承 认 书

APPROVAL SHEET

客户Customer：

种　　类：	导电性聚合物固体铝电解电容器
Description：	CONDUCTIVE POLYMER ALUMINUM ELECTROLYTIC CAPACITOR
系 列 SERIES：	CS
规 格 尺 寸 ITEM：	16v1000uF 8X12.5
绿宝石料号 BERYL P/N：	CS016M102SMD8*12.5T
客户料号 Customer P/N：	
日期Date：	2022年7月29日
编 号No. ：	20220729I

BERYL		
PREPARED	CHECKED	APPROVAL
批 准	审 核	制 作
何东石	黄文昊	蒋嘉雯

CUSTOMER		
PREPARED	CHECKED	APPROVAL
批 准	审 核	制 作

承认后，请签回一份，在下正式订单前如未签回承认书，视同默认本公司的相关标准及技术指标。
After approved, please sign back 1 Approval Sheet before order. If not, we will treat it as tacitly acknowledged and accepted our relative standard and technical index.

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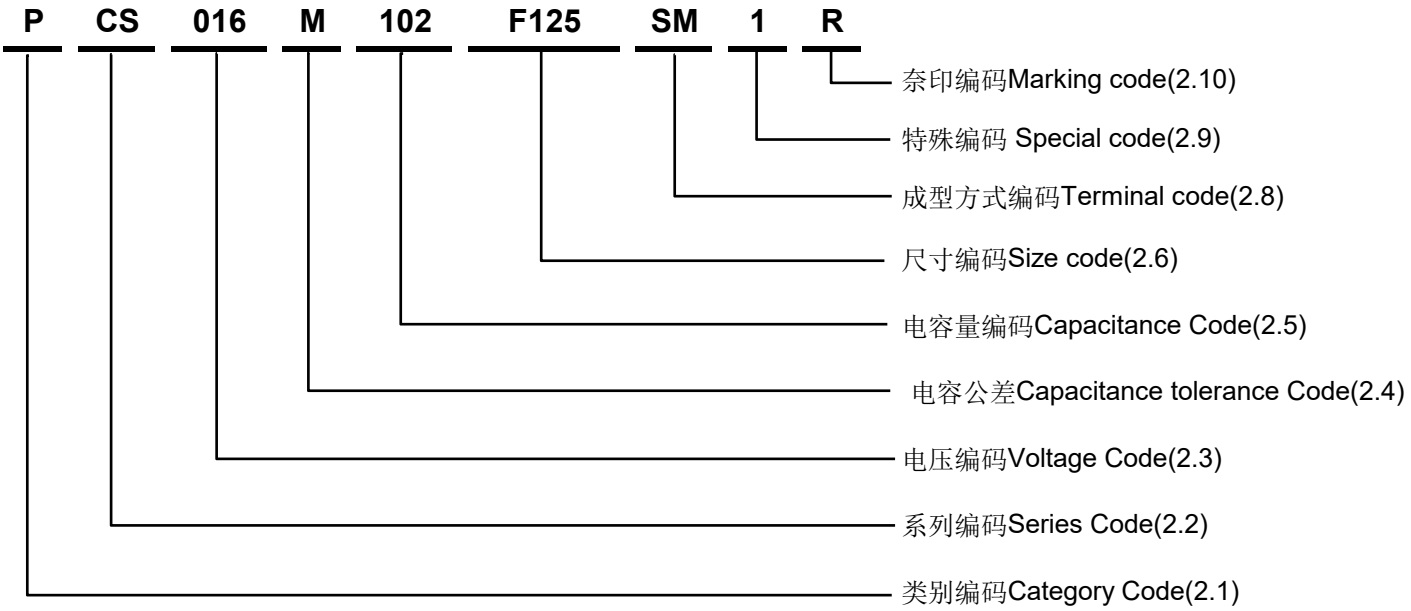
索引 Index

制订/修订履历表Make/revised curriculum vitae

编号NO.	版本Version	内容Content	日期Date
20220729I	20220729I-1		2022年7月29日

2.绿宝石料号 BERYL Product Part No



2.1 类别编码Category Code

编码Code	P
类别编码Category Code	导电性聚合物固体铝电解电容器 CONDUCTIVE POLYMER ALUMINUM ELECTROLYTIC CAPACITOR

2.2 系列编码Series Code

编码Code	CS
系列编码Series Code	CS

2.3 电压编码Voltage Code

编码Code	016
电压编码VoltageCode(W.V)	16

2.4 电容公差Capacitance tolerance Code

编码Code	M
电容公差Capacitance tolerance Code	±20%

2.5 电容量编码Capacitance Code

编码Code	102
电容量Capacitance (uF)	1000

2.6 尺寸编码Size code

编码Code	F125
直径D (mm)	8
高度H (mm)	12.5

2.7 成型方式编码Terminal code

编码Code	SM
成型方式编码Terminal code	SMD

2.8 特殊编码 Special Code

编码Code	1
特殊编码 Special Code	No special requirements

2.9 捺印编码Marking Code

编码Code	R
捺印Marking	Red Printing

3.产品特性 Characteristics

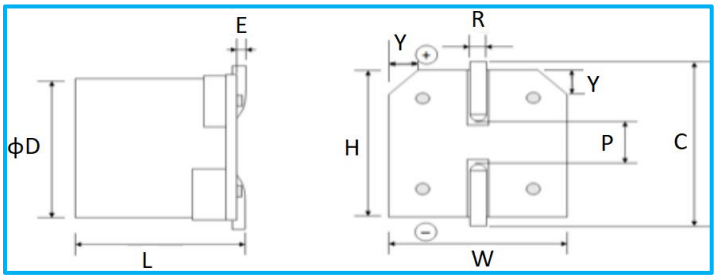
绿宝石料号 BERYL P/N	额定工作电压 Rated Voltage (V.DC)	电容量 Capacitance (120Hz,20℃) (uF)	电容量公差 Capacitance Tolerance	温度 Temperature (℃)	寿命 Load Life (hours)
	16	1000	±20%	-55 ～ 105	2000
CS016M102SMD8*12.5T	尺寸 Size Φ D×L(mm)	损失角 DF (120Hz,20℃) (% max)	等效串联电阻 ESR (100KHz,20℃) (mΩ max)	泄漏电流 LC (2min/w.v) (uA max)	纹波电流 RC (100KHz,105℃) (mA rms)
	8 x 12.5	12	20	3200	4100

