the capacitor heats up too much it might deteriorate causing a short circuit or fire. The limits described in the catalogue are not exceeded and it's necessary to check temperature on the capacitor when it's working. Method for determining the surface overtemperature of the capacitor is showed in fig. The capacitor being tested must be supplied by A.C. or pulse voltage and frequency.

当电容器用于交流及脉冲场合时，流经电容器的电流使其发热，如果发热量过大，会导致电容器短路甚至燃烧。所以流经电容器的电流不能超过产品目录所规定的最大数值及电容器在加载时监测温升就显得尤为必要。测量电

容器表面温升的方法如图所示，被测试电容器必须施加交流(工作频率)、脉冲电压。



各类别电容器表面允许的最大温升 Maximum self temperature rise for all series.



6 Specification and test methods 技术指标及试验方法

6.1 Test conditions电气特性和测试条件

Test condition: Unless otherwise specified, the standard range of atmospheric
Conditions for marking measurements and test is conducted in the following ambient
测试条件:除非另外说明，则在标准大气范围内测试，条件如下：
Temperature 环境温度: 15~35 ℃ Relative humidity 相对湿度: 25~75%.
If there may be any doubt on the results, measurements shall be made within the Following limits.
如对测试结果有任何疑问，则按以下条件测试：
Ambient temperature 环境温度: 20±2℃ , Relative humidity 相对湿度: 60~70%.

6.2 Specification and test methods技术指标及试验方法：

No	Item 项目	Test method 试验方法	Specification 技术参数
1	Appearance 外观	The appearance shall be inspected by naked eyes. 用肉眼检查外观	No marked defect on appearance 外观无显著缺陷
2	Dimensions 尺寸	The dimensions shall be measured with slide calipers 用游标卡尺测量尺寸	Dimensions of capacitor and taping shall satisfy specified requirement. 电容器的尺寸和编带应满足规定
3	Marking 标志	The marking shall be checked by 4x magnifying glass. 用 4 倍放大镜检查标志	Legible marking 标志清晰易辨认

<table>
<tr><td>4</td><td>Capacitance and tolerance
容量和误差</td><td>The capacitance shall be measured at 25℃ with 1KHz 1±0.2 Vrms.
电容量测量条件：25℃，1KHz1±0.2 Vrms</td><td colspan="2">Refer to specification sheet
参照规格表</td></tr>
<tr><td>5</td><td>Dissipation factor(D.F)
介质损耗</td><td>The dissipation factor shall be measured at 25℃ with 1KHz 1±0.2 Vrms.
介质损耗测量条件：25℃，1KHz 1±0.2 Vrms.</td><td colspan="2">0.1% max</td></tr>
<tr><td rowspan="3">6</td><td rowspan="3">Insulation resistance
绝缘电阻</td><td rowspan="3">The insulation resistance shall be measured with 100VDC within 60±5 sec of charging.
绝缘电阻测量条件：100VDC,充电 60±5 秒</td><td colspan="2">Test A</td></tr>
<tr><td>C_R＞0.33μF
RC
S</td><td>C_R≤0.33μF
R
MΩ</td></tr>
<tr><td>30000</td><td>100000</td></tr>
<tr><td>7</td><td>Dielectric Strength(Voltage Proof)
耐电压</td><td>The capacitor should not be damaged when test voltages of table below are applied between the lead wires for 60 sec.在引线之间施加下表所示试验电压 60s，电容器不会损坏。
Type 类型 | Test Voltage 试验电压
MMKP82 | 1.6 倍 U_R</td><td colspan="2">No failure
不允许有失败</td></tr>
<tr><td>8</td><td>Robustness of Termination
引出端强度</td><td>The capacitor body shall be held in such a manner so that the axis of the lead is vertical.
The tensile force of 10N(for lead of Ø0.6～Ø0.8mm)shall be applied to the lead in a direction of its axis and acting in a direction away from the body of the capacitor for 10±1 seconds.
应使用某种方式固定电容器的本体，并使引线的轴心与本题垂直。为使引线脱离电容器本体，在本体反向引线端沿轴心施加 10N 的拉力（引线直径为 0.6～ 0.8mm），持续 10±1s。</td><td colspan="2">The capacitor shall be no broken and the lead shall be no loosened or cut off.
电容器未损坏，并且引线未松动或者断开</td></tr>
<tr><td>9</td><td>Solderability Of leads
引线可焊性</td><td>The lead wire of a capacitor should be dipped Into molten solder for 2±0.5sec.
引线应浸入熔融的焊料里 2±0.5 秒
The depth of immersion is up to about 1.5 to 2.0mm from the root of lead wires.
引线浸入深度大约为 1.5~2mm（从引线底端算起）
Temp.of solder:
Lead Free solder(Sn-3Ag-0.5Cu) 245±5℃
H63 Eutectic Solder 235±5℃
焊料温度：
无铅焊料（锡-3 银-0.5 铜）245±5℃
H63 共晶焊料 235±5℃</td><td colspan="2">A new uniform coating of solder shall cover a minimum of 3/4 of the surface being immersed
新的焊料层应均匀覆盖至少 3/4 被浸入表面</td></tr>
<tr><td rowspan="4">10</td><td rowspan="4">Resistance to Soldering heat
耐焊接热</td><td rowspan="4">Temperature of solder bath 260±5℃.
The immersing depth of lead shall be a position 2-0.5mm from the seating plane,using a thermal screen. The thickness of the screen is 1.5±0.5mm. The immersion time shall be 10±1 seconds.
Post-treatment:The capacitor shall be preserved at the standard atmospheric condition for 1 to 2 hours.
焊浴温度：260±5℃。引线浸入深度：离底座 2-0.5mm。使用绝热板（厚度为 1.5±0.5mm）。浸入时间：10±1 秒。
后处理：电容器应在标准大气压条件下放置 1- 2 小时。</td><td>Appearance
外观</td><td>No visible damage
没有明显损坏</td></tr>
<tr><td>Dissipation Factor
介质损耗</td><td>Increasing value 增加值
≤0.001(1KHz)</td></tr>
<tr><td>Capacitance Change
电容量变化
(△C/C0)</td><td>≤±1% of the initial vale
≤ 初始值的±1%</td></tr>
<tr><td>Insulation resistance
绝缘电阻</td><td>≥50% of the initial value
≥ 初始值的 50%</td></tr>
</table>

