 TRX 专注电容器廿年	SMD-Y 型 陶瓷交流固定电容器 /SMD Y a.c. ceramic capacitors			
	编 号/Number	TRX-3-079	制定日期/Date	2019-09-15
	发行版次/Issue	B1	页 码/Page	Page 3 of 22

附页/ attached sheet:

承认规格/ Recognized specifications (常用)

序号 /CODE	客户料号 / CUSTOMER P.N.	特锐祥料号 /TRX P.N.	规格型号 /MODEL NO.	备注 / REMARKS
1	/	TMY1100J	SMD Y1-SL100J/AC400V	尺寸 7854 (mm)
2	/	TMY1220J	SMD Y1-SL220J/AC400V	尺寸 7854 (mm)
3	/	TMY1470J	SMD Y1-SL470J/AC400V	尺寸 7854 (mm)
4	/	TMY1680J	SMD Y1-SL680J/AC400V	尺寸 7854 (mm)
5	/	TMY1101K	SMD Y1-Y5P101K/AC400V	尺寸 7854 (mm)
6	/	TMY1221K	SMD Y1-Y5P221K/AC400V	尺寸 7854 (mm)
7	/	TMY1331K	SMD Y1-Y5P331K/AC400V	尺寸 7854 (mm)
8	/	TMY1471K	SMD Y1-Y5P471K/AC400V	尺寸 7854 (mm)
9	/	TMY1471M	SMD Y1-Y5U471M/AC400V	尺寸 7854 (mm)
10	/	TMY1681M	SMD Y1-Y5U681M/AC400V	尺寸 7854 (mm)
11	/	TMY1102M	SMD Y1-Y5U102M/AC400V	尺寸 7854 (mm)
12	/	TMY1152M	SMD Y1-Y5U152M/AC400V	尺寸 7854 (mm)
13	/	TMY1222M	SMD Y1-Y5V222M/AC400V	尺寸 7854 (mm)
备注	根据陶瓷材料材质区分为: SL 代表 CLASS I 系列; Y5P/Y5U/Y5V 代表 CLASS II 系列。			

附页 2/ attached sheet II:

TRX 常规 SMD-Y1. CAP 容量范围及温度特性区分

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

关于 Y 交流陶瓷固定电容器承认书规格型号说明:


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																			
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	-25°C to 125°C																			

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 1000v.a.c, and with a nominal frequency not exceeding 100Hz.




 TRX 专注电容器廿年	SMD-Y 型 陶瓷交流固定电容器 /SMD Y a.c. ceramic capacitors			
	编 号/Number	TRX-3-079	制定日期/Date	2019-09-15
	发行版次/Issue	B1	页 码/Page	Page 4 of 22

目录清单/TABEL OF CONTENTS

1. 品名说明/ Name Description -----	5
2. 产品印标/Product marking -----	5
3. 产品认证及环境报告/Product certification and environmental report -----	6
4. 产品结构/Product structure -----	6-7
5. 回流焊温度曲线/Reflow Soldering Temperature Profile-----	7
6. 性能测试/ Performance test -----	8-13
7. 温度特性/ Temperature characteristics -----	13
8. 气候类别/ Climate type -----	14
13. 有毒有害物质含量控制要求/ oxic and hazardous substances control requirements-----	15
14. 制造日期代码 (TRX) / Manufacturing date code (TRX)-----	16
15. 储存条件/ Storage conditions -----	16
16. 产品包装/Product packaging -----	17-18
17. 敬告与警告/ warning -----	19
18. 电容高压测试操作指引/ Capacitance pressure test operation guide -----	19
19. 有关电容器术语和定义/ Terms and definitions related to capacitor -----	20
20. 陶瓷电容器常识/ Ceramic capacitor common sense -----	21
21. 引用标准/ Reference standard -----	22

(注：本次准承认共 / 款)



 TRX 专注电容器廿年	SMD-Y 型 陶瓷交流固定电容器 /SMD Y a.c. ceramic capacitors			
	编 号/Number	TRX-3-079	制定日期/Date	2019-09-15
	发行版次/Issue	B1	页 码/Page	Page 5 of 22

1. 品名说明/How to order:

料号/Maker part No.: **TMY1101K**

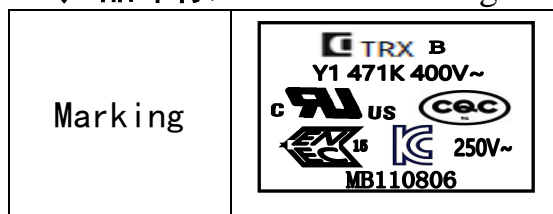
规格/Model No. : **SMD Y1-Y5P101K/AC 400V**