3.1纹波电流频率系数Frequency coefficient for ripple current

频率Frequency	120Hz≦f＜1kHz	1KHz≦f＜10kHz	10KHz≦f＜100kHz	100KHz≦f＜300kHz
系数Coefficient	0.05	0.3	0.7	1

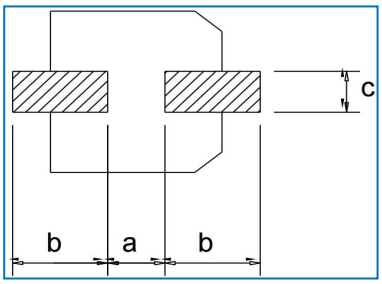
4.产品尺寸 Product Size

4.1 外部尺寸 Outer dimensions



尺寸代码 Size code	φD ±0.5 (mm)	L (mm)	E (mm)	W ±0.2 (mm)	H ±0.2 (mm)	C ±0.2 (mm)	R (mm)	P ±0.3 (mm)	Y ±0.03 (mm)
C058	5	5.8±0.3	≤0.2	5.3	5.3	6.0	0.5~0.8	1.4	2.0
E058	6.3	5.8±0.3	≤0.2	6.6	6.6	7.3	0.5~0.8	2.1	1.5
E100	6.3	10±0.3	≤0.2	6.6	6.6	7.3	0.5~0.8	2.1	1.5
F069	8	6.9±0.3	≤0.2	8.3	8.3	9.0	0.8~1.1	3.2	1.5
F125	8	12.5±0.3	≤0.2	8.3	8.3	9.0	0.8~1.1	3.2	1.5
G105	10	10.5±0.5	≤0.2	10.3	10.3	11.0	0.8~1.1	4.6	2.0
G125	10	12.5±0.5	≤0.2	10.3	10.3	11.0	0.8~1.1	4.6	2.0

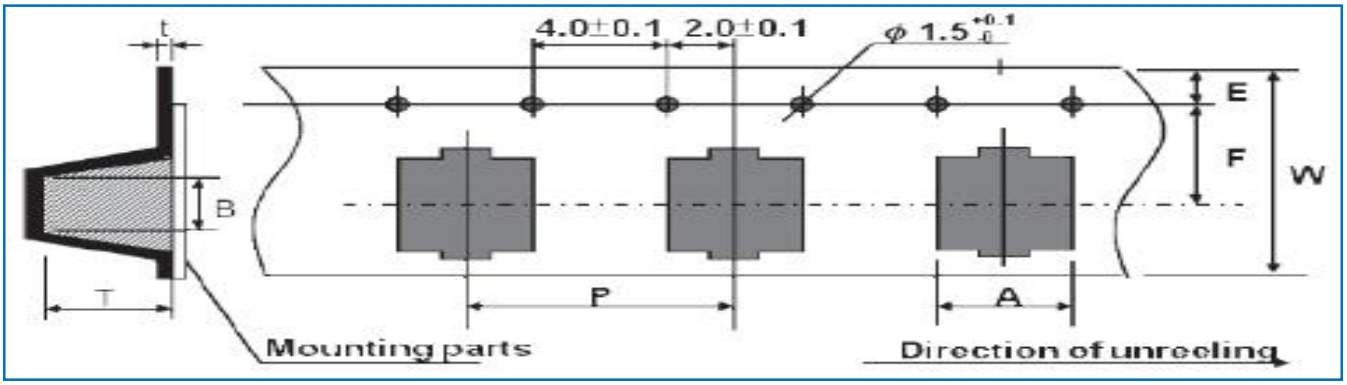
4.2 焊盘尺寸 Soldering pad dimensions



尺寸代码 Size code	a (mm)	b (mm)	c (mm)
C	1.4	3.0	1.6
E	2.1	3.5	1.6
F	2.8	4.2	1.9
G	4.3	4.4	1.9

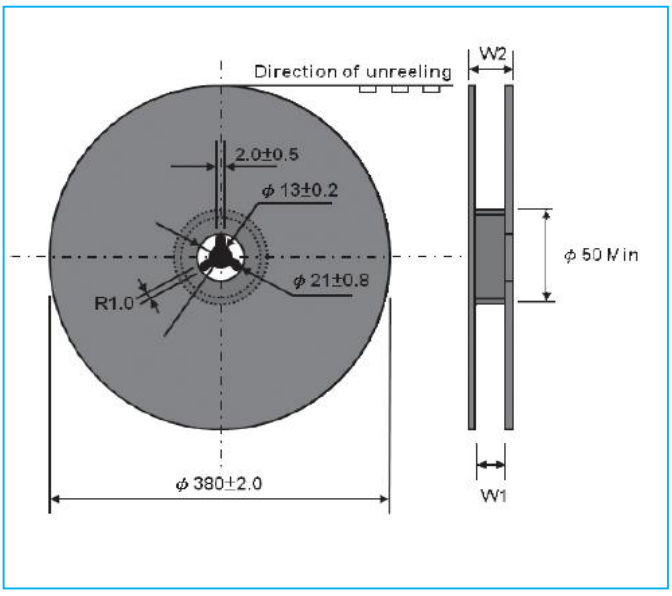
5. 胶带包装和标签标记 Taping packing and label marking

5.1 载带尺寸 Carrier tape dimensions



尺寸代码 Size code	A ±0.2 （mm）	B ±0.2 （mm）	W ±0.3 （mm）	F ±0.1 （mm）	E ±0.1 （mm）	P ±0.1 （mm）	t ±0.1 （mm）	T ±0.1 （mm）
5x5.8	5.6	5.6	16.0	7.5	1.75	12.0	0.4	6.2
6.3x5.8	7.0	7.0	16.0	7.5	1.75	12.0	0.4	6.2
8x12.5	8.6	8.6	24.0	11.5	1.75	16.0	0.4	13.0
10x10.5	10.7	10.7	24.0	11.5	1.75	16.0	0.4	11.0

