RoHS
REACH

产品技术规格承认书

Product Specification

客 户 名：立创商城

Customer:

品　　名：金属化聚丙烯膜盒装电容器(CBB21B)

Descript ion:

圣融达料号：MPB225J4F1J00

Srd P/N:

客户料号：

Customers P/N:

品　　牌：圣融达（SRD）

Brands:

作成日期：2020-11-11

Issue Date:

客户承认 Customer's Approval			圣融达承认 Sincerity Approval		
接收 receive	审核 check	批准 approve	制作 inspet	审核 check	批准 approve
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●规格型号 Specification type

圣融达料号 SRD No.	型号 type	标称容量 uF Nominal capacity	容量误差值 Capacity error value	额定电压 Rated voltage	客户料号 Customer No.
MPB225J4F1J00	CBB21B	2.2uF	J (±5%)	400VDC	

●外形尺寸 Shape size（mm）

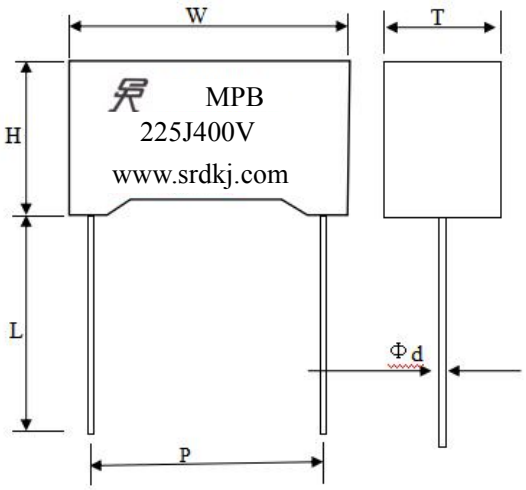
W±0.5	T±0.5	H±0.5	P±0.5	L≧	Φd±0.05
31.5	**10.8**	**19.5**	**27.5**	**13**	**0.8**

IR 测试 test	TV 测试 test
IR≥3500MΩ	640VDC

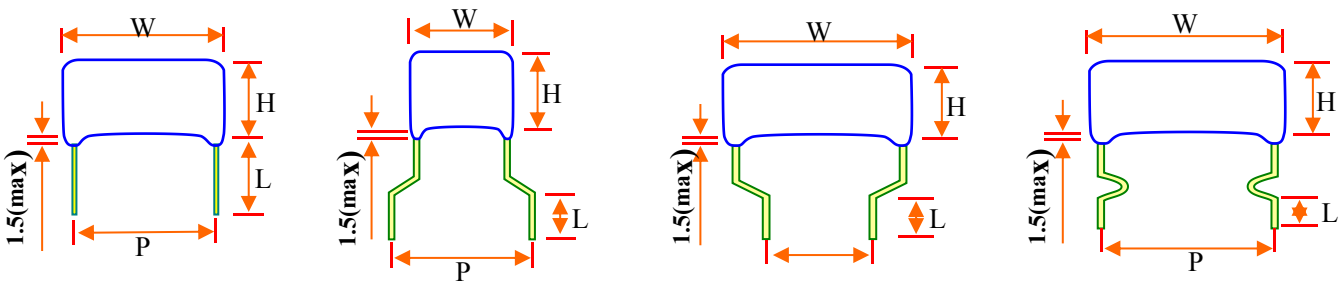
●规格型号测试记 Specification Model Test Record Table （测试频率 Test frequency：1Khz）

No.	1	2	3	4	5	6	7	8	9	10
C0(nF)										
DIS										
备注 Remarks	无字灰壳									

●外形图示及印字格式如下图 Shape illustration and printing format are as follows



●引脚加工图形 Pin processing pattern



1.1 适用范围 Scope of application

CBB21B 金属化聚丙烯膜介质直流盒装电容器。

CBB21B metallized polypropylene film dielectric DC box capacitor.

