规格承认书

客户名称：深圳市立创电子商务有限公司

客户料号：

料　　号：Y5U152MY1400VAC

规格型号：SMD-Y1 152M/400VAC

★ 产品环保要求：RoHS 要求 ☑　　REACH 要求☑

卤素要求 ☐

制　作	客户确认（签署）
王亚平	
审　核	
刘　会	
批　准	
薛子文	

东莞市科尼盛电子有限公司

地址：广东省东莞市寮步镇松湖智谷研发中心A3栋

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传真：86-769-83861559

E-mail:sales@knscha.com　　官网：http://www.knscha.com

变更履历表/E.C.LIST

物料名称 /Material name	SMD-Y1.CAP		料号 /P.N.	详见清单	
规格型号 /Model NO.	详见 清单	版本 /Edition	A1	日期 /Date	2020-2-27

版本 /Edition	日期/Date	主要变更内容 /Main update item	备注/Remarks
A0	2019-07-30	新版/ New Version	
A1	2020-02-27	尺寸/Size	
A2	2021-04-03	增加附页 2/attached sheet II	

修改 /Modify	李少鸿	审核 /check	王灿	批准 /approve	薛子文

附页/attached sheet：

承认规格/Recognized specifications

序号 /CODE	客户料号 / CUSTOMER P.N.	料号 P.N.	规格型号 /MODEL NO.	备注 / REMARKS
1	/	SL470JY1400VAC	SMD-Y1470J/AC400V	7.8*5.4
2	/	SL680JY1400VAC	SMD-Y1680J/AC400V	7.8*5.4
3	/	Y5P101KY1400VAC	SMD-Y1101K/AC400V	7.8*5.4
4	/	Y5P221KY1400VAC	SMD-Y1221K/AC400V	7.8*5.4
5	/	Y5P331KY1400VAC	SMD-Y1331K/AC400V	7.8*5.4
6	/	Y5P471KY1400VAC	SMD-Y1471K/AC400V	7.8*5.4
7	/	Y5U681MY1400VAC	SMD-Y1681M/AC400V	7.8*5.4
8	/	Y5U102MY1400VAC	SMD-Y1102M/AC400V	7.8*5.4
9	/	Y5U152MY1400VAC	SMD-Y1152M/AC400V	7.8*5.4
10	/	Y5V222MY1400VAC	SMD-Y1222M/AC400V	7.8*5.4

附 页 2/ attached sheet II：

常规 SMD-Y1.CAP 容量范围及温度特性区分

/Capacity Range and T.C Differentiation : (Unit:pF)

T.C	10	22	47	56	68	82	100	150	220	270	330	390	470	560	680	820	1000	1500	2200
SL																			
2B(Y5P)																			
2E(Y5U)																			
2F(Y5V)																			
RV	400V.ac/250V.ac																		
Size	LWH:7.8*5.4*2.38(mm)(具体见产品结构尺寸图！)																		
工作温度范围	-40℃ to 125℃																		

关于 Y 交流陶瓷固定电容器承认书规格型号说明：

适用于连接一个额定电压不超过 1000V 的交流电，标称频率不超过 100Hz 的电子电气设备。

About Y AC ceramic fixed capacitor acknowledgement specifications description:

Y1 a.c. ceramic capacitors are used in electrical and electronic equipment and connected an a.c. main with nominal voltage not exceeding 1000va.c, and with a nominal frequency not exceeding 100Hz.

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1. 品名说明/How to order：

料号/Maker part No.：**TMY1101K**

规格/Model No.：**SMD-Y1 101K/AC 400V(250V)**

①　②　③④ ⑤　⑥

No.	代码/Code	说明/Explain	No.	代码/Code	说明/Explain
①	SMD	塑料封装 L 管脚贴片	④	K	Capacity of allowable error/容量允许误差±10 %
②	Y1	安规交流	⑤	AC	交流
③	101	Nominal capacity/标称容量 100PF	⑥	400V (250V)	Nominal capacity/额定电压 400V（Nominal capacity/额定电压 250V）

以上提到的各种代码为本公司规定标准应用!/ Various code mentioned above for the company standard application!

2. 产品印标/ Product marking：

Marking	

日期代码：LB0730

L: 2019 年(按捷容制造日期代码);
B：高温锡膏;
07：机台及批次（捷容产线追溯）

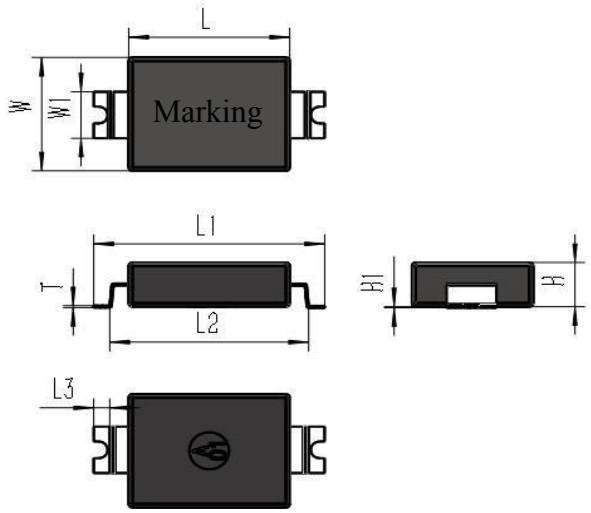
说明/ Explain		
丝印/ registered trademark / brand	TRX	
参考型号/type/model reference	101	
介质代码/code of Dielectric	SL/B（Y5P）/E(Y5U)/F(Y5V)	
型号/capacitor classed sub-class	Y1	
标称容量/ Nominal capacity	100PF	
容量允差/ Capacity of tolerance	K（±10%）/M(±20%)	
安规认证标志 / Safety certification mark	UL 认证	c UL us
	CQC 认证	CQC
	ENEC 认证	ENEC 15
	KC 认证	KC
UL CQC ENEC KC 电压/voltage for UL CQC ENEC KC	400V~（400VAC）/250V~(250VAC)	
日期代码/code of making time	LB0730（根据需要增添）	