- ① ② ③ ④ ⑤ ⑥ ⑦

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	⑤	K	Capacity of allowable error/容量允许误差±10%
②	Y1	安规交流	⑥	AC	交流
③	Y5P	温度特性	⑦	400V	Nominal capacity/额定电压 400V
④	101	Nominal capacity/标称容量 100PF			






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:



日期代码: MB110806

M: 2020 年(按 TRX 制造日期代码);
 B: 高温锡膏;
 11: 机台及批次 (TRX 产线追溯);
 08: 8 月 (01-12)
 06: 6 号 (01-31)

说明/ Explain	
公司注册商标/品牌/ registered trademark / brand	
参考型号/type/model reference	TRX
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	2-2200pF
容量允差/ Capacity of tolerance	J(±5%) /K (±10%) /M(±20%)
安规认证标志 / Safety certification mark	UL 认证 
	CQC 认证 
	ENEC 认证 
	KC 认证 
UL CQC ENEC KC 电压/voltage for UL CQC ENEC KC	400V~ (400VAC)
日期代码/code of making time	MB110806 (根据需要添加)

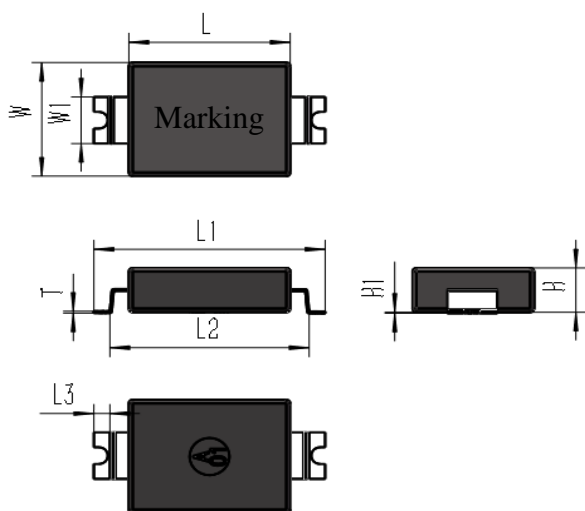
 TRX 专注电容器廿年	SMD-Y 型 陶瓷交流固定电容器 /SMD Y a.c. ceramic capacitors			
	编 号/Number	TRX-3-079	制定日期/Date	2019-09-15
	发行版次/Issue	B1	页 码/Page	Page 6 of 22

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	SZXEC2002497901
CQC	GB/T6346.14-2015	CQC17001176740	H.F	SZXEC2002333302
ENEC	EN 60384-14:2013/A1:2016	ENEC-02084	REACH174	SZXEC2002334001
KC	KC 60384-14	SU03127-21001		

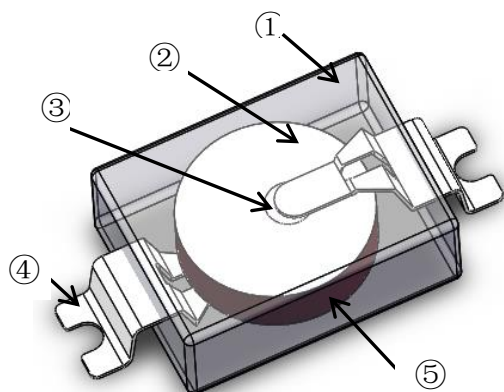
4. 产品结构/Product structure :

4.1 产品尺寸/Product size:




Dimension (mm)			
L	7.8±0.1	W1	2.5±0.05
W	5.4±0.1	T	0.13±0.02
H	2.45 MAX	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