1.2 产品特点 Product Features

CBB21B 该系列电容器采用聚丙烯膜作介质，用真空蒸发方法将铝沉积在薄膜上作电极卷绕而成；该系列电容器采用环氧树脂真空灌封，塑壳封装型号。

CBB21B series capacitors use polypropylene film as medium, vacuum deposition method is used to deposit aluminum on the of the film for electrode winding; the series of capacitors are vacuum potted epoxy resin, molded case type.

1.3 主要用途 main use

1.3.1 CB21B 高频损耗小，内部温升小、自愈性好、可靠性高，适用于高压高频脉冲电路中,变频器的谐振电路中,LED 驱动高效电路和开关电源高效电路中,吸收和 SCR 整流电路中。

CBB21B low frequency loss, small internal temperature rise, good self-healing, high reliability, suitable for high-voltage high-frequency pulse circuit, in the resonant circuit of the inverter, led drive high-efficiency circuit and switching power supply high-efficiency circuit, Absorption and SCR rectifier circuits.

2.引用标准 Reference standards

GB2693 《电子设备用固定电容器 第 1 部分：总规范》；

Gb2693 《Fixed capacitors for electronic equipment - Part 1: General specification》；

IEC384-1

GB10190 《电子设备用固定电容器 第 16 部分：分规范：金属化聚丙烯膜介质直流固定电容器》；

GB10190 《Fixed capacitors for electronic equipment - Part 16: Sectional specification: Metallized polypropylene film dielectric DC fixed capacitors》；

SJ/T10353《电子元器件详细规范：金属化聚丙烯膜介质直流固定电容器 评定水平 E》；

SJ/T10353 《Detailed specification of electronic components: metallized polypropylene film dielectric DC fixed capacitor evaluation level E》；

3.编号规则及产品命名方法 Numbering rules and product naming methods

3.1 编号规则 numbering rules

3.1.1 电容量代码表示方法：Capacitance code representation

代码 code	102	103	104	105
μF	0.001	0.01	0.1	1.0

3.1.2 电容量偏差：Capacity deviation

电容量偏差 Capacity deviation	±5%	±10%	±20%
符号 symbol	J	K	M

3.1.3 安规电容器脚距由外壳代号第 9 和第 10 位决定：
Safety Capacitor Foot Distance Determined by Shell Code Nos. 9 and 10

外壳代号 The shell code	C 类 class c	D 类 class d	E 类 class e	F 类 class f
脚距 pitch	10mm	15mm	22.5mm	27.5mm

3.1.4 包封类电容器脚距由电容器宽度第 9 和第 10 位数字决定：

Encapsulation Capacitor pitch is determined by the 9th and 10th digits of the capacitor width:

电容器宽 Capacitor width	07	10	13	18	23	25	28	30	34
脚距 Pitch	5mm	7.5mm	10mm	15mm	20mm	22.5mm	25mm	27.5mm	31mm

3.1.5 脚形由最后一位代码决定：

The shape of the foot is determined by the last code

代码 Code	0	1	2	3	4
脚形 Foot shape	直脚 Straight foot	22#黑线 black line	20#黑线 black line	脚长 Feet length 3	脚长 Feet length 4-6
代码 Code	A	B	K	I	W
脚形 Foot shape	脚长 10Feet length 10	脚长 15Feet length 15	K 脚 K foot	内弯 Inner bend	编带 Tape