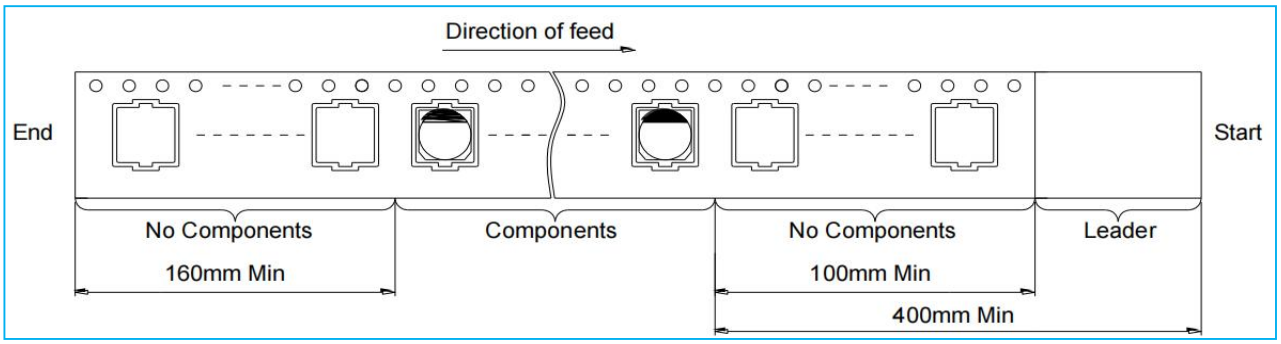
5.2 卷轴尺寸 Reel dimensions



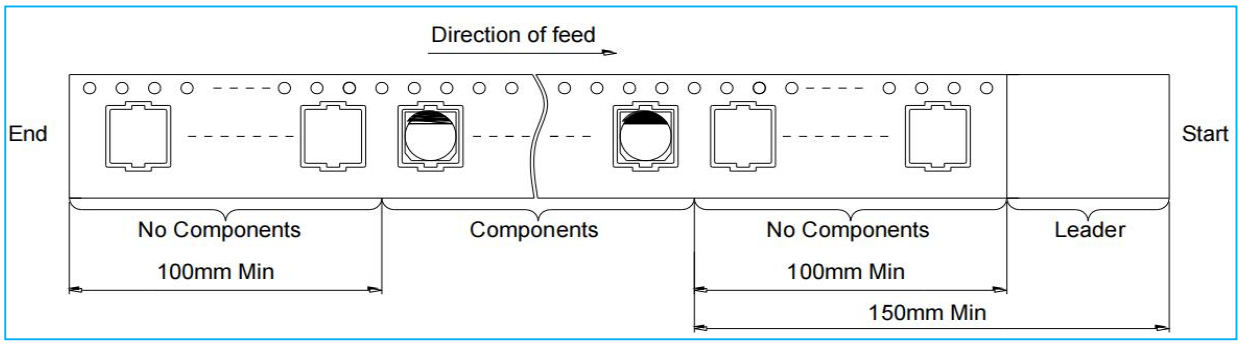
尺寸代码 Size code	W1 ±0.2 （mm）	W2 ±0.2 （mm）	Q'ty/Reel （Pcs）
5x5.8	18.0	22.0	1200
6.3x5.8	18.0	22.0	1000
8x12.5	26.0	30.0	500
10x10.5	26.0	30.0	400