3. 产品认证及环保报告/ Product certification and environmental report:

Product certification			environmental report	
UL/CUL	UL/CSA 60384-14	E315719	RoHS2.0	SZXEC1902123703
CQC	GB/T6346.14-2015	CQC17001176740	H.F	SZXEC1902123702
ENEC	EN 60384-14:2013/A1:2016	ENEC-02084	REACH174	SZXEC1902123901
KC	K60384-14	HU03034-17002A		

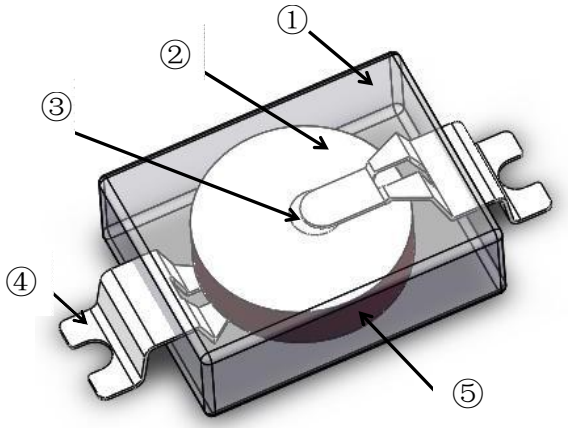
4. 产品结构/Product structure ：

4.1 产品尺寸/Product size:



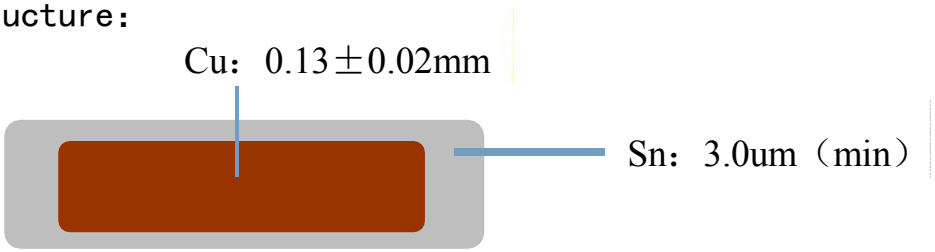
Dimension(mm)			
L	7.8±0.05	W1	2.5±0.05
W	5.4±0.1	T	0.13±0.02
H	2.38±0.05	H1	0.05±0.03
L1	9.6±0.2	L3	0.5±0.1
L2	8.4±0.2		

4.2 产品构造/Product structure



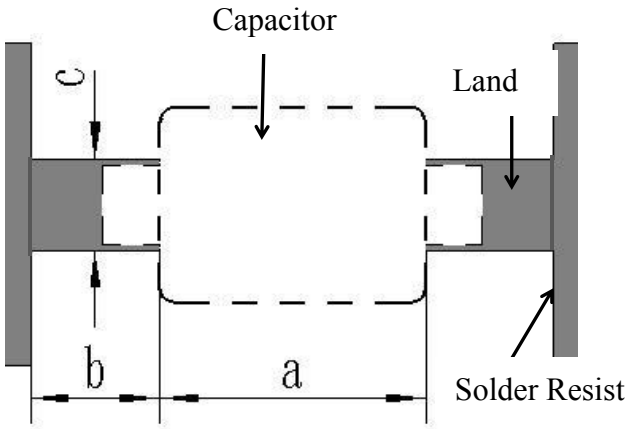
No.	名称 Part name	材料 Material	型号 Model	供应商Maker
①	包封层 Coating	环氧树脂（UL94V-0 认定品）Epoxy molding compound （Conforming to UL94V-0 standard）	/	CHANGCHUN
②	电极 Electrode	银 Silver	/	TERUIXIANG
③	焊料 Solder	Sn-Sb 系焊料 Sn-Sb Solder	/	GUOTONG
④	引线 Lead wire	铜系合金 Copper alloys	/	BW
⑤	介质 Dielectric	陶瓷 Ceramic	全系列 All series	TERUIXIANG

4.3 引脚构造/Pin structure:



4.4 焊接尺寸/Land Dimensions

下面是回流焊的推荐焊接尺寸。尺寸 a 是为了保证设备要求的安全标准爬行距离。The recommendable land dimensions for reflow soldering are follows. Regarding the "a" dimension to ensure the creepage distance required by the safety standard applys to your equipment.

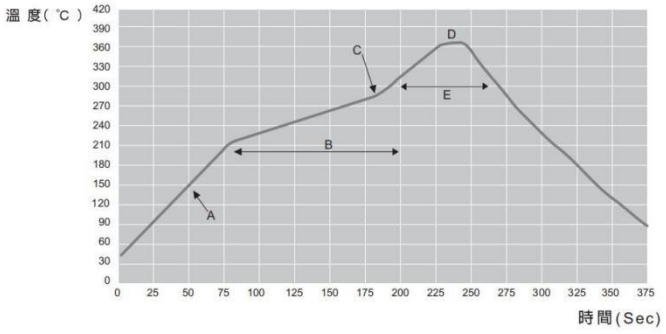


Dimension	a (mm)	b (mm)	c (mm)
7.8x5.4	7.8	2.2	3.6

5. 回流焊温度曲线/Reflow Soldering Temperature Profile

A Typical Reflow Profile For High-Pb Solder Paste

高 铅 锡 膏 炉 温 曲 线 图



Zone		Temp range (℃)	Rate (℃ /sec)	Time (sec)	Remark
A	Curing	RT-135	1-2.5	/	Solder melting temperature:290℃
B	Preheat	150-210	0.5-1.0	60-120	
C	Soldering	290-350	1-2	30-60	
D	Cooling	290-200-RT	1.5-2.0	/	