4.外形标志及几何尺寸 Shape marks and geometric dimensions

4.1 电容器上标志应标明 the mark on the capacitor shall be marked

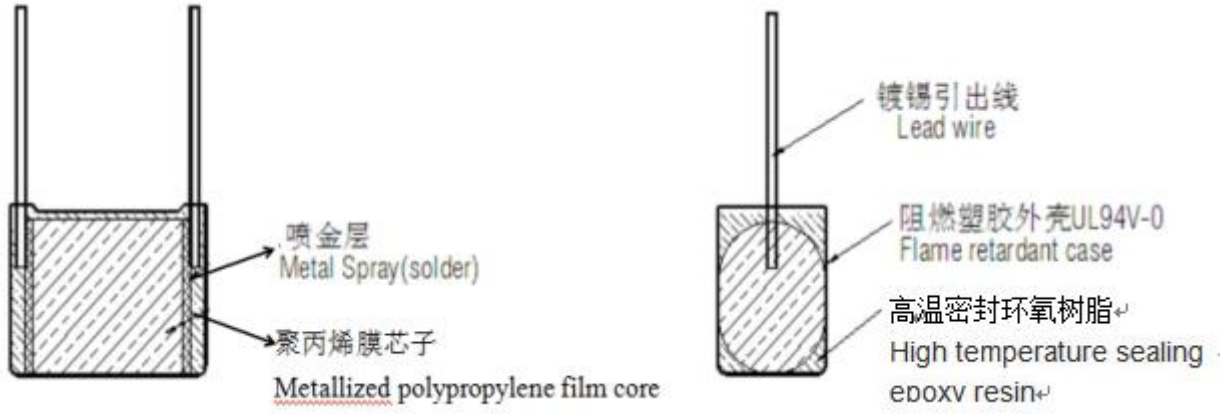
1. 供方商标 Supplier's trademark
2. 产品型号 product model
3. 标称电容量 rated capacitance
4. 允许容量偏差 Allowable capacity deviation
5. 额定电压 rated voltage
6. 印字字体为激光打印 Print font for laser printing

4.2 外观要求

标志正确，清晰可无明显损伤，针孔气泡，引出线无严重损伤

Appearance requirements , The logo is correct, clearly readable, No obvious damage, pinhole bubbles, There was no serious damage to the lead line

4.3 产品结构图示 Product Structure Diagram



4.4 材料清单 Bill of Materials

金属化聚丙烯膜盒装电容器-CBB21B Metallized polypropylene film box capacitor(CBB21B)	介质 medium	聚丙烯 Polypropylene
	电极 electrode	金属化聚丙烯膜 Metallized polypropylene film
	灌封料 Potting material	环氧树脂 Epoxy resin
	焊锡 Solder	锡锌合金 Tin-zinc alloy
	塑壳 Molded case	PBT 塑壳 Pbt molded case
	引线 lead	镀锡铜包钢线 Tinned copper clad steel wire

5.技术性能参数 Technical performance parameters

No.	项目 project	性能要求 Performance requirements	试验方法 (GB10190) experiment method	GB2828
5.1	温度范围 temperature range	－40℃～+110℃/56d		
5.2	额定电压 U_R Rated voltage U_R	250V;450V;630V; 1000V;		
5.3	电容量范围 Capacitance range	0.0022uF~10uF		
5.4	电容量允许偏差 Capacitance tolerance	J(±5%),K(±10%)	Ref.item4.2.2 1KHz, 3%U_R(Vrms)max	一般检查 II General inspection AQL:0.25
5.5	损耗角正切 Loss tangent	tgδ≤0.0010 (1KHz)	Ref.item4.2.3 20℃ 1KHz,3%U_R (Vrms)max	一般检查 II General inspection AQL:0.25
5.6	耐电压 Withstand voltage	无击穿或飞弧 No breakdown or arcing	引脚间 between pins Tv: 1.6$U_R$dc 5S 极壳间 Between the shells Tv: 2000VAC 5S	一般检查 II General inspection AQL:0
5.7	绝缘电阻 Insulation resistance	≤ 0.33uF, ≥ 25000MΩ ; >0.33 uF, ≥ 7500s （100VDC 60S 25℃）	Ref.item4.2.4 U_R≤500V, 充电电压 100V harging voltage 100v U_R>500V, 充电电压 500V charging voltage 500v 20℃，充电 1min 后测得 measured after 1 min of charging	一般检查 II AQL:0.25 General inspection