5.3 胶带的方法和极性 Taping method and polarity

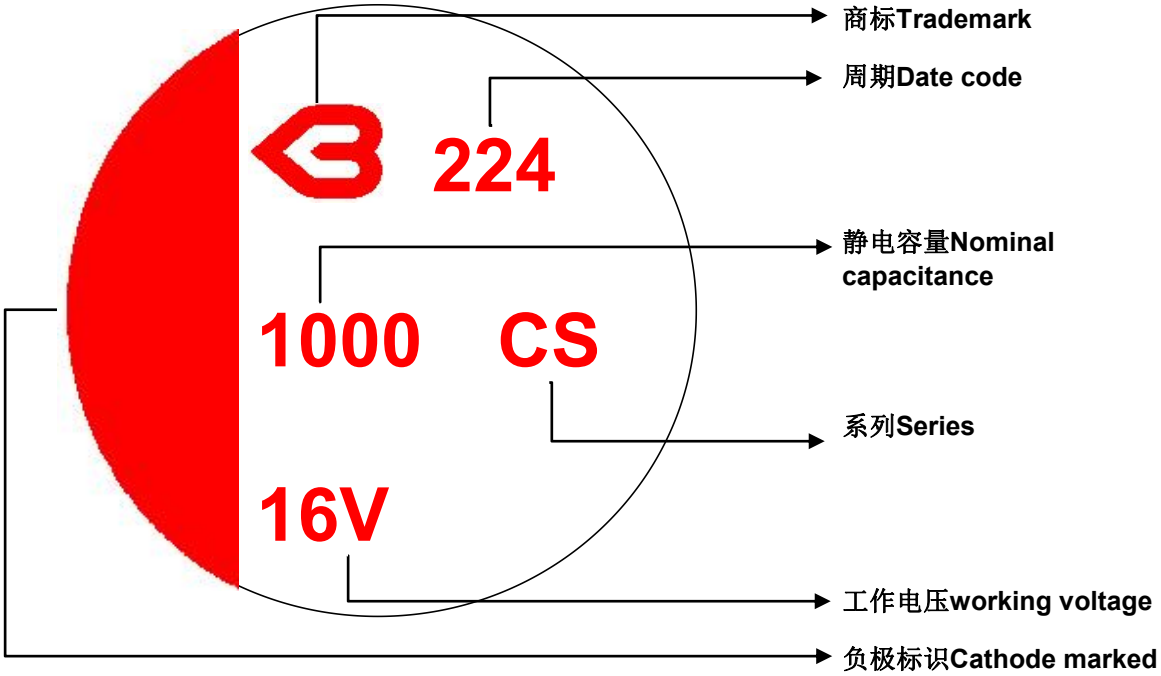
5.3.1 5、6、8 phi



5.3.2 10 phi



5.印字 Marking



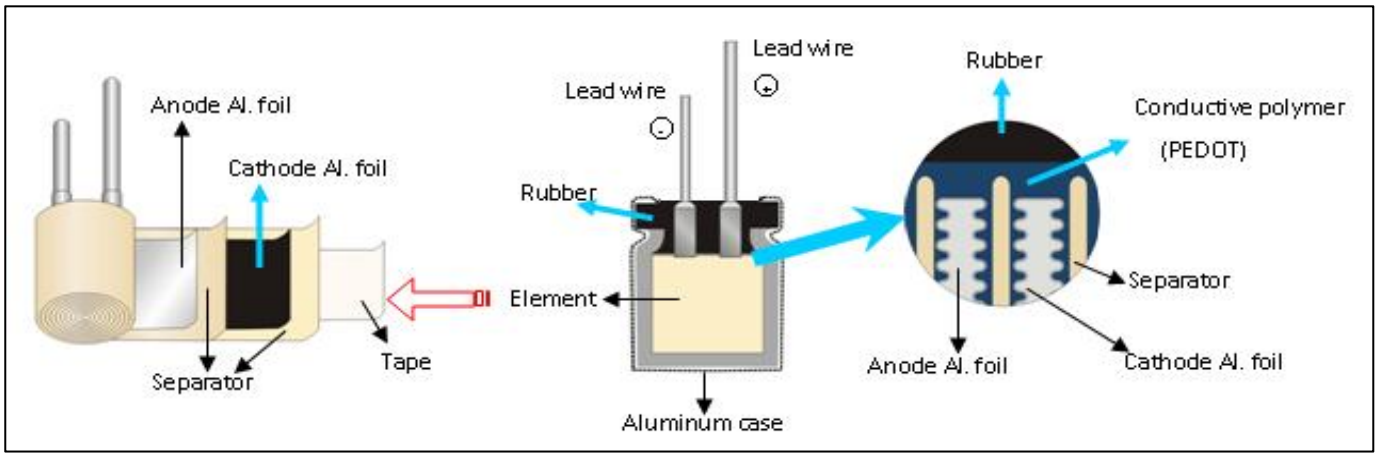
周期表示说明Description of the date code

2 24

编码Code	01	02	03	04	……	50	51	52
周别Week	1	2	3	4	……	50	51	51

编码Code	1	2	3	4	5	6	7	8
年份Year	2021	2022	2023	2024	2025	2026	2027	2028

6.产品结构图 Product Structure Diagram



7.电气特性 ELECTRICAL CHARACTERISTICS

7.1条件说明

7.1.1 使用温度范围Operating Temperature Range

使用温度范围是指电容在额定电压下可以稳定运行的环境温度范围

Operating temperature range is the range of ambient temperature at which the capacitor can be operatedcontinuously at rated voltage.

7.1.2 特性Characteristics

除非另有说明，标准的测量和测试环境条件如下：

Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests are as follows.

环境温度Ambient temperature： 15 to 35℃

大气力压Air pressure：86kpa to 106kpa

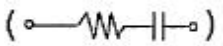
若对结果有疑问，测试则按如下标准进行

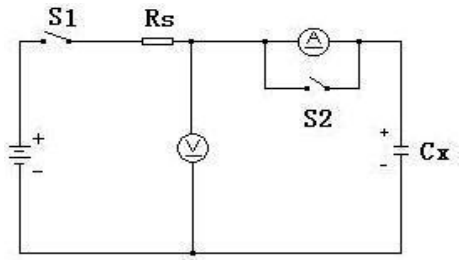
If there may be doubt on the results, measurements shall be made within the following limits.

环境温度Ambient temperature： 20±2℃

大气压Air pressure：86kpa to 106kpa

7.2 电性能Electrical Characteristics

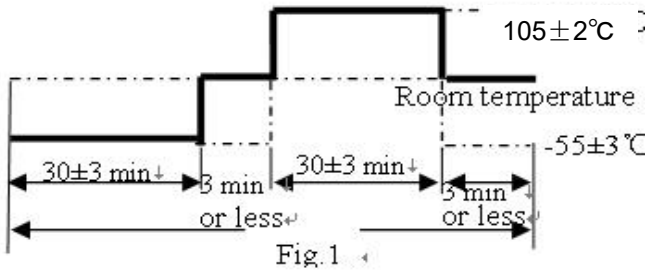
序号No.	项目Item	测试方法 Test method	性能 Performance
7.2.1	额定工作电压 Rated voltage	DC：	
7.2.2	电容量 Capacitance	测试频率Measuring frequency : 120Hz 测试电路Measuring circuit  等效串联电路Series equivalent circuit 测试电压Measuring voltage: 0.5Vrms or less 直流偏压DC bias voltage : +1.5~2.0VDC	参考特性表 Refer to characteristic table
7.2.3	损失角正切值 Dissipation Factor		参考特性表 Refer to characteristic table
7.2.4	等效串联电阻 ESR	测试频率Measuring frequency: 100kHz 测试温度Measuring temperature: 20 ±2℃ 测量位置：不得超过导针焊点2mm。 Measuring point : 2mm max from the surface of a sealing resin on the lead wire	参考特性表 Refer to characteristic table

<table>
<tr><th>序号No.</th><th>项目Item</th><th>测试方法 Test method</th><th>性能 Performance</th></tr>
<tr><td>7.2.5</td><td>漏电流
Leakage current</td><td>直流漏电流在20℃，有串联1000±100Ω电阻的情况下以直流工作 电压且充电2min后测试
DC leakage current shall be measured after 2 minutes application of the DC rated working voltage through the1000 Ω resistor at 20℃
 

Refer to characteristic table
R : 1000±100Ω
A :电流表 DC current meter
S1 : 开关Switch
S2 : 电流表保护开关 Switch for protect of current meter
V:电压表 DC voltage meter
CX : 测试电容Testing capacitor</td><td>参考特性表
Refer to characteristic table</td></tr>
<tr><td>7.2.6</td><td>高温&低温性
Characteristicsat Hight Temperature & Low Temperature</td><td>
<table>
<tr><th>步骤
Step</th><th>温度(℃）
Temperature</th><th>时间（h）
Time</th><th>测试项目
Measurement item</th></tr>
<tr><td>1</td><td>20±2</td><td>2</td><td>容量、损失角正切、阻抗
Capacitance,tanδ,|Z|</td></tr>
<tr><td>2</td><td>-55 ±2</td><td>2</td><td>容量、阻抗 Capacitance,|Z|</td></tr>
<tr><td>3</td><td>20±2</td><td>0.5</td><td>/</td></tr>
<tr><td>4</td><td>105 ±2</td><td>2</td><td>阻抗、漏电 |Z| ,LC</td></tr>
<tr><td>5</td><td>20±2</td><td>2</td><td>容量、损失角正切
Capacitance,tanδ</td></tr>
</table>
备注Remarks：
120Hz：Capacitance,tanδ
100KHz：|Z| ,ESR</td><td>Step 1:容量、损失角在规格值内 Capacitance,tanδ shall meet the specified value
Step 2:容差±30% Capacitance change:Within±30% of step1
阻抗比率小于1.25
|Z|(-55℃)/|Z|(20℃）Less than 1.25
Step 4: 漏电流≤规格值的150%
Leakage current≤ 150% of the initial specified value.
阻抗比率小于1.25 |Z|（105℃）/|Z|(20℃）Less than 1.25
Step 5: 容差±5% Capacitance change :Within±5% of step1
损失角在规格值内 tanδ shall meet the specified value.</td></tr>
</table>