6. 性能测试/Performance test：

NO	Item 项目		Performance 性能	measuring method 测试方法
1	4.1Visual examination 目视检查		No visible damage legible marking lead frame is not oxidation and its surface is without sundries. 无可见损伤 标记清晰 引线框架无氧化、表面无杂物	unaided eye or magnifier 肉眼或放大镜
2	4.1Dimension 尺寸		accorder Table 见表	vernier caliper 游标卡尺
3	4.1Printing 印字		accorder design 见图	magnifier 放大镜
4	4.2.1 Voltage proof 耐压	Between lead wire 引线之间	No permanent break-down or flashover during the test period 没有永久性的损坏或测试期间无闪络	test voltage:测试电压 4000VAC frequency: 频 率 50/60Hz duration: 持续时间 60 seconds leakage current: 漏 电 流 5mA max
		Body insulation 绝缘体	No permanent break-down or flashover during the test period 没有永久性的损坏或测试期间无闪络	test voltage: 测试电压 4000VAC frequency: 频 率 50/60Hz duration: 持续时间 60 seconds leakage current: 漏 电 流 5mA max
5	4.2.2 Capacitance 电容量		Within specified tolerance 规定的公差 K: ±10% M: ±20%	Temperature:温度 25±3℃ Humidity: 湿度 55±30%RH Voltage: 电压 1.0±0.2V Frequency:频率 1±0.2KHZ
6	4.2.3 Dissipation factor 损耗因数		Within specified tolerance 规定的公差 Y5P: ≤2.5% Y5U: ≤2.5% Y5V: ≤2.5%	Temperature:温度 25±3℃ Humidity: 湿度 55±30%RH Voltage: 电 压 1.0±0.2V Frequency:频率 1±0.2KHZ
7	4.2.4 Capacitor-temperature characteristic 电容器的温度特性		Y5P: ±10% Y5U: +22%~-56% Y5V: +22%~-82%	Temperature tolerance: 耐 温 性 ±2℃ step 1 2 3 4 5 Tem (℃) +20 -25 +20 +85 +20 △=（C_X-C_0）/C_0 C_X capacitor for step2,4 C_0 capacitor for step 3

NO	Item 项目		Performance 性能		measuring method 测试方法
8	4.2.5 Insulation resistance 绝缘电阻	Between lead wire 引线之间	6000MΩ MIN		Measuring voltage: 测量电压 500VDC Frequency: 频率 50/60Hz duration: 持续时间 60 seconds leakage current: 漏电流 5mA max
		Body insulation 绝缘体	6000MΩ MIN		
9	4.3 Robustness of terminations 端坚固性	Tensile 承受拉力	force:>10N		Fixed capacitor'body and Lead wire , lower lead wire. 固定电容体引线和引线端
10	4.4 Resistance to soldering heat 耐焊接热		visual examination 目视检查	no visible damage 无可见损伤	Solder temperature：焊接温度 260±5℃ Immersion time:浸入时间 10±1seconds The depth of immersion: 浸入深度 $2^{+0}_{-0.5}$mm from the seating plane 底座下 $2^{+0}_{-0.5}$mm Using a thermal insulating screen of 1.5±0.5mm thickens 使用1.5±0.5mm 厚隔热屏 Capacitor shall be placed at 25±3 ℃ for 24±2h before initial measurements. 测量前电容应放置在 25±3℃下 24±2 小时
			voltage proof 耐压	accorder 4.2.1 见 4.2.1	
			Capacitance 电容量	Y5P: ±10% Y5U: ±20% Y5V: ±20%	
			dissipation factor 损耗因数	Y5P: ≤2.5% Y5U:≤2.5% Y5V: ≤2.5%	
			Insulation resistance 绝缘电阻	accorder 4.2.5 见 4.2.5	
11	4.5 Solderability 可焊性		Good tinning as evidenced by free flowing of the solder with wetting of the terminations or solder shall flow within 3s. 包锡良好，在 3 秒内流合。		Bath temperature: 浸泡温度 235±5℃ Immersion time: 浸泡时间 2±0.5seconds Depth of immersion(from the seating plane or component body): 浸入深度（从座位或本体）： Capacitors below 2^{0}-0.5mm,using a thermal insulating screen of 1.5±0.5mm thickness. 电容器在 20-0.5mm 下，使用隔热屏 1.5±0.5mm 厚度。