No.	项目 project	性能要求 Performance requirements	试验方法 （GB10190） experiment method	GB2828
5.8	可焊性 Solderability	上锡面积 90％以上 More than 90% of the tin area	Ref. item4.5 焊槽法 Ta，方法 1 Solder bath method Ta, method 1 焊料温度：265±5℃ Solder temperature 浸渍时间：4.0±1S Immersion time	特殊检查 S-3 AQL：1.0 Special inspection
5.9	外观 Exterior	a. 无毛刺、气孔、气泡、露白。 b. 引线无长漆、无氧化、无弯曲、长短一致、直径相同等。 c. 标识清晰端正居中、无墨迹、无断字等。 A. No burrs, stomata, bubbles, whiteness. B. The lead has no long lacquer, no oxidation, no bending, uniform length, and the same diameter. C. The logo is clearly centered, no broken words, etc.	目测 Visual inspection	一般检查 II AQL:1.0 General inspection

6.试验性能要求：Experimental performance requirements

NO.	项目 project	性能要求 Performance requirements	试验方法（GB10190） Test method
6.1	初始测量 Initial measurement	电容量 capacitance 损耗角正切 Loss tangent： 1KHz	
	引出端强度 Lead end strength	外观无可见损伤 No visible damage to the appearance, clear signs	Ref. item4.3 拉力试验 Ual： 拉力： 0.5＜Φd≤0.8mm；10N 弯曲试验 Ub：每个方向上进行二次弯曲 扭转：两次连续扭转 180° Tensile test Ual: Pulling force: 0.5＜Φd≤0.8mm; 10N Bending test Ub: secondary bending in each direction Torsion: two consecutive twists of 180°
	耐焊接热 Final measurement	外观无可见损伤，标志清晰 Capacity: △c/c≤ initial measurement is worth ±5% Loss tangent: increase in tgδ ≤0.008 (1KHz)	Ref. item4.4 焊槽法 Tb，方法 1A 265±5℃，4±1S Solder bath method Tb, method 1A 265±5° C, 4±1S

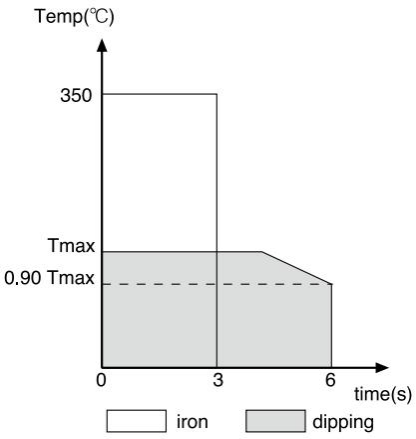
No	项目	性能要求 Performance requirements	试验方法（GB10190） Test method	
6.1	最后测量 Final measurement	电容量：△C/C≤初始测量值得±5% Capacity: △c/c≤ initial measurement is worth ±5% 损耗角正切： tgδ的增加≤0.008（1KHz） Loss tangent: increase in tgδ ≤0.008 (1KHz)		
6.2	初始测量 Initial measurement	电容量 损耗角正切：1KHZ Capacity loss tangent: 1khz		
	温度快速变化 Rapid temperature change	外观无可见损伤 No visible damage to the appearance	0_A=－40℃， 0=+110℃ 5 次循环，持续时间：t=30min 5 cycles, duration: t=30min	
	振动 vibration	外观无可见损伤 No visible damage to the appearance	Ref.item4.7 振幅 0.75mm 或加速度 98m/s²(取严酷度较小者)，频率 10～500Hz 三个方向，每个方向 2h，共 6h Ref.item4.7 amplitude 0.75mm or acceleration 98m/s² (slightly less severe), frequency 10~500Hz three sides Direction, 2h in each direction, total 6h	
	碰撞 collision	外观无可见损伤 No visible damage to the appearance	Ref.item4.8 4000 次，加速度 390 m/s², 4000 times, acceleration 390 m / s², 脉冲持续时间：6msPulse duration: 6ms	
	最后测量 Final measurement	电容量：△C/C≤初始测量值的±5% Capacitance: △c / c ≤ ± 5% of the initial measurement 损耗角正切：tgδ的增加≤0.0008 Loss tangent: increase in tgδ ≤0.0008 绝缘电阻 IR：≥额定值（NO5.7）的 50% Insulation resistance ir: ≥ 50% of rated value (no5.7)		
6.3	气候顺序 gas Waiting Have sequence	干热 Dry heat	Ref.item4.10.2 +110℃，16h	
		循环湿热 Circulating damp heat	Ref.item4.10.3 试验 Db,严酷度 b， Test Db, severity b, 第一次循环 First cycle	
		寒冷 cold	Ref.item4.10.4 －40℃，2h	
		低气压 Low pressure	在试验的最后 5 分钟，施加 U_R 无永久性击穿，飞弧或外壳底有害变形 At the end of the test, the last 5 minutes, the application of u_r without permanent breakdown, arc or shell bottom deformation	Ref.item4.10.5 15 ～ 35 ℃， 8.5Kpa,1h
	循环湿热 Circulating damp heat	在试验结束后，施加 U_R1 分钟 After the end of the test, apply u_r for 1 minute.	Ref.item4.10.6 试验 Db,严酷度 b，其余循环 Test Db, severity b, rest cycle	