7.3 耐受能力Endurance Performance

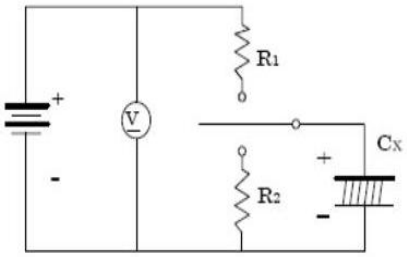
序号No.	项目Item	测试方法 Test method	性能 Performance
7.3.1	负荷寿命试验 Load Life Test	电容在 105 ±2℃,加载直流电 2000 小时后，需在室温下放置2小时 才可进行测试。 After 2000 hours continuous application of DC rated working voltage at 105 ± 2℃,the measurements shall be measured after 2 hours exposed at room temperature.	容量变化：在初始值的±20%内 Capacitance change within ±20% of the initial value 损失角：小于规格值的150% tan δ ≤ 150% of the initial specified value. 等效串联电阻≤规格值的150% ESR ≤ 150% of the initial specified value. 漏电流≤规格值 Leakage current ≤initial specified value. 外观：没有明显的损伤 Appearance:No significant damage
7.3.2	振动试验 Resistance to Vibration	依照JIS C 5102 8.2和 JIS C 5025 To comply with JIS C 5102 8.2 and JIS C 5025 频率：10到55Hz(1分钟间隔/10→55→10Hz) Frequency: 10 to 55Hz (1 minute interval/10→55→ 10Hz) 振幅：0.75mm(整体偏移1.5mm) Amplitude : 0.75mm (Total excursion 1.5mm) 方向：X, Y, Z (3 轴) Direction : X , Y , Z (3 axes) 持续时间：2小时/轴（共6小时） Duration : 2 hours / axial (Total 6 hours)	容量在30 分钟内测量，与初始值相比不应有较大的差异，其改 变在±5%以内 Capacitance value should not show drastic change compared to the initial capacitance when the value is measured within 30 miniutes .Prior to the completion of exam, capacitance change should be within ±5% compared to the initial value after the exam
7.3.3	可焊性 Solder ability	温度：235 ± 5 °C Temperature : 235 ± 5 °C 持续时间：2 ± 0.5秒 Duration : 2 ± 0.5 seconds 焊料:25wt%的松香(JIS K5902)//乙醇(JIS K 8101) Flux:Rosin (JIS K5902)//Ethanol(JIS K8101); About 25 wt.%	容量在30 分钟内测量，与初始值相比不应有较大的差异，至少95%的浸渍表面覆盖有新的焊料 At least 95% of surface area of the dipped portion of the terminal shall be covered with new solder.

序号No.	项目Item	测试方法 Test method	性能 Performance
7.3.4	耐焊接热 Resistance to soldering heat	(1)焊料浴方法Solder bath method 温度Temperature : 260 ±5°C 持续时间Duration : 10±1 seconds 一直到间距为1.0mm的情况下 Until a distance of 1.0mm from the case. (2)Soldering iron method : 温度Temperature : 400 ± 10 °C 持续时间Duration : 3+1/-0 seconds	容量变化在初始值的±5%内 Capacitance change: Within ± 5% of initial capacitance 损失角≤ 规格值的130% Tanδ≤ 130%of the initial specified value. 等效串联电阻≤ 规格值的130% ESR ≤ 130% of the initial specified value. 漏电流≤规格值 Leakage current ≤initial specified value.
7.3.5	稳态湿热 (恒稳态) Resistance to damp heat (steady state)	温度Temperature : 60±2℃ 相对湿度Relative humidity : 90% ~ 95% 持续时间Duration : 2000 (-0/+48) hrs 使用电压：无负荷 Applied voltage : without load	电容变化在初始值的±20%内 Capacitance change within ±20% of initial value 损失角≤ 规格值的150% tan δ ≤ 150% of t he initial specified value. 等效串联电阻≤ 规格值的150% ESR ≤ 150% of the initial specified value. 漏电流≤规格值 Leakage current ≤initial specified value.
7.3.6	快速变温 Rapid change of temperature	 Fig.1 使用电压：无负荷 Applied voltage : without load 循环次数：5次 Cycle number :5 Cycles 测试图:Fig. 1Test diagram: Fig. 1	容量变化：在初始值的±10%内 Capacitance change : Within ±10% of the initial capacitance 损失角：小于或等于规格值 tan δ ≤ initial specified value. 漏电流≤规格值 Leakage current ≤initial specified value.

<table>
<tr><th>序号No.</th><th>项目Item</th><th>测试方法 Test method</th><th>性能 Performance</th></tr>
<tr><td rowspan="2">7.3.7</td><td rowspan="2">浪涌电压
Surge voltage</td><td>浪涌电压（额定电压×1.15）施加在360秒的循环
中，包括充电30±5秒和放电330秒，在 105 ℃
的1000次循环中，特性应满足右表

After surge voltage(rated voltage×1.15) applied at a cycle of 360 seconds which consists charge for 30±5 seconds and discharge for 330 seconds, for 1000