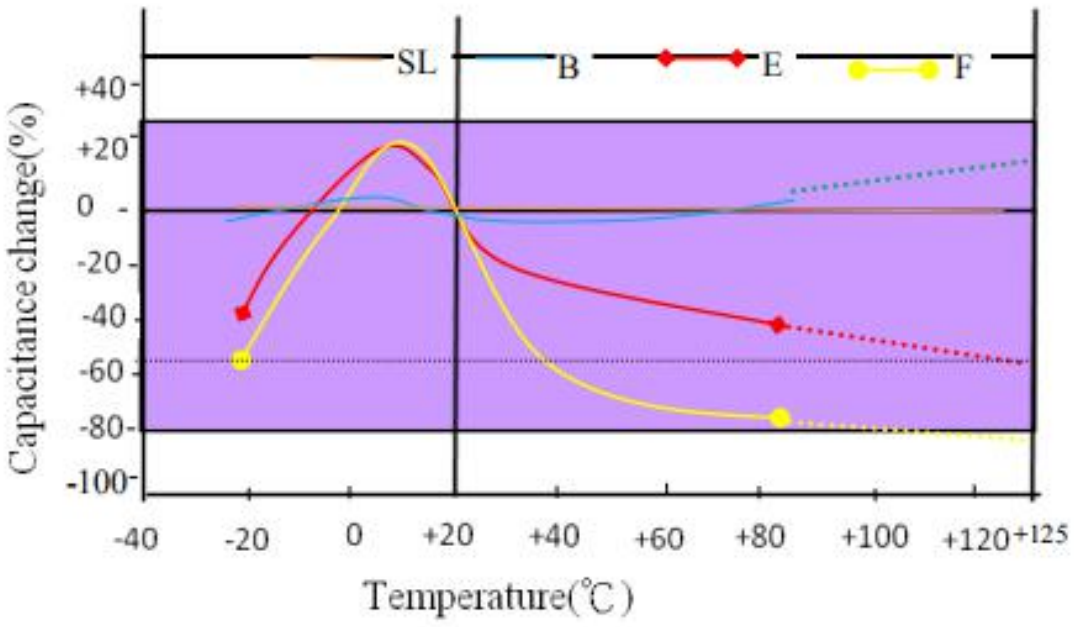
NO	Item 项目	Performance 性能		measuring method 测试方法
12	4.6 Rapid change of temperature 温度的快速变化	visual examination 目视检查	No visible damage 无可见损伤	upper category temperature 上限类别温度+125±3℃ lower category temperature 下限类别温度 -25±3℃ number of cycles :5 duration of exposure at the temperature limits：30minutes 在温度范围的曝光时间：30 分钟 Capacitor shall be placed at 25±3℃for 24±2h before initial measurements. 测量前电容应放置在 25±3℃下 24±2 小时
		voltage proof 耐压	accorder 4.2.1 见 4.2.1	
		Capacitance 电容量	Y5P: ±10% Y5U: ±20% Y5V: ±20%	
		dissipation factor 损耗因数	Y5P: ≤2.5% Y5U:≤2.5% Y5V: ≤2.5%	
		Insulation resistance 绝缘电阻	accorder 4.2.5	
13	4.7 Vibration 振动	Capacitor shall not visible damage 电容器无可见损伤		Frequency rangs: 频率范围 10→55→10Hz swing:振幅 0.75mm, The total duration shall be 6 hours. 总时间为 6 小时 duration of exposure at X,Y,Z：2hours 在 X，Y，Z 曝光时间为 2 小时
14	4.12 Damp heat (steady state) 湿热（稳态）	visual examination 目视检查	No visible damage 无可见损伤	test temperature: 测试温度 40±2℃ humidity: 湿度 95±3%RH duration: 持续时间 500+24/-0hours voltage: 500VAC（U_R）for one half of the samples. 样本的一半 U_R 为 500V capacitor shall be placed at 25±3℃for 24±2hours before measurements. 测量前电容应放置在 25±3℃下 24±2 小时
		Capacitance 电容量	$\triangle=(C_X-C_0)/C_0$ △: ±15%	
		voltage proof 耐压	accorder 4.2.1	
		Insulation resistance 绝缘电阻	≥3000MΩ $\triangle=(R_X-R_0)/R_0$ △>50%	

NO	Item 项目	Performance 性能	measuring method 测试方法
15	4.13 Impulse voltage 脉冲电压	No permanent breakdown or flashover during the test period. 试验期间没有永久性击穿或闪络	Peak impulse voltage: 脉冲峰值电压 8.0KV Impulses distance : 脉冲间隔时间＞10seconds Impulses times: 脉冲次数：24
		If any three successive impulses are shown by the oscilloscope monitor to have had a waveform indicating that no self-healing breakdowns or flashovers have taken place in the capacitor, then no further impulses shall be applied and the capacitor shall be counted as conforming. 如果连续三次的冲击示波器监测显示有波形表明在电容器没有发生自愈的故障或闪络，并没有进一步的脉冲，电容器应算作合格	
		If all 24 impulses have been applied to the capacitor and 3 or more of them are of a waveform indicating that no self-healing breakdowns or flashovers have occurred, then the capacitor shall be counted as conforming. 如果所有 24 个脉冲被应用到电容器，显示 3 个或更多的波形表示没有自愈的故障或闪络发生，电容器应算作不合格。	
		If less than three impulses are of the required waveform, then the capacitor shall be counted as a nonconforming item. 如果少于三的冲动所要求的波形，然后电容器应视为不合格项目。	