11	Solvent Resistance 耐溶剂性	The capacitor shall be immersed into isopropyl alcohol for 30±5nds.seco 电容器应浸入异丙醇中 30±5 秒	Appearance 外观	No visible damage 无明显损坏 Legible marking 标志清晰
12	The steady state hot and humid 稳态湿热	The capacitor shall be stored for 56 days at a temperature of 40℃ ±5℃ and a relative humidity of 90 to 95%. 在 40℃ ±5℃、相对湿度 90-95%条件下储存电容器 56 天。 Pre-treatment:The capacitor shall be stored at a temperature of 85℃ ±2℃ for l hour ,and then the capacitor shall be recovered for 24±2 hours. 预处理：在温度 85℃ ±2℃下储存电容器 1 小时，然后电容器恢复 24±2 小时。 Post-treatment:The capacitor shall be stored for 1 to 2 hours at the standard atmospheric condition。 (Temperature:15 to 35℃,Relative humidity:45 to 75%,Atmospheric pressure:86 to 106kPa) 后处理：在标准大气压下储存电容器 1-2 小时。 （温度：15-35℃，相对湿度：45-75%，大气压力：86-106 千帕）	Capacitance Change 电容量变化 (△C/C0)	≤±2% of the initial vale ≤初始值的 ±2%
			Dissipation Factor 介质损耗	Increasing value 增加值 ≤0.001(1KHz)
			Insulation resistance 绝缘电阻	≥50% of the initial value ≥初始值的 50%
13	Endurance test(life) 耐久性试验（寿命）	the capacitors are placed at a temperature of 105℃ ±2℃for 1000 hours. Throughout the test, the capacitors are subjected 50Hz/60Hz 1.25UR voltages 将电容器放置在 105℃ ±2℃下 1000 小时。在整个实验过程中，电容器应经受 50Hz/60Hz1.25UR 的电压 Post-treatment: the capacitor shall be preserved for 24±2 hours at standard atmospheric condition. 后处理：在标准大气压下，电容器恢复 24±2 小时。	Appearance 外观	No visible damage 无明显损伤
			Capacitance Change 电容量变化 (△C/C0)	≤±5% of the initial vale ≤初始值的 ±5%
			Dissipation Factor 介质损耗	Increasing value 增加值 ≤0.0015(1KHz)
			Insulation resistance 绝缘电阻	≥50% of the initial value ≥初始值的 50%