cycles at 105 ℃, the characteristics shall meet

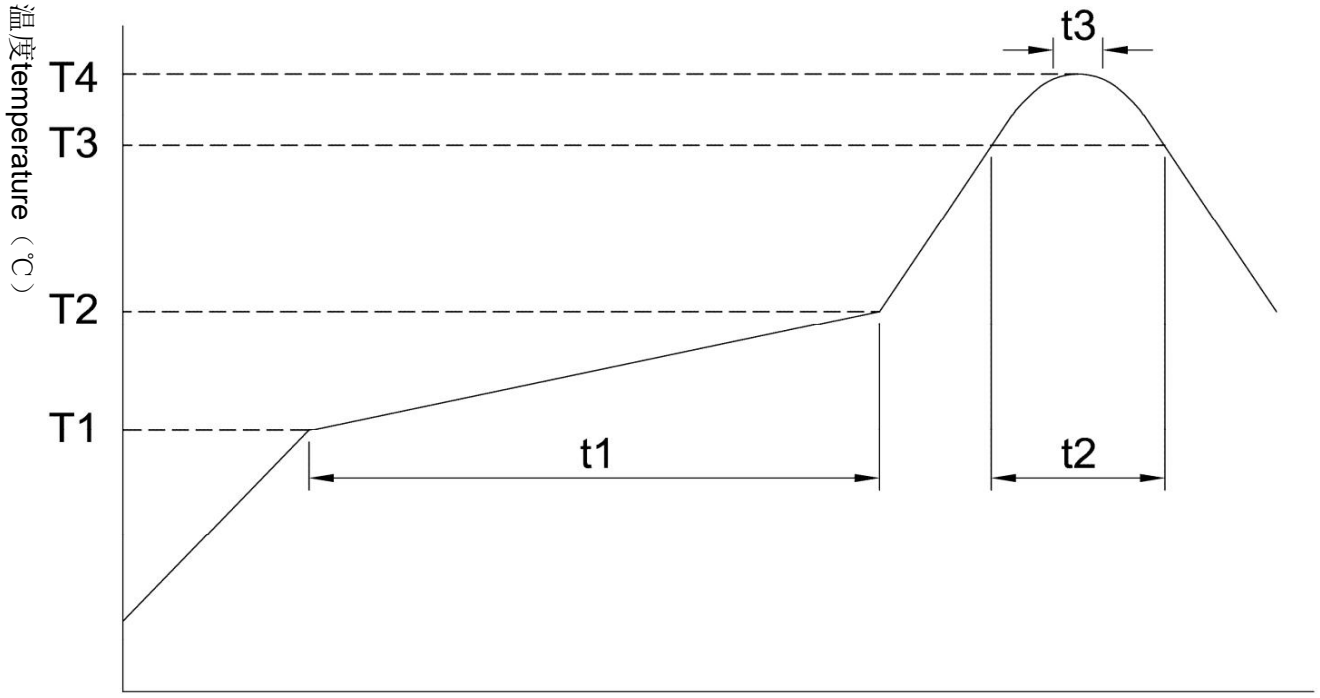
right sheet.</td><td>容量改变在初始值的±20%内
Capacitance change within ±20% of initial value
损失角≤规格值的150%
tanδ≤150% of the initial specified value.
阻抗≤规格值的150%
ESR≤150% of the initial specified value.
漏电流≤规格值
Leakage current≤ specifiedvalue</td></tr>
<tr><td colspan="2"> 

V：DC voltmeter
R1：Protective resistor 1kΩ
R2：Discharging resistor 1kΩ
Cx：Capacitor under test（10pcs）
备注：若浪涌电压测试标准不能满足整机实际ON/OFF要求，请在样品阶段与我司RD确认，并将 具体测试要求反馈给我司，包括测试电压、浪涌电流、充放频率、循环次数、测试温度及性能表 现等。
Remark：If the surge voltage test standard is inconsistent with the actual ON/OFF requirements of the machine, Please confirm with our RD at the sample stage.And feedback the specific test requirements to our company, including test voltage,surge current, charge and discharge frequency, cycle times, test temperature and performance, etc.</td></tr>
<tr><td>7.3.8</td><td>端子强度
Terminal Strength</td><td>测试方法 Test method
端子抗拉强度：
沿电容器端子引线方向施加拉力（如下表），30±1s
Tensile strength of termination:
A static load (stated in the table below) shall be applied to the terminal in the axial direction and acting in a direction away from the body for 30±1sec.
<table>
<tr><td>引线直径Φ（mm）</td><td>0.45</td><td>0.50</td><td>0.60</td><td>0.80</td><td>1.00</td></tr>
<tr><td>拉力（N）</td><td>5</td><td>5</td><td>10</td><td>10</td><td>25</td></tr>
</table>
端子抗弯强度： 在电容器引线施加固定重力（如下表），然后，将电容器弯折 90°后回到原位，再向相反方向弯折90°后回到原位。 上述过程在5秒内完成。
Bending strength of termination: Hang the specified dead weight (stated in the table below), then bent the body through 90°, return to the original position.Next bent it in opposite direction through 90°with the same speed, again return to the original position. Carry out this operation in about 5 sec.
<table>
<tr><td>引线直径Φ（mm）</td><td>0.45</td><td>0.50</td><td>0.60</td><td>0.80</td><td>1.00</td></tr>
<tr><td>拉力（N）</td><td>2.5</td><td>2.5</td><td>5</td><td>5</td><td>10</td></tr>
</table></td><td>测静电容量时，无接触不良，断线及短路．另，无端子的破损等机械损伤．
When the capacitance is measuered. There shall be no intermittent contacts, or open- or short-circuiting.There shall be no such mechanical damage as terminaldamage etc.</td></tr>
</table>

8.焊接条件 ELECTRICAL CHARACTERISTICS

8.1 回流焊条件（仅限于SMD产品或有高温回流焊要求的DIP产品）

Reflow soldering conditions (limited to SMD products or DIP products with high temperature reflow soldering requirements)



产品类别 product category		高分子固态电容器 Solid		高分子固液混合电容器 Hybrid		
预热 Preheat	温度temperature（T1～T2,℃）	150～200		150～180		
	时间time（t1）（最大max，S）	180		120		
持续时间 duration	温度temperature（T3,℃）	230		200	217	230
	时间time（t2）（最大max，S）	60		70	50	40
最高温度 Highest temperatures	温度temperature（T4,℃）	250	260	250	260	
	时间time（t3）（最大max，S）	5		5		
回流焊次数The number of reflow		2	1	2	1	

8.2 以铬铁焊锡时请依循下列条件作业：

When soldering with ferrochromium, please follow the following conditions

* 铬铁最高温度：350 ± 5℃

*Maximum temperature of ferrochromium: 350 ± 5 ℃

* 焊接时间：3 +1 / -0 秒

* Welding time: 3 +1 / -0 seconds

9.操作注意事项Operating Precautions

9.1 极性Polarity

Beryl CAP是具有正负极的固态铝电解电容，使用中不可反接，若接反，则电容会因为漏电流不断增大或短路而造成寿命缩短。

Beryl CAP is a solid aluminum electrolytic capacitor with positive and negative electrodes. Do not reverse the polarity when using.If it is used with the polarities reversed, its life may shorten because of increasing leakage current or short circuit.