<table>
<tr><th>NO</th><th>Item 项目</th><th colspan="2">Performance 性能</th><th>measuring method 测试方法</th></tr>
<tr><td rowspan="4">16</td><td rowspan="4">4.14
Endurance
持久性</td><td>visual examination
目视检查</td><td>No visible damage
无可见损伤</td><td rowspan="4">Test temperature:测试温度 125±3℃
Duration:持续时间 1000+24/-0hours
test voltage: 测试电压850VAC（1.7U_R），except that once every hour the voltage shall be increased to 1000v r.m.s. for 0.1s.
850 VAC（U_R），除了每小时一次的电压应增加至 1000V 的均方根 0.1s。
Each of these voltage shall be applied To each capacitor individually through a resistor of 47Ω±5%.这些电压应施通过加到每个电容器分别 47Ω±5%电阻
Capacitor shall be placed at 25±3℃for 24±2hours before measurements. 测量前电容应放置在 25±3℃下 24±2 小时</td></tr>
<tr><td>Capacitance
电容量</td><td>△=(C_X-C_0)/C_0
Δ: ±10%</td></tr>
<tr><td>voltage proof
耐压</td><td>accorder 4.2.1</td></tr>
<tr><td>Insulation resistance
绝缘电阻</td><td>≥3000MΩ
△=(R_X-R_0)/R_0
△≤30%</td></tr>
<tr><td rowspan="2">17</td><td rowspan="2">4.15
Charge and Discharge
充放电</td><td>Capacitance
电容量</td><td>△=（C_X-C_0）/C_0
△: ±10%</td><td rowspan="2">Charge voltage: 充 电 电 压 707VAC(√2U_R)
number of cycles:循环次数 10000
the rate of approximately: 大概速度
one operation per second.每秒一次操作
Each cycle shall consist of charging and discharging the capacitor.每个周期电容器将充放电
Each capacitor shall be individually charged by applying the test voltage through a resistor with the value
每个电容器应通过与电阻值施加测试电压单独充电
$R=\frac{220\times10^{-6}}{C_R}\ \Omega$
Capacitor shall be placed at 25±3℃for 24±2hours before measurements. 测量前电容应放置在 25±3℃下 24±2 小时</td></tr>
<tr><td>Insulation resistance
绝缘电阻</td><td>≥3000MΩ
△=（R_X-R_0）/R_0
△≤30%</td></tr>
<tr><td>18</td><td>4.17
Passive flammability
阻燃性</td><td colspan="2">category：级别 B
The burning time of any specimen shall not exceed the time specified. 任何试样的燃烧时间不超过指定的时间。
Burning droplets or glowing parts falling down shall not ignite the tissue paper. 液滴燃烧或灼热的部分为不点燃纸巾。</td><td>category：级别 B
<table>
<tr><th>volume ranges
容量范围</th><th>flame time
火 焰时间</th><th>Maximum burning time 最大燃烧时间</th></tr>
<tr><td>V<250mm^3</td><td>5S</td><td>≤30S</td></tr>
<tr><td>250<V≤500mm^3</td><td>10S</td><td>≤30S</td></tr>
<tr><td>500<V≤1750mm^3</td><td>20S</td><td>≤30S</td></tr>
<tr><td>V>1750mm^3</td><td>30S</td><td>≤30S</td></tr>
</table></td></tr>
</table>

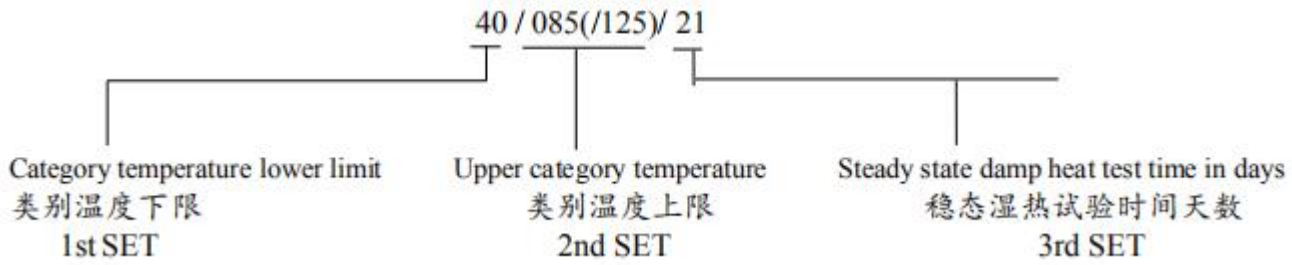
NO	Item 项目	Performance 性能	measuring method 测试方法
19	4.19 Component solvent Resistanc 耐溶剂性	No visible damage. Performance accorder 4.2.1~4.2.5 无可见损伤 按照 4.2.1～4.2.5 性能	Solvent to be used: 使用的溶剂 30±5%isopropyl alcohol and 70±5%fluxional compound 30±5%异丙醇和 70±5%微化物 Solvent temperature: 溶 剂 温 度 23±5℃ The capacitor shall be immerged in solvent for 5±0.5seconds. 电容器应浸没在溶剂中 5±0.5 秒。 Recovery time: 恢复时间 8hours
20	4.20 Solvent resistance of the marking 标志耐溶剂性	The marking shall be legible 标志应清晰	Solvent to be used: 使用的溶剂 30±5%isopropyl alcohol and 70±5%fluxional compound 30±5%异丙醇和 70±5%微化物 Solvent temperature: 溶 剂 温 度 23±5℃ The capacitor shall be immerged in solvent for 5±0.5seconds and its markshall be wiped with pledget for 10times. 电容器应浸没在溶剂中 5±0.5 秒，用纱布擦拭标志 10 次

7. 电容温度特性/Capacitive temperature characteristic:



8. 气候类别/Climatic category

According to EIA STANDARD RS 198
根据环境影响评估标准 RS 198



1st SET ： Minimum ambient temperature of operation (Cold test) 操作的最低环境温度（冷态试验）
2nd SET: Maximum ambient temperature of operation (Dry heat test) 运行的最高环境温度（干热试验）
3rd SET ： Number of days (Damp heat steady state test)　天数（稳态湿热试验）

Category Examples 等级举例 according to IEC 60068-1 根据 IEC 60068-1
25/085/04
25/085/21
40/085/21
55/125/21
55/125/56

First set 第一组 Two digits denoting the minimum ambient temperature of operation (Cold test) 两位数字表示操作的最低环境温度（冷态试验）	
65	-65℃
55	-55℃
40	-40℃
25	-25℃
10	-10℃
00	0℃
05	+5℃