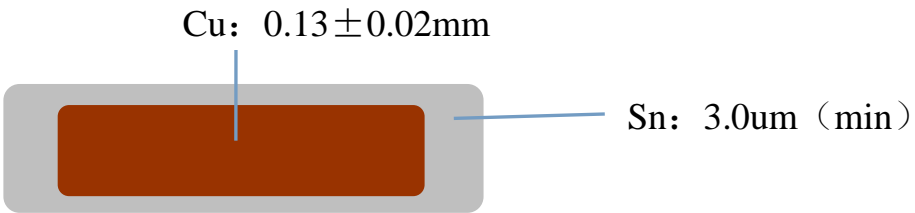


No.	名称 Part name	材料 Material	型号 Model	供应商 Maker
①	包封层 Coating	环氧树脂 (UL94V-0 认定品) Epoxy molding compound (Conforming to UL94V-0 standard)	/	长春人造树脂厂股份有限公司 CHANG CHUN PLASTICS CO., LTD.
②	电极 Electrode	银 Silver/铜 Copper	/	四川特锐祥科技股份有限公司 SICHUAN TERUIXIANG TECHNOLOGY CO., LTD.
③	焊料 Solder	Sn-Pb-Ag 系焊料 Sn-Pb-Ag Solder	/	苏州国通科技有限公司 SU ZHOU GOTTA TECHNOLOGY CO., LTD.
④	引线 Lead wire	铜系合金 Copper alloys	/	宁波博威合金板带有限公司 NINGBO POWERWAY ALLOY PALTE&STRIP CO., LTD.
⑤	介质 Dielectric	陶瓷 Ceramic	全系列 All series	四川特锐祥科技股份有限公司 SICHUAN TERUIXIANG TECHNOLOGY CO., LTD.



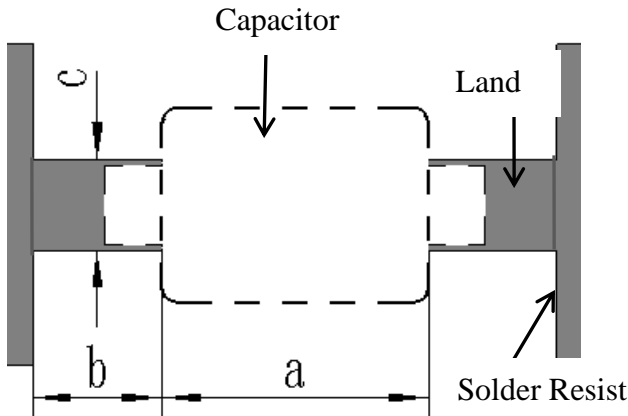
 TRX 专注电容器廿年	SMD-Y 型 陶瓷交流固定电容器 /SMD Y a.c. ceramic capacitors		
	编 号/Number	TRX-3-079	制定日期/Date
发行版次/Issue	B1	页 码/Page	Page 7 of 22

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 applies to your equipment.

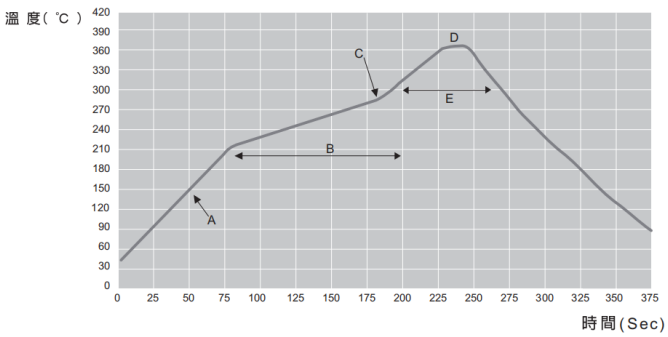


Dimension	a (mm)	b (mm)	c (mm)
7.8x5.4	7.8	2.2	3.6

5.1 焊接锡膏炉温曲线图/Temperature curve of solder paste furnace

A Typical Reflow Profile For High-Pb Solder Paste

高 铅 锡 膏 炉 温 曲 线 图



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



SMD-Y 型 陶瓷交流固定电容器
/SMD Y a.c. ceramic capacitors

 TRX 专注电容器廿年	编 号/Number	TRX-3-079	制定日期/Date	2019-09-15
	发行版次/Issue	B1	页 码/Page	Page 8 of 22

5.2 Reflow Soldering

When soldering capacitor, it should be performed in following conditions.

Soldering temperature :280°C max.

Soldering time :30s max.

Preheating temperature:200°C max.

5.3 Flow Soldering

When soldering capacitor, it should be performed in following conditions.

Soldering temperature :280°C max.

Soldering time :30s max.

Preheating temperature:200°C max.

Preheating time :180s max.

5.4 Soldering Iron

When soldering this product to a PCB/PWB, do not exceed the solder heat resisittance specification of the capacitor. Subjecting this product to excessive heating could melt the internal junction solder and may result in thermal shocks that can crack the ceramic element.