No	项目	性能要求 Performance requirements	试验方法 (GB10190)Test method
6.3	最 后 测 量 Most Rear Measurement the amount	外观无可见损伤，标志清晰 No visible damage to the appearance, clear signs 电容量：△C/C≤初始测量值的±5% Capacitance: △c / c ≤ ± 5% of the initial measurement 损耗角正切：tgδ≤0.008 Loss tangent: tgδ≤0.008 耐电压：1.6U_RDC,5S 无击穿或飞弧 Withstand voltage: 1.6u_r dc, 5s without breakdown or arcing 绝缘电阻 IR：≥额定值（NO5.7）的 50% Insulation resistance ir: ≥ 50% of rated value (no5.7)	
6.4	稳压湿热 Regulated heat and humidity	外观无可见损伤，标志清晰 电容量：△C/C≤初始测量值的±5% 损耗角正切(1KHz)：tgδ的增加≤0.008 耐电压：1.6U_RDC,5S 无击穿或飞弧 绝缘电阻 IR：≥额定值（NO5.7）的 50% No visible damage to the appearance, clear signs Capacitance: △c / c ≤ ± 5% of the initial measurement Loss tangent (1KHz): increase in tgδ ≤0.008 Withstand voltage: 1.6u_r dc, 5s without breakdown or arcing Insulation resistance ir: ≥ 50% of rated value (no5.7)	Ref.item4.11 温度：40±2℃ Temperature: 40±2° C 湿度：93（+2/-3）%RH Humidity: 93 (+2/-3)% rh 持续时间：56 天 Duration: 56 days
6.5	耐久性 Durability	外观无可见损伤，标志清晰 No visible damage to the appearance, clear signs 电容量：△C/C≤初始测量值的±10% Capacitance: △c/c ≤ of the initial measured value±10% 损耗角正切(1KHz)：tgδ的增加≤0.008 Loss tangent (1KHz): increase in tgδ ≤0.008 耐电压：1.6U_RDC,5S 无击穿或飞弧 Withstand voltage: 1.6u_r dc, 5s without breakdown or arcing 绝缘电阻 IR：≥额定值（NO5.7）的 50% Insulation resistance ir: ≥ 50% of rated value (no5.7)	Ref.item4.12 +110℃，1000h 施加电压：1.25 倍额定电压 Ref.item4.12 +110℃，1000h Applied voltage: 1.25 times rated voltage
6.6	充电和放电 Charging and discharging	电容量：△C/C≤初始测量值的±10% 损耗角正切（1KHz）：tgδ的增加≤0.008 绝缘电阻 IR：≥额定值(NO5.7)的 50% Capacitance: △c/c ≤ ±10% of the initial measured value Loss tangent (1KHz): increase in tgδ ≤0.008 Insulation resistance ir: ≥ 50% of rated value (no5.7)	Ref.item4.13 次数：10000 次 充电持续时间：0.5S 放电持续时间：0.5S 充电电压为额定电压 充电电阻：220/C_R（Ω）或 20Ω（取较大者） C_R为标称电容量（μF） Number of times: 10,000 times Charging duration: 0.5s Discharge duration: 0.5s Charging voltage is rated voltage Charging resistance: 220/c_r(Ω) or 20 Ω (whichever is greater)C_r is the nominal capacitance (μF)