9.2 禁止电路 Prohibited circuits

因为焊接及其它动作可造成电容的漏电流增加，BerylCAP不可使用在下列电路中：

Since problems can be expected due to leakage current increasing during soldering and other processes, BerylCAP cannot be used in the following circuits

1)高阻抗电路1) High impedance circuits；

2)耦合电路2) Coupling circuits；

3)时限恒量电路3) Time constant circuits；

4)为提高耐电压而串联两个或多个电容于电路中

4) Connection of two or more capacitors in series for higher withstand voltage；

5)电路因漏电流过大而有坏的影响5)Circuits to get bad influence by big leakage current

* 除漏电流的波动上升外，电容的使用条件如在承认书中规定的高温和低温，温热和耐受性条件都会影响电容量。若电容作为时限恒量电容使用，因其对电容量的变动的敏感性，电容量的改变会造成影响。不要将其作为时限恒量电容使用，同时若因电压原因要串联多个BerylCAP电容，请联系肇庆绿宝石电子科技股份有限公司。

* In addition to the leakage current fluctuation above, the operational conditions such as characteristics at high and low temperature, damp heat and endurance stipulated in the specifications will affect the capacitance.The fluctuation of the capacitance may cause problem if it is used as a time constant capacitor, which is extremely sensitive to the fluctuation of the capacitance. Do not use it as a time constant capacitor.Additionally, please contact ZhaoQing Beryl Electronic Technology Co., Ltd. for usage of two or more BerylCAP in series for voltage proof.

9.3 电压Over voltage

电压若超过额定电压，即便只是一瞬间也可能造成短路

Over voltage exceeding the rated voltage may not be applied even for an instant as if may cause a short circuit.

9.4 快速充放电Rapid charge and discharge

快速充放电是不适用的（为了维持高的可靠性）。若充放瞬间电流超过10A或10倍允许纹波电流超过10A，为防止快速的充放电造成电容短路、漏电增大及容量衰减，电路中应加上一个保护电路用以分流过大的电流，用保护电路。

Rapid charging and discharging is unsuitable(for maintenance of high-proof reliability). If the instantaneous current of charging and discharging is more than 10A or 10 times of the allowable ripple current is more than 10A, in order to prevent the capacitor lshort ,eakage increase and capacity reduction caused by rapid charging and discharging, a protection circuit shall be added to the circuit to reduce the excessive current.

9.5 焊接注意事项Considerations when soldering

焊接条件要在承认书的规定范围内。若没有遵守承认书的条件，则电容漏电流可能急剧增加，容量衰减。

The soldering conditions are to be within the range prescribed in specifications. If the specifications are not followed,there is a possibility of the cosmetic defection, the intensive increase of leakage current, and the capacitance reduction.

使用需知Things to be noted before mounting.

(a) 已安装过的或加过电压的BerylCAP请勿再使用。经历了周期性电性能测试的BerylCAP不可再用。

(a) Do not reuse BerylCAP that have been assembled in a set and energized. Excluding BerylCAP that have been removed for measuring electrical characteristics during a periodic inspection, BerylCAP cannot be reused

(b) BerylCAP贮藏一年时间后，漏电流可能会增大，使用前，请在105℃ ，额定电压及接有1 kΩ电阻的条件下充电2小时。

(b)Leakage current may increase when BerylCAP are stored for one year. In this case, apply rated voltagefor 2 hour at 105℃ with load of 1 kΩ resistor.

(c)回流焊接Reflow soldering

插件型产品不适用于回流焊接作业。若需进行回流焊作业，请先联系肇庆绿宝石电子科技股份有限公司

Do not apply radial lead type capacitors to reflow soldering.If reflow soldering is required,please contact ZhaoQing Beryl Electronic Technology Co., Ltd.

(d)焊接后处理Handling after soldering

在这之后，不要倾斜，弯曲或扭曲BerylCAP Do not tilt, bend or twist the BerylCAP after it

不可通过抓捏BerylCAP来移动印刷电路板Do not move the PCB with catching BerylCAP itself.

堆叠印刷电路板时确保BerylCAP没有碰触到其它电路板或部件

When stacking PCB make sure that the BerylCAP does not touch other PCB or components.

不可将BerylCAP与其它物品堆放Do not dump the BerylCAP with objects.

9.6 贮存Storage

1)请将BerylCAP贮存于温度在5to 35℃之间，相对湿度在75%以下的没有阳光直射的环境中，如果可能可贮 存于包裹中。

(如果在35到85℃，他应该少于三个月)

1)Store BerylCAP with the temperature range between 5to 35℃（If between 35 to 85℃, it should be less than three months），and the relative humidity of 75% or less without direct sunshine and store BerylCAP in the package states if possible.

2)BerylCAP请在使用前再打开包装袋并且快速用完。

BerylCAP are recommended that you shall open the bag just before use and BerylCAP shall be used up.

3)不要在有水、盐水、油及凝结状况的地方贮存BerylCAP

Never store BerylCAP in which it is directly exposed to water, brine, oil or in condensation status.

4)禁止在含有毒气体的区域放置BerylCAP（如：硫化氢、亚硫酸、亚硝酸、氯气、氨水等）

Never store BerylCAP in any area filled with poisonous gases(including hydrogen sulfide, sulfurous acid, nitrous acid, chlorine and ammonia).

5)禁止在有紫外线或放射性辐射的区域放置BerylCAP。

Never store BerylCAP in any area to which ultraviolet and/or radial rays are radiated.

6）存储时间storage time

NO	物料名称 Material Name	有效保存期限（开启包装前） "Valid Shelf Life (before unpacking)"	有效保存期限（开启包装后） "Valid Shelf Life (after unpacking)"	超过有效保存期限处理方式 Handling Method for Exceeding the Valid Storage Period	最大保存期限 Maximum Shelf Life	超过最大保存期限处理方式 Handling Method for Exceeding the Maximum Storage Life
1	固态电容器插件胶袋包装 Solid Capacitor Radial Lead Type Plastic Bag Packaging	36个月 Thirty-six months	7天 Seven Days	转入"逾期品仓库"出货前先作重工处理，任何一项参数判定NG作正常报废处理，参数OK依正常流程出货 Before transferring to the "overdue product warehouse", rework should be done before shipment. Any parameter is judged as NG for normal scrapping, and if the parameter is OK, the product will be shipped according to the normal process.	3年 3 Years	报废处理 Scrap Disposal
2	固态电容器插件编带 Solid Capacitor Radial Lead Type Tape Packaging	24个月 Twenty-four months	7天 Seven Days			
3	固态电容器表面贴装 Solid Capacitor SMD Packaging	24个月 Twenty-four months	30天 Thirty Days			

9.7 清洗Cleaning

关于HCFC，可用高浓酒精，石油，匝烯，水和表面活性剂以及别的溶剂（单独或混合使用）浸泡，用超声波，煮沸，蒸发等方法按制作者的建议清洗。更多详情请联系。

Concerning about HCFC, higher alcohol system, petroleum system, terpene system, water system with surface active agent and other solvents the washing way (separateness or combinations) by soak, ultrasonic wave, boil, vapor etc. is confirmed under the maker's recommendation. Please contact us if you require further details.