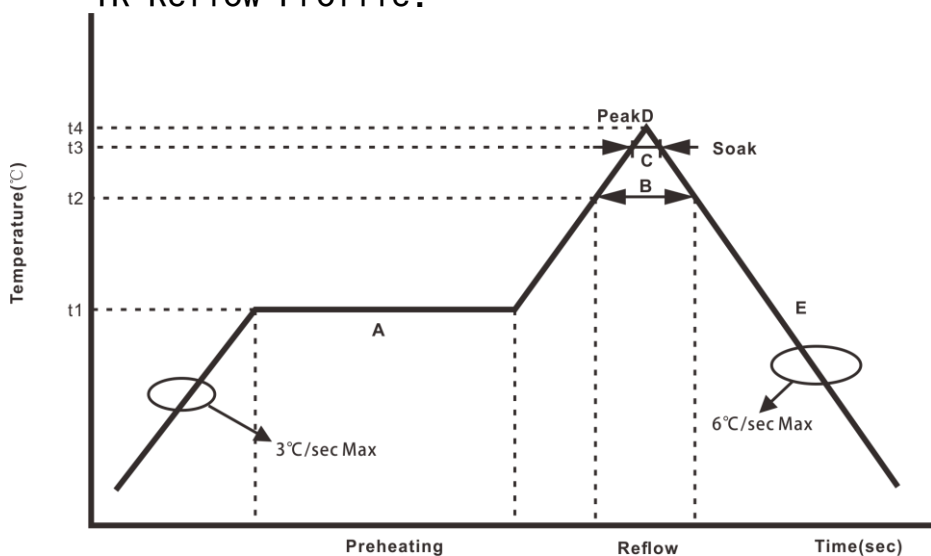
When soldering capacitor with a soldering iron, it should be performed in following conditions.

Temperature of iron-tip:400°C max.

Soldering iron wattage :50W max.

Soldering time :5s max.

IR Reflow Profile:




t1	175±25	Preheating A	120±60s
t2	215±10	Reflow B	110±20% ^s
t3	230±10	Soak C	30±20% ^s
t4	275±5	Peak D	20±10s


 TRX 专注电容器廿年	SMD-Y 型 陶瓷交流固定电容器 /SMD Y a.c. ceramic capacitors			
	编 号/Number	TRX-3-079	制定日期/Date	2019-09-15
	发行版次/Issue	B1	页 码/Page	Page 8 of 22

6. 性能测试/ Performance test:


NO	Item 项目	Performance 性能	measuring method 测试方法												
1	4.1 Visual 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	4.1 Dimension 尺寸	accorder Table 见表	vernier caliper 游标卡尺												
3	4.1 Printing 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 J: ±5% K: ±10% M: ±20%	Temperature: 温度 25±3°C Humidity: 湿度 55±30%RH Voltage: 电压 1.0±0.2V Frequency: 频率 Class I: 1±0.2MHZ Class II: 1±0.2KHZ												
6	4.2.3 Dissipation factor 损耗因数	Within specified tolerance 规定的公差 SL: ≤1.0% Y5P: ≤2.5% Y5U: ≤2.5% Y5V: ≤2.5%	Temperature: 温度 25±3°C Humidity: 湿度 55±30%RH Voltage: 电压 1.0±0.2V Frequency: 频率 Class I: 1±0.2MHZ Class II: 1±0.2KHZ												
7	4.2.4 Capacitor-temperature characteristic 电容器的温度特性	SL: +140~-1000(ppm/°C) Y5P: ±10% Y5U: +22%~-56% Y5V: +22%~-82%	Temperature tolerance: 耐温性 ±2°C <table border="1" style="margin-left: 20px;"> <tr> <td>step</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>Tem (°C)</td> <td>+20</td> <td>-25</td> <td>+20</td> <td>+85</td> <td>+20</td> </tr> </table> $\Delta = (C_x - C_0) / C_0$ C _x capacitor for step 2,4 C ₀ capacitor for step 3	step	1	2	3	4	5	Tem (°C)	+20	-25	+20	+85	+20
step	1	2	3	4	5										
Tem (°C)	+20	-25	+20	+85	+20										

 TRX 专注电容器廿年	SMD-Y 型 陶瓷交流固定电容器 /SMD Y a.c. ceramic capacitors			
	编 号/Number	TRX-3-079	制定日期/Date	2019-09-15
	发行版次/Issue	B1	页 码/Page	Page 9 of 22