7.波峰焊接（最大焊接温度）Peak Welding (Maximum Welding Temperature)

7.1 焊接条件请按照右侧的焊接图表：Welding conditions should follow the welding chart on the right side:

	Tmax	Time	Note
预热 Pre-heating	110℃	1min	
	100℃	1min	OPP ≤ 7.5
焊接 Soldering	270℃	4s	
	260℃	4s	OPP ≤ 7.5



7.2 如需焊接两次，第二次焊接必须等到电容器恢复到常温。

If twice welding is required, the second welding must wait until the capacitor is restored to normal temperature.

7.3 插件产品仅适合使用波峰焊接 Plug-in products are only suitable for wave soldering

8 [illegible]ackaging and transportation requirements

[illegible]箱上标签上应标明 Labels on the inside of the bag and on the package should be marked

[illegible]rial number

b. 供方商标 Supplier trademark

c. 产品型号 Product model

d. 标称容量 nominal capacity

e. 允许容量偏差 Allowable capacity deviation

f. 额定电压 rated voltage

g. 生产批次号或生产日期 Production batch number or production date

h. 数量 Quantity

i. 检验员 Inspector

j. 包装员 Packer

8.2 包装方式 Packaging method

电容先用塑料袋包装,每袋 100 的整数倍,袋内放有合格证。然后装入包装箱。或以客户要求编带等

Capacitors are first packaged in plastic bags, an integral multiple of 100 per bag, and a certificate is placed in the bag.Then load it into the box.Or taped at the customer's request, etc.

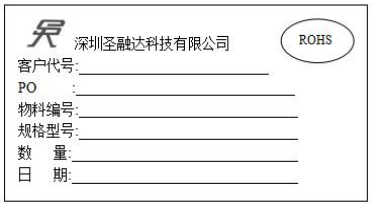
8.3 运输要求及储存 Transport Requirements and Storage

装有电容器的包装箱允许以任何方式运输,但应避免雨雪的直接淋浇和机械损伤；电容器应保存在 0℃～+35℃温度下，湿度≦70%以下，应避免温度剧烈变化，阳光直射和腐蚀性气体，存放期不超出 12 个月，如超过 12 个月以上的电容器，使用前应检查电气性能和可焊性试验确认后再投入使用。

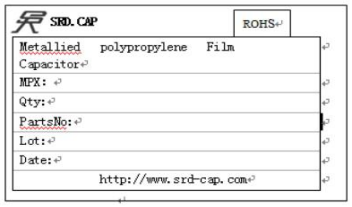
Packaging boxes equipped with capacitors are allowed to be transported in any way, but direct rain and snow pouring and mechanical damage should be avoided. Capacitors should be stored at temperatures ranging from 0 to + 35 C, with relative humidity below ≦75%, drastic temperature changes, direct sunlight and corrosive gases should be avoided. Storage period should not exceed 12 months, such as electricity over 12 months. Containers should be checked for electrical performance and weldability test before they are put into use.

8.4 本体标识、合格证及外包装标识 Body identification, certificate and outer packaging identification

外箱标签 Outer box label



内标签 Inner label



外箱图示 Outer case diagram

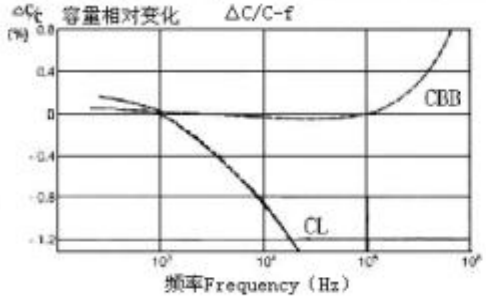
9.温度特性图 Temperature characteristic diagram