Second set 第二组 Three digits denoting the maximum ambient temperature of operation (Dry heat test) 三位数表示的最大工作环境温度（干热试验）	
155	+155℃
125	+125℃
110	+110℃
085	+85℃
080	+80℃
075	+75℃
070	+70℃

Third set 第三组 Two digits denoting the number of days(Damp heat steady state test) 两位数字表示的数天（稳态湿热试验）	
56	56 days
21	21 days
10	10 days
04	4 days
00	The component is not required to be exposed to damp heat. 组件不需要暴露于湿热

9.有毒有害物质含量控制要求/Requirements for concentration limits for certain hazardous substances

RoHS2.0 2011/65/EU

halogen 卤素

REACH No190 7/2006

RoHS H.F.
REACH

Substances 物质名称	concentration (unit: ppm) 含量
Cadmium and cadmium compounds 镉及镉化合物	<100
Lead and lead compounds 铅及铅化合物	<1000
Mercury and mercury compounds 汞及汞化合物	<1000
Hexavalent chromium compounds 铬及铬化合物	<1000
Polubrominated biphenyls 多溴联苯 PBBS	<1000
Polubrominated diphenylethers 多溴联苯醚 PBDES	<1000
Cd+Pb+ Hg + Cr^{+6}(packing materials)镉+铅+汞+六价铬	<100
Cl 氯	<900
Br 溴	<900
Cl+Br 氯+溴	<1500
SVHC (155item)　REACH 高关注物质 174 项	<1000

10. 制造日期代码/Manufacturing date codes

code of year 年代码				code of month 月代码		code of day 日代码			
year	code	year	code	month	code	day	code	day	code
		2020	M	1	01	1	01	16	16
		2021	N	2	02	2	02	17	17
2010	A	2022	P	3	03	3	03	18	18
2011	B	2023	R	4	04	4	04	19	19
2012	C	2024	S	5	05	5	05	20	20
2013	D	2025	T	6	06	6	06	21	21
2014	E	2026	U	7	07	7	07	22	22
2015	F	2027	V	8	08	8	08	23	23
2016	H	2028	W	9	09	9	09	24	24
2017	J	2029	X	10	10	10	10	25	25
2018	K			11	11	11	11	26	26
2019	L			12	12	12	12	27	27
						13	13	28	28
						14	14	29	29
						15	15	30	30
								31	31

Note: the year code repeats once every 20 years for a one-week period.
注：年份代码每 20 年为一周期重复一次。

11. 贮存条件/Storage conditions

(1). The capacitors are must not stored in a corrosive atmosphere, where sulphide or chloride gas,acid,alkali or salt are present. Exposure of the components to moisture, should be avoided.

防潮，防尘，防压，防跌倒，防酸碱物质，避免阳光直射和结露。

(2). Capacitors can be stored for short periods at any temperature within the entire range of category temperature.

(3). 电容器可在额定的气侯类别温度范围内短期（3 个月）贮存。

For long storage periods, however, the following conditions should be observed:

电容器长时间贮存应需要满足下列条件：

■Storage temperature:-25 to +40℃

贮存温度：-25 to +40℃

■Maximum relative humidity 80%,no dew allowed on the capacitor.

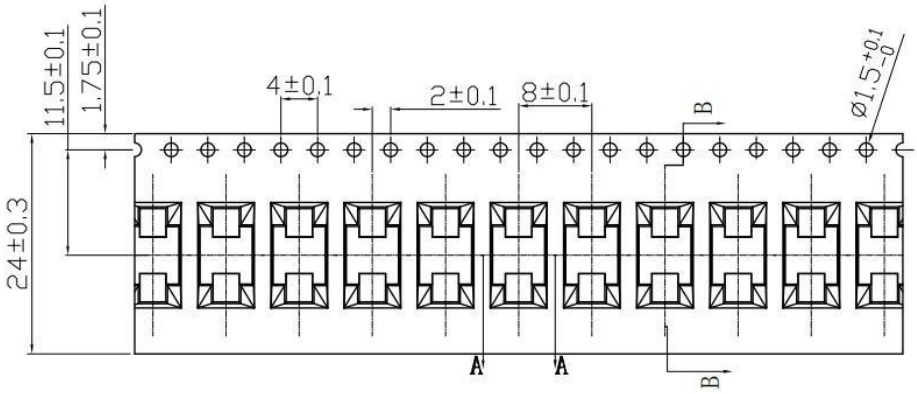
贮存湿度：不超过 80%，并无结露现象

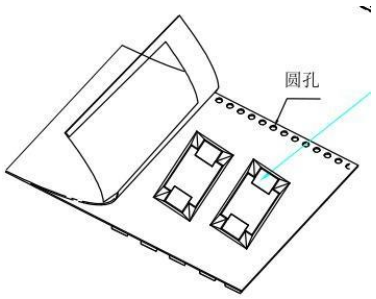
■Maximum duration 12months.