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	Measuring voltage: 测量电压 100VDC 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 time:10s 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	Solder temperature: 焊接温度 260 ±5°C Immersion time: 浸入时间 10 ± 1seconds The depth of immersion: 浸入深 度 引脚浸入锡炉液面距本体 2 ± 0.5mm; Capacitor shall be placed at 25 ± 3 °C for 24 ± 2h before initial measurements. 测量前电容应放 置在 25 ± 3°C 下 2 小时	
		voltage proof 耐压		no visible damage 无可见 损伤
		Capacitance 电容量		accorded 4.2.1 见 4.2.1
		dissipation factor 损耗因数		SL: ±5% Y5P: ±10% Y5U: ±20% Y5V: ±20%
		Insulation resistance 绝缘电阻		SL: ≤1.0% Y5P: ≤2.5% Y5U: ≤2.5% Y5V: ≤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 245 ±5°C 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): 引脚浸 入锡炉液面距本体 2 ± 0.5mm;	

	SMD-Y 型 陶瓷交流固定电容器 /SMD Y a.c. ceramic capacitors			
	编 号/Number	TRX-3-079	制定日期/Date	2019-09-15
	发行版次/Issue	B1	页 码/Page	Page 10 of 22

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°C lower category temperature 下限 类别温度 -25±3°C 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°C for 24±2h before initial measurements. 测量前电容应放置在 25±3°C 下 24±2 小时
		voltage proof 耐压	accorder 4.2.1 见 4.2.1	
		Capacitance 电容量	SL: ±5% Y5P: ±10% Y5U: ±20% Y5V: ±20%	
		dissipation factor 损耗因数	SL: ≤1.0% 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	1.Capacitor shall not visible damage 电容器无可见损伤 2. $\Delta C \leq \pm 10\% C_0$ 3. DF $\leq 5\%$ max.		Frequency rangs: 频率范围 10→55→10Hz swing: 振幅 1.5mm, 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°C humidity: 湿度 95±3%RH duration: 持续时间 500+24/-0hours voltage: 400VAC (U _R) for one half of the samples. 样本的一半 U _R 为 400V capacitor shall be placed at 25±3°C for 24±2hours before measurements. 测量前电容应放置在 25±3°C 下 24±2 小时
		Capacitance 电容量	$\Delta = (C_X - C_0) / C_0$ $\Delta: \pm 15\%$	
		voltage proof 耐压	accorder 4.2.1	
		Insulation resistance 绝缘电阻	$\geq 3000M\Omega$ $\Delta = (R_X - R_0) / R_0$ $\Delta > 50\%$	

 TRX 专注电容器廿年	SMD-Y 型 陶瓷交流固定电容器 /SMD Y a.c. ceramic capacitors			
	编 号/Number	TRX-3-079	制定日期/Date	2019-09-15
	发行版次/Issue	B1	页 码/Page	Page 11 of 22

NO	Item 项目	Performance 性能	measuring method 测试方法
15	4.13 Impulse voltage 脉冲电压	<p>No permanent breakdown or flashover during the test period. 试验期间没有永久性击穿或闪络</p> <p>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</p> <p>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。</p> <p>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。</p>	<p>Peak impulse voltage: 脉冲峰值电压 8.0KV</p> <p>Impulses distance : 脉冲间隔时间 > 10seconds</p> <p>Impulses times: 脉冲次数: 24</p>



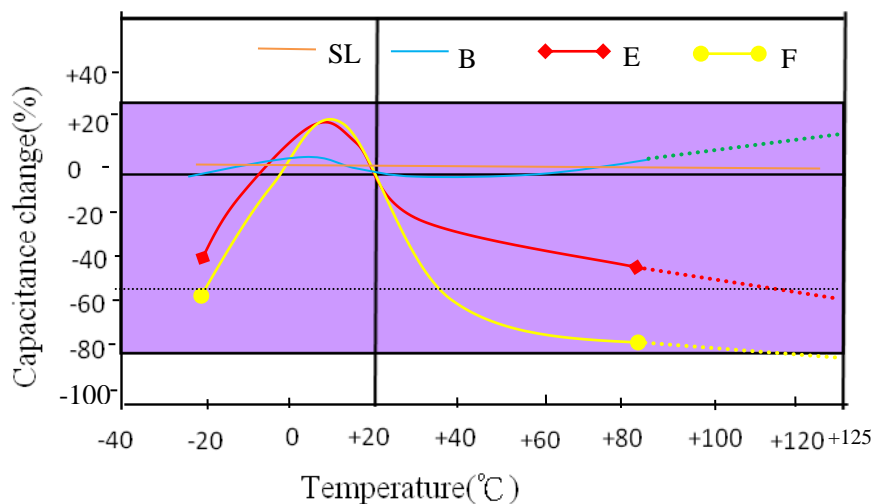
编 号/Number	TRX-3-079	制定日期/Date	2019-09-15
发行版次/Issue	B1	页 码/Page	Page 12 of 22