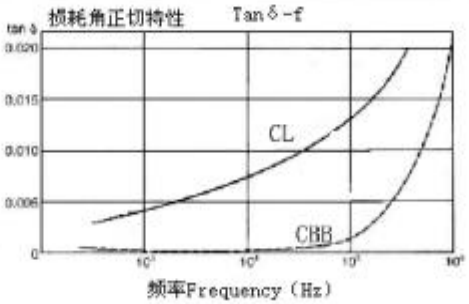
电容器特性PERFORMANCE CHARACTERISTICS

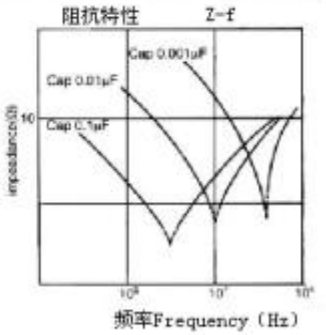
● 以下是容量为0.1μF的不同电容器的各种特性曲线表，容量和施加的电压不同时，特性会有一些差异。

★ Various characteristics are slightly different depending on capacitance and voltage. An example of measurement for capacitance 0.1μF is shown in the figures below.

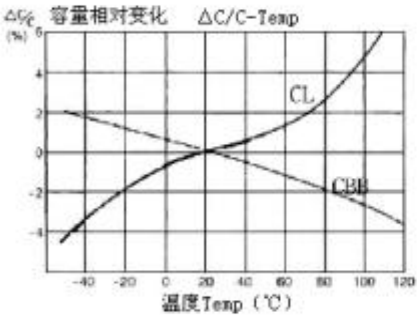
频率特性 / Frequency Characteristics

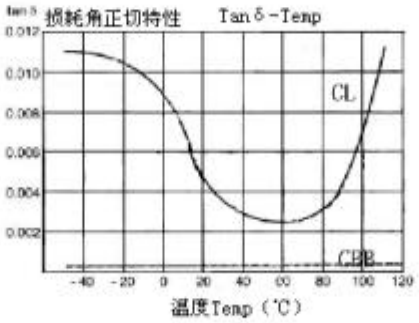


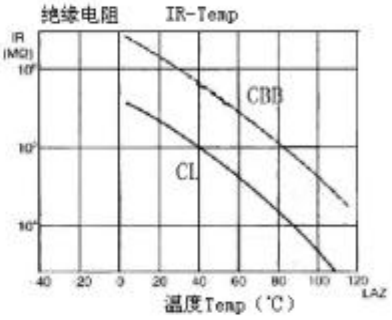




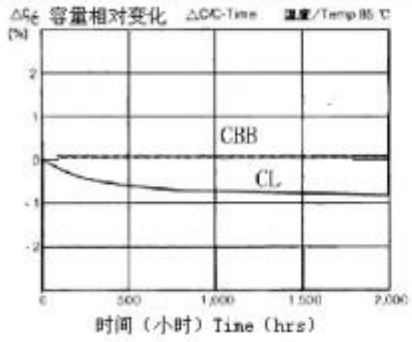
温度特性 / Temperature Characteristics

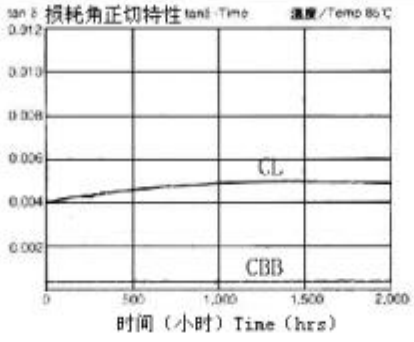


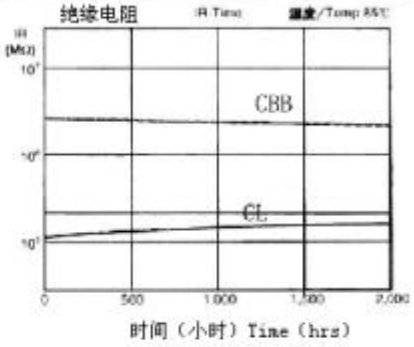




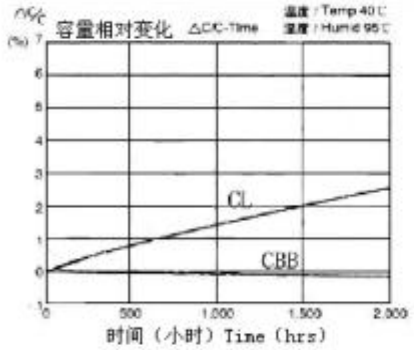
高温特性 / High Temperature Endurance

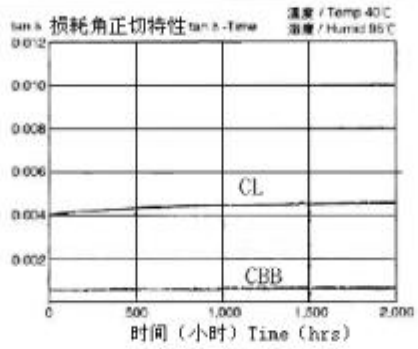


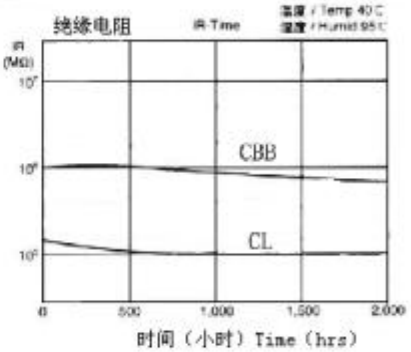




稳态湿热特性 / Damp Heat Endurance







10.测试条件 test condition

除非有附加说明，否则测量和测试会在以下环境条件下进行； 环境温度：5℃-35℃ 相对湿度：<70% 大气压：86Kpa-106Kpa ；在对结果有任何疑问的时候，测量和测试将会在以下条件下进行： 环境温度：20±2℃ 相对湿度：60%-70% 大气压：86Kpa-106Kpa

Unless otherwise specified, measurements and tests will be carried out under the following environmental conditions: Ambient temperature: 5℃-35℃, relative humidity:<70%, atmospheric pressure: 86 kPa-106 kPa; When there is any doubt about the results, the measurement and test will be carried out under the following conditions: ambient temperature: 20 2℃, relative humidity: 60%-70% atmospheric pressure: 86Kpa-106Kpa