贮存期限：最大 12 个月

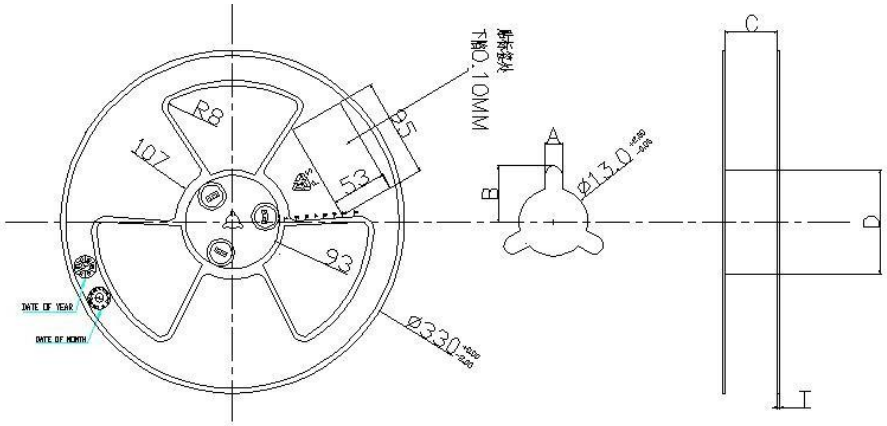
12. 包装/Packing

12.1 载带尺寸/Dimension of tape





12.2 REEL：

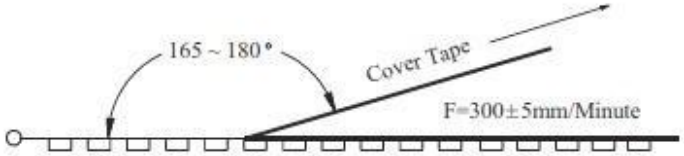


SPEC	A±0.3	B±0.5	C +0.5 -0.0	D±0.5	T±0.2
24	2.3	10.75	24.4	Ø97	2.2

REEL	REEL SIZE
3000pcs	13inch

12.3 Peeling Strength:

Item	Data	Remark
Cover tape adhesion	10～100g	Carrier tape and cover tape open angle 165～180° F=300± 5mm/minute



12.4 包装数据表/Product Packaging Scheme

inner-packaging 内包装：



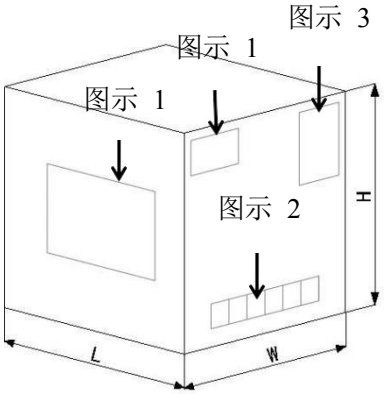
Reel Size：13inch
3.0KPCS/Reel



Label 标签

No.	Item
①	P/N 客户料号
②	Qty 数量
③	Mfr 料号
④	Date Code 生产日期
⑤	Lot# 生产批号
⑥	SPEC 规格

Outer-packaging 外包装：



商标



图示 1　　图示 2



图示 3

Dimension 尺寸(mm)			Quantity 数量	Out Box Weight 外箱重量
L	W	H	30KPCS	10.35KG
355	358	294		

Package sketch 包装示意图：



Out Box



10Reel/Box



Pallet Size(L/W/H)：
1100*1100*90mm



Pallet Size(L/W/H)：
1100*1100*1600mm

备注：1.包装箱上的“5”是堆叠层数不能超过 5 层;2.PALLET 包装& 远距离运输时 WRAPPING;3.50 cm 以上高度不可抛落下;4.常温/常湿保管。

Remark:1.The 5 on the packing is stacked layers can't more than 5 layers; 2. Pallets packaging & long-distance transport should be warpping; 3.50 cm above the height of the parcel do not drop; 4. Normal temperature / humidity keeping.

13. 敬告和警告/Cautions and warnings

①. Attention is drawn to the fact that repetition of the voltage proof test by the user may damage the capacitor.
用户进行的重复耐电压试验可能损坏电容器，故试验后的电容器不可以当合格品再使用。

② . Capacitors mounted on a printed circuit board (PCB) requirements of PCB board welding disc required and capacitor pin paste solder joint agreement, the opposite may cause the capacitor and the PCB board to bad welding and capacitor tube deform the feet or body destruction and damage the capacitor.
电容器在 PCB 板上安装时要求 PCB 板焊盘需与电容器管脚贴焊点吻合,相反可能会导致电容器与 PCB 板焊接不良,电容器管脚变形或本体破坏而损坏电容器。

③. Avoid any compressive, tensile or flexural stress.避免任何挤压，弯折，外部撞击。

④. Please consult us first if you wish to embed the capacitor in plastic resins.
在电容器上进行树脂成型时，应事先咨询我司相关技术人员。

⑤. Do not move the capacitor after it has been soldered to the board.
焊接于 PCB 板的电容器不可用力移动或将本体用力倾斜。

⑥. Do not pick up the PC board by the soldered capacitor.
不可于焊接于 PCB 板后的电容将板提取，可能破坏电容焊接和包封层破损。

14. 电容高压测试操作指引/Voltage proof test guide

A. Correct Method

正确方法



Operate explain: 操作说明

(1). Set up test voltage , current and time in high voltage instrument. 设定耐压仪测试电压，电流，测试时间。

(2). The two pins of capacitor are nipped in fixture of high voltage instrument. 将电容两引脚夹于高压输出端夹具上，使引脚与夹具接触牢固。

(3). Give the start button a slight press and the capacitor changed and tested, high voltage instrument stop output when the time arrived. 按下启动按钮，电压输出，电容进行高压测试，测试时间完成时，耐压仪自动切断电压输出。

B. Error Method

错误方法



Operate explain: 描述

Capacitor was test with high voltage test probe for electriferous touch the two pins of capacitor. 直接用带电的测试棒去接触电容的两引脚进行测试。

15. 有关电容器术语和定义/Terms and definitions on capacitors

(1). a.c. capacitor 交流电容器

Capacitor designed essentially for application with a power-frequency alternating voltage.

NOTE： a.c. capacitor may be used on d.c. supplies having the same voltage as the a.c. r.m.s. rated voltage of the capacitor.