NO	Item 项目	Performance 性能		measuring method 测试方法															
16	4.14 Endurance 持久性	visual examination 目视检查	No visible damage 无可见损伤	Subjected to 8KV impulses for three times. 承受 8KV 脉冲 3 次 Test temperature: 测试温度 125±3°C Duration: 持续时间 1000+24/-0 hours test voltage: 测试电压 680VAC (1.7U _R), except that once every hour the voltage shall be increased to 1000v r.m.s. for 0.1s. 680 VAC (1.7U _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°C for 24±2 hours before measurements. 测量前电容应放置在 25±3°C 下 24±2 小时															
		Capacitance 电容量	$\Delta = (C_X - C_0) / C_0$ $\Delta: \pm 10\%$																
		voltage proof 耐压	accorder 4.2.1																
		Insulation resistance 绝缘电阻	$\geq 3000M\Omega$ $\Delta = (R_X - R_0) / R_0$ $\Delta \leq 30\%$																
17	4.15 Charge and Discharge 充放电	Capacitance 电容量	$\Delta = (C_X - C_0) / C_0$ $\Delta: \pm 10\%$	Charge voltage: 充电电压 570VAC(√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 $R = \frac{220 \times 10^{-6}}{C_R} \Omega$ Capacitor shall be placed at 25±3°C for 24±2 hours before measurements. 测量前 电容应放置在 25±3°C 下 24±2 小时															
		Insulation resistance 绝缘电阻	$\geq 3000M\Omega$ $\Delta = (R_X - R_0) / R_0$ $\Delta \leq 30\%$																
18	4.17 Passive flammability 阻燃性	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。		category: 级别 B															
				<table border="1"> <tr> <td>volume ranges 容量范围</td> <td>flame time 火焰时间</td> <td>Maximum burning time 最大燃烧时间</td> </tr> <tr> <td>V<250mm³</td> <td>5S</td> <td>≤10S</td> </tr> <tr> <td>250<V≤500mm³</td> <td>10S</td> <td>≤10S</td> </tr> <tr> <td>500<V≤1750mm³</td> <td>20S</td> <td>≤10S</td> </tr> <tr> <td>V>1750mm³</td> <td>30S</td> <td>≤10S</td> </tr> </table>	volume ranges 容量范围	flame time 火焰时间	Maximum burning time 最大燃烧时间	V<250mm ³	5S	≤10S	250<V≤500mm ³	10S	≤10S	500<V≤1750mm ³	20S	≤10S	V>1750mm ³	30S	≤10S
		volume ranges 容量范围	flame time 火焰时间	Maximum burning time 最大燃烧时间															
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		250<V≤500mm ³	10S	≤10S															
500<V≤1750mm ³	20S	≤10S																	
V>1750mm ³	30S	≤10S																	
		V<250mm ³	5S	≤10S															
		250<V≤500mm ³	10S	≤10S															
		500<V≤1750mm ³	20S	≤10S															
		V>1750mm ³	30S	≤10S															

 TRX 专注电容器廿年	SMD-Y 型 陶瓷交流固定电容器 /SMD Y a.c. ceramic capacitors			
	编 号/Number	TRX-3-079	制定日期/Date	2019-09-15
	发行版次/Issue	B1	页 码/Page	Page 13 of 22

NO	Item 项目	Performance 性能	measuring method 测试方法
19	4.19 Component solvent Resistant 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°C The capacitor shall be immersed 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°C The capacitor shall be immersed 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:

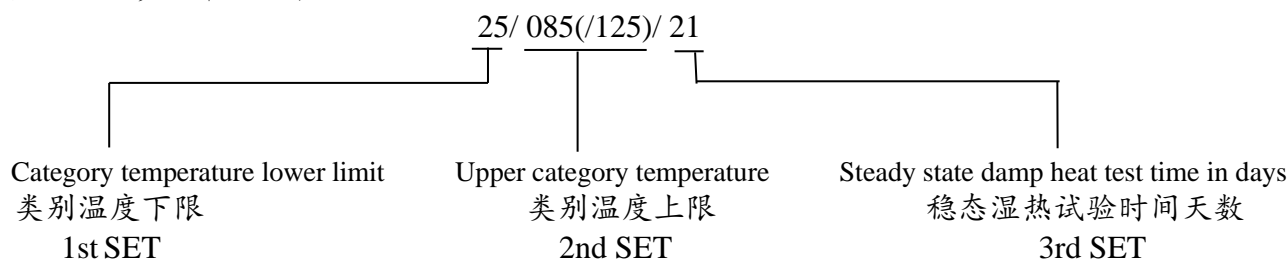


 TRX 专注电容器廿年	SMD-Y 型 陶瓷交流固定电容器 /SMD Y a.c. ceramic capacitors			
	编 号/Number	TRX-3-079	制定日期/Date	2019-09-15
	发行版次/Issue	B1	页 码/Page	Page 14 of 22

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°C
55	-55°C
40	-40°C
25	-25°C
10	-10°C
00	0°C
05	+5°C

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°C
125	+125°C
110	+110°C
085	+85°C
080	+80°C
075	+75°C
070	+70°C

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



 TRX 专注电容器廿年	SMD-Y 型 陶瓷交流固定电容器 /SMD Y a.c. ceramic capacitors		
	编 号/Number	TRX-3-079	制定日期/Date
发行版次/Issue	B1	页 码/Page	Page 15 of 22

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



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



SMD-Y 型 陶瓷交流固定电容器
/SMD Y a.c. ceramic capacitors

 TRX 专注电容器廿年	编 号/Number	TRX-3-079	制定日期/Date	2019-09-15
	发行版次/Issue	B1	页 码/Page	Page 16 of 22

10. 制造日期代码 (TRX 特锐祥)/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.

电容器可在额定的气候类别温度范围内短期（3 个月）贮存。

(3). 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°C

贮存温度：-25 to +40°C

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

贮存湿度：不超过 80%，并无结露现象

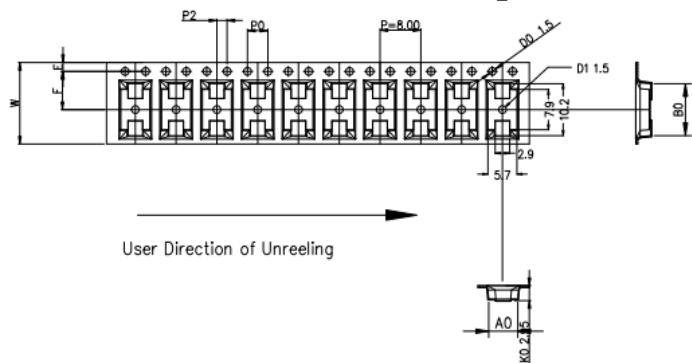
■ Maximum duration 12 months.

贮存期限：最大 12 个月

TRX 专注电容器廿年	SMD-Y 型 陶瓷交流固定电容器 /SMD Y a.c. ceramic capacitors			
	编 号/Number	TRX-3-079	制定日期/Date	2019-09-15
	发行版次/Issue	B1	页 码/Page	Page 17 of 22

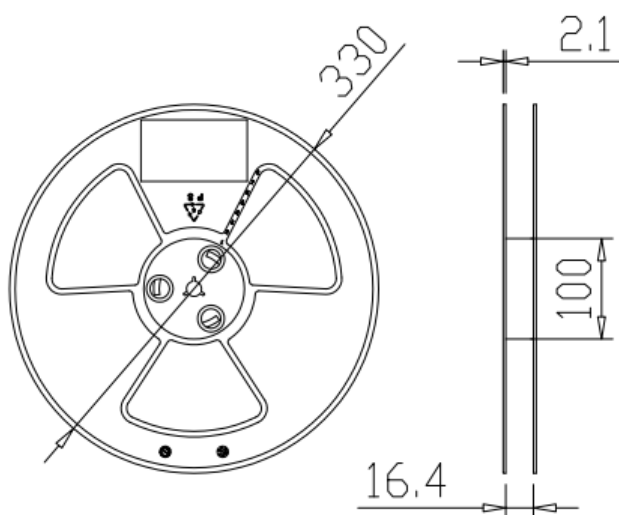
12. 包装/Packing

12.1 载带尺寸/Dimension of tape



ITEM	△ W	A0	B0	K1	K0	P	F	E	D0	D1	P0	P2	T
DIM	16.0 ± 0.30	5.70 ± 0.10	10.20 ± 0.10	---	2.95 ± 0.10	8.00 ± 0.10	7.50 ± 0.10	1.75 ± 0.10	1.5 ± 0.10	1.5 ± 0.10	4.0 ± 0.10	2.0 ± 0.10	0.30 ± 0.05
ALTERNATE													