11.使用注意事项 Precautions for use

1.电容器在高频尤其是高能量谐波作用下电容会产生较大的自身发热现象，自热太大会导致 电容器劣化或热破坏，因此，在设计和使用过程中，电容器因自热产生的温升应控制在 10℃以内。

2.由于高温对薄膜电容器性能影响很大，请设计电路时，勿将薄膜电容器贴近发热源（如功率管， 变压器等），这些发热器件散发的热量尽量不要辐射到电容器本体，防止电容器本体温度过高。

1.Under the action of high frequency, especially high energy harmonic, the capacitor will generate large self-heating phenomenon, and the self-heating will lead to capacitor deterioration or thermal damage. Therefore, the temperature rise of the capacitor due to self-heating should be controlled within 10℃ during the design and use process.

2. Since high temperature has a great influence on the performance of the thin film capacitor, please do not place the thin film capacitor close to the heating source (such as power tube, transformer, etc.) when designing the circuit. The heat emitted by these heating devices should not be radiated to the capacitor body as far as possible to prevent the temperature of the capacitor body from being too high.

16.变更（涉及下述内容的变更都会事先与客户联络，在客户认可后才会实施变更 ）

Changes (changes involving the following contents will be communicated with the customer in advance and will not be implemented until the customer approves them)

（1）安全规格变更 Safety specification change

（2）设计变更 Design change

（3）生产场所变更 Change of production site

（4）检查方法、作业方法变更 Changes in inspection methods and operation methods

17.我司所有产品均可以满足环保 ROHS 2.0 相关标准

All our products can meet the environmental protection ROHS 2.0 related standards.