对于构成部品的材料，处理的注意事项 NOTICE ON MANUFACTURING PROCESS

●记载内容不变更而添加 ●Don't change written contents and append it.

1.此部品不使用含有RoHS的指定物质.

2.对于RoHS物质使用的有无在承认书上要明确规定.

3.为部品易区分处理．对塑胶材料要标识材料记号

所谓标识记号详细请参照RoHS[塑胶制部品的材料标识规定」

但，标识困难时排除.

「困难例」

. 无记入标识记号的场所.

. 因要记入标识可能会造成机能损坏.

. 因生産方法标识困难。

4.成型用树脂．油墨，涂料，覆盖电线要从绿色环保伙伴认定厂商购买.

1.This part should not contain any substances which are specified in RoHS

2.Clarify by delivery specifications about the existence of use of the substance which are specified in RoHS

3.In order to make sorting of plastic waste easy, material symbols is marked on the plastic part

For details on marking symbols, refer to RoHSMarking of plastic parts and packaging material".

Marking may be cmitted in the following cases:

. Not enough space to apply the marking

. Marking would interfere with performance or funcional requirements

. Marking technically not feasible due to the specific production method

4.Purchase ink, paint,wire rods. And molding resins only from the business partners that Sony approves as Green Partners.

包装.Packing

包装标签内容Packing Label Marked (the following items shall be marked on the label)

(Inside box or bag)

(1)客户订单号码　(2)客户料号　(3)本厂料号　(4)产品容量

(5)产品电压　(6)产品尺寸　(7)包装数量　(8)产品容量范围

(9)QC检验印章处.　(10)产品生产批号

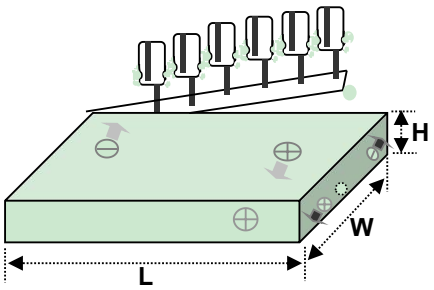
批号的填写 LOT Number ：

12　34　56　7 8 9 10

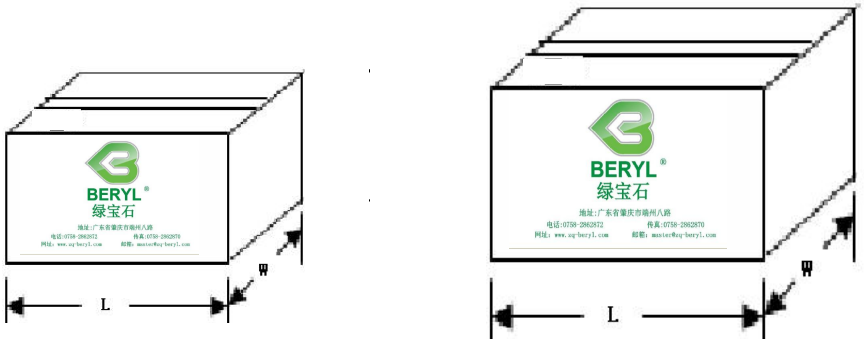
年份　月份　日期　生产序号

year　month　date　number

编带产品按下图包装方式

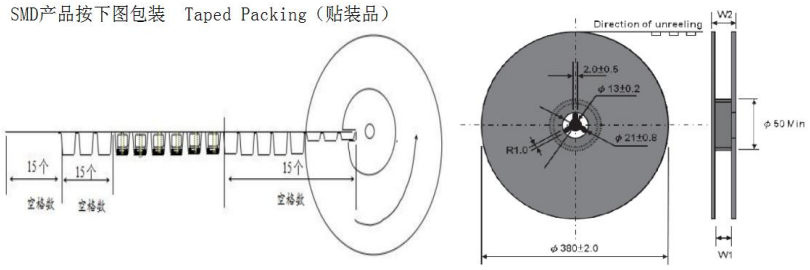


散包装按下图包装方式Bulk Packing



SMD包装按下图包装方式Taped Packing

SMD产品按下图包装　Taped Packing（贴装品）



制品尺寸	PCS/卷盘	卷盘/内箱	PCS/内箱	PCS/ 外箱	产品加工形态
8Φ×12.5	500	3	1500	3000	贴片品

BERYL 肇庆绿宝石电子科技股份有限公司

Zhao Qing Beryl Electronic Technology Co., Ltd.

固态电容器检查表

TEST REPORT FOR ELEC CAPACITIORS

MESSRS

宝　号：_____ TYPE: CS

SPECIF

规　格：1000 uF 16 V

SIZE

尺　寸：D 8 Φ×L 12.5

1.TEMPERATURE RANGE 温度：-55℃～+105℃

2.CAPACITANCE TOLERANCE 静电容量容许差：±20%

3 .LEAKAGE CURRENT: I≤0.2CV (After 2 minutes application of rated voltage)

4.TEST METER:ZENTECH CLC-201 NF ZM-2355

5.TEST TEMPERATURE: 20℃

项目 / Spec规格值 / NO.号码	**Cap** 静电容量	**D.F** 损失角	**ESR** 等效串联阻抗	**L.C.** 漏电流	**Solder-ability**	**Appearance** 外观		
	800.00 ～ (uF) 1200.00	**At 120 Hz 0.12max**	**At 100K Hz 20(mΩ)max**	**3200.0 (uA) max**	焊锡性	**Size** 尺寸	**Marking** 标识	**Sealing** 封口
1	908.63	0.0214	9.69	48.00	OK	OK	OK	OK
2	911.11	0.0226	10.41	32.00	OK	OK	OK	OK
3	909.27	0.0219	8.06	25.00	OK	OK	OK	OK
4	911.90	0.0210	9.03	12.00	OK	OK	OK	OK
5	917.48	0.0218	8.80	9.00	OK	OK	OK	OK
6	916.69	0.0210	9.27	41.00	OK	OK	OK	OK
7	895.47	0.0219	9.87	30.00	OK	OK	OK	OK
8	905.57	0.0221	9.97	26.00	OK	OK	OK	OK
9	905.70	0.0201	8.05	16.00	OK	OK	OK	OK
10	913.80	0.0232	9.92	10.00	OK	OK	OK	OK
平均值	909.56	0.0217	9.26	24.90	/	/	/	/

DECISION

判　定: ☑ **PASS**

Approver 批准	**Auditor** 审核	**Designer** 制作
何东石	黄文昊	蒋嘉雯