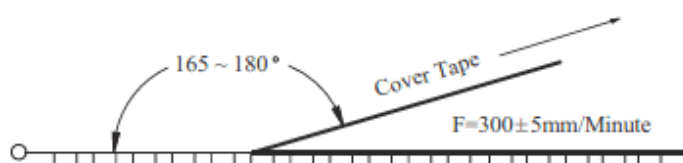
12.2 REEL:



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





SMD-Y 型 陶瓷交流固定电容器
/SMD Y a.c. ceramic capacitors

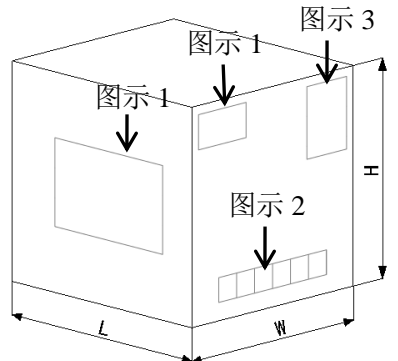



 TRX 专注电容器廿年	编 号/Number	TRX-3-079	制定日期/Date	2019-09-15
	发行版次/Issue	B1	页 码/Page	Page 18 of 22

12.4 包装数据表/Product Packaging Scheme





inner-packaging 内包装:

 <p>Reel Size: 13inch 3.0KPCS/Reel</p>	 <p>内盘标签 TRX 料号 TMY1221K</p>	No.	Item
		①	TRX Des:物料描述
		②	P/N 客户料号
		③	Mfr 特锐祥料号
		④	D/C 生产日期
		⑤	Lot No. 生产批号
		⑥	Q'ty 数量
 <p>Label 其他标签</p>	⑦	SPEC 规格	

Outer-packaging 外包装:


													
				<table border="1"> <tr> <th colspan="3">Dimension 尺寸(mm)</th> <th>Quantity 数量</th> <th>Out Box Weight 外箱重量</th> </tr> <tr> <th>L</th> <th>W</th> <th>H</th> <td rowspan="2">42KPCS</td> <td rowspan="2">18.22KG</td> </tr> <tr> <td>355</td> <td>358</td> <td>294</td> </tr> </table>	Dimension 尺寸(mm)			Quantity 数量	Out Box Weight 外箱重量	L	W	H	42KPCS
Dimension 尺寸(mm)			Quantity 数量	Out Box Weight 外箱重量									
L	W	H	42KPCS	18.22KG									
355	358	294											

Package sketch 包装示意图:

 <p>Out Box</p>	 <p>10Reel/Box</p>	 <p>Pallet Size(L/W/H) : 1100*1100*90mm</p>	 <p>Pallet Size(L/W/H) : 1100*1100*1600mm</p>
--	---	---	--

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.

	SMD-Y 型 陶瓷交流固定电容器 /SMD Y a.c. ceramic capacitors		
	编 号/Number	TRX-3-079	制定日期/Date
发行版次/Issue	B1	页 码/Page	Page 19 of 22

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。

	SMD-Y 型 陶瓷交流固定电容器 /SMD Y a.c. ceramic capacitors			
	编 号/Number	TRX-3-079	制定日期/Date	2019-09-15
	发行版次/Issue	B1	页 码/Page	Page 20 of 22

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($\tan\delta$) 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 capacitance at 20°C. 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°C 时电容量的百分比。

 TRX 专注电容器廿年	SMD-Y 型 陶瓷交流固定电容器 /SMD Y a.c. ceramic capacitors			
	编 号/Number	TRX-3-079	制定日期/Date	2019-09-15
发行版次/Issue	B1	页 码/Page	Page 21 of 22	

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

(1). for capacitance and Dissipation factor($\tan\delta$): 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到电容的容量和损耗,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。

(2). 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。



SMD-Y 型 陶瓷交流固定电容器
/SMD Y a.c. ceramic capacitors

编 号/Number	TRX-3-079	制定日期/Date	2019-09-15
发行版次/Issue	B1	页 码/Page	Page 22 of 22

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 3rd: 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
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- (5). GB/T 2828.1-2003 (IDT ISO 2859-1:1999) Sampling procedures for inspection by attributes-
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- (7). GB/T 2691-1994 (IDT IEC 62:1992): Marking codes for resistors and capacitors
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