电容器的设计基本上与电源频率的交流电压的应用。

注：交流电容器可用于直流电源具有相同的电压为交流有效值额定电压的电容。

(2). capacitor of class Y　Y 电容器

Capacitor of a type suitable for use in situations where failure of the capacitor could lead to danger of electric shock.

电容器的类型适用的情况下，电容器的失效可能会导致触电危险。

(3). rated voltage 额定电压

Either the r.m.s. operating voltage of rated frequency or the d.c. operating voltage, which may be applied continuously to the terminations of a capacitor at any temperature between the lower and the upper category temperatures.

额定电压是在额定温度下，可以连续施加在电容器引出端上的最大直流电压。

(4). tangent of loss angle(tanδ) 损耗角正切

The power loss of the capacitor divided by the reactive power of the capacitor at a sinusoidal voltage at a specified frequency.

在规定频率的正弦电压下，电容器的损耗功率除以电容器的无功功率。

(5). temperature characteristic of capacitor 电容量温度特性

The maximum reversible variation of capacitance produced over a given temperature range within the category temperature range, normally expressed as a percentage of the

电容量温度特性是在一个不超出类别温度范围的给定温度范围内，所出现的电容量最大可逆变化。一般此变化表示相对 20℃时电容量的百分比。

16. 陶瓷电容器常识/general knowledge for ceramic Capacitors

⑴. for capacitance and Dissipation factor(tanδ) : 容量和损耗测试

①. The capacitor is tested after be clamped with the test tool, can't take the capacitor' s noumenon for test with hand. Capacitance and dissipation factor are not exact because of temperature in hand and test result is not right. 用测试夹具紧密接触或夹住电容两脚进行测试读数，不可用手拿着电容本体进行测试。因手温传给电容本体后会影响电容的容量和损耗，造成测试结果有出入而引起误判。

②. The capacitor's capacitance and Dissipation factor after voltage tested may not test before the capacitor is stored for 24 hours after voltage test.the capacitor must be discharge between leads before test, or else voltage of remainder attaint test apparatus. 耐压测试后的产品在进行容量和损耗测试前必须是电容已经放置 24 小时以上，并且在测试时需将电容两引脚进行短路放电，避免残余电量损坏测试仪表。

⑵. for Voltage proof: 耐电压

Charge to capacitor after AC or DC Voltage, value, time and current are seted in test apparatus, clamping capacitor's lead with clamp for test apparatus output. Space between clamps for test apparatus output must meet standard， or else flashover will be happened between two leads if space is too small. Capacitor's configuration was be destroyed if great current will be happened in capacitor for moment. 先调节好测试用耐压仪的测试电压性质，数值，最大电流和测试时间，再用测试仪两电源输出端夹子夹住电容的两支引脚，且两夹具的内间距不能小于电容脚距（若两夹具的内间距小于电容脚距时，在充电测试中会因爬电距离过小产生飞弧，瞬间在电容内部产生大电流而破坏电容结构。

17. 引用标准/Normative references

(1). IEC 60384-1：2008　Fixed capacitors for use in electronic equipment Part 1: Generic specification

电子设备用固定电容器 第 1 部分 通用规范

(2). IEC 60384-14 3'rd：2005 Fixed capacitors for use in electronic equipment Part 14：Sectional specification（Fixed capacitors for electromagnetic interference suppression and connection to the supply mains）

电子设备用固定电容器 第 14 部分 分规范（用于抑制电磁干扰和电源连接固定电容器）

(3) . GB/T 5169.5-1997 (IDT IEC 60695-2-2:1991) Fire hazard testing for electronic products Part 2: Test methods Section 2: Needle-flame test

电子产品着火危险实验 第 2 部分 实验方法 第 2 节：针焰试验

(4). GB/T 2693-2001 (IDT IEC 60384-1：1999) Fixed capacitors for use in electronic equipment-

Part 1: Generic specification

电子设备用固定电容器 第 1 部分 通用规范

(5). GB/T 2828.1-2003 (IDT ISO 2859-1:1999) Sampling procedures for inspection by attributes-

Part 1: Sampling schemes indexed by acceptance quality limit(AQL)for lot-blotinspection

计数抽样检验程序 第 1 部分 按接受限(AQL)检索的逐批检验抽样计划

(6). GB/T 2471-1995 (IDT IEC 63:1963)：Preferred number series for resistors and capacitors

电阻器和电容器优先数系

(7). GB/T 2691-1994 (IDT IEC 62:1992)：Marking codes for resistors and capacitors

电阻器和电容器的标志代码

(8). SJ/T 11363-2006：Requirements for concentration limits for certain hazardous substances in electronic information products

电子信息产品中有毒有害物质的限量要求

(9). SJ/T 11364-2006：Marking for control of pollution caused by electronic information products

电子信息产品污染控制标识要求

(10). SJ/T 11365-2006：Testing methods for hazardous substances in electronic information products

电子信息产品中有毒有害物质的检测方法

(11). 2011/65/EU：(RoHS2.0) The Restriction of the use of certain Hazardous substances in Electrical and Electronic Equipment

电子电气设备中限制使用某些有害物质指令

(12). 2002/96/EC (WEEE)：Waste Electrical and Electronic Equipment

废旧电子电气设备指令

(13). 94/62/EC（2005/20/EC）：Europe Parliament and Council Directive94/62/EC of 20 December 1994 on Packaging and packaging waste

关于包装和包装废物的 1994 年 12 月 20 日欧洲议会和理事会指令 94/62/EC

(14). No1907/2006(REACH)：Registration, Evaluation, Authorization and Restriction of Chemicals(151item)

化学品注册、评估、许可和限制