



# 规格承认书

Specification for approval

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_


<b>JAENS</b>	
<b>SUNNY</b>	



**TRX 特锐祥**

专注电容器廿年


**TRX 电容器一级代理商**

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 <b>TRX</b> 专注电容器廿年	<b>SMD Y2 a.c. ceramic capacitors</b>			
	/Number	TRX-3-082	/Date	2020-02-10
	/Edition	A0	/Page	Page 2 of 23

## /E.C.LIST

Material name	SMD-Y2.CAP		TRX P.N.	See list	
Model NO.	See list	Edition	A0	Date	2020-02-10
Edition	Date	Main update item		Remarks	
A0	2020-02-10	New Version			
Modify	JAENS	Check	/	Approve	SUNNY

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## / Recognized specifications

CODE	CUSTOMER P.N.	TRX P.N.	Product description	Package code
1	/	TGY2681KB	SMD-Y2Y5P681K/AC300V	6054
2	/	TGY2102KB	SMD-Y2Y5P102K/AC300V	6054
3	/	TGY2222ME	SMD-Y2Y5U222M/AC300V	6054
4	/	TGY2332ME	SMD-Y2Y5U332M/AC300V	6054
5	/	TGY2472MF	SMD-Y2Y5V472M/AC300V	6054
6				
7				
8				
9				
10				
11				
12				

2/ attached sheet II

**TRX SMD-Y1.CAP**

**Capacitance Range and T.C Differentiation (Unit:pF Y1)**

Specification and model description of Y1 AC ceramic fixed capacitor:


T.C	680	1000	2200	3300	4700
2B(Y5P)					
2E(Y5U)					
2F(Y5V)					
U <sub>R</sub>	300V.ac				
Operating Temperature	-40 to 125				
Climatic category	40/ 125/ 21				

1000V

100Hz


About Y AC ceramic fixed capacitor acknowledgement specifications description:

Y 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. /Product Name

T   G   Y2   102   K   B  
 ①   ②   ③   ④   ⑤


No.	Code	Explain
①	T	TL TL series
②	G	High capacitance
③	Y2	Safety class
④	102	Capacitance   The first o. <input type="checkbox"/> A



/Explanation	
 TRX	/ registered trademark / brand
TL	SMD-Y2 SMD-Y2 series
B	/ code of Dielectric B(Y5P) / E(Y5U) / F(Y5V)
102	/ Capacitance (680-4700pF : 681-472)
K	/Capacitance tolerance K( 10%)/M( 20%)
X1 440V~	X1 X1 class rated voltage
Y2 300V~	Y2 Y2 class rated voltage
M0512	Date code

### 3. /Date code

code of year		code of month		code of day					
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

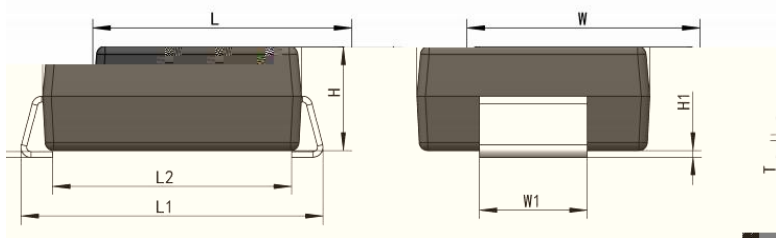
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### 3. /Certificates

certificates			
Certification	Standard number	Certificate number	Certified voltage
UL/CUL	UL/CSA 60384-14	E315719	AC300V(r.m.s.)
CQC	GB/T6346.14-2015	CQC20001280609	AC300V(r.m.s.)
ENEC	EN 60384-14:2013/A1:2016	ENEC-03177	AC300V(r.m.s.)
KC	K60384-14	HU03034-21003A	AC250V(r.m.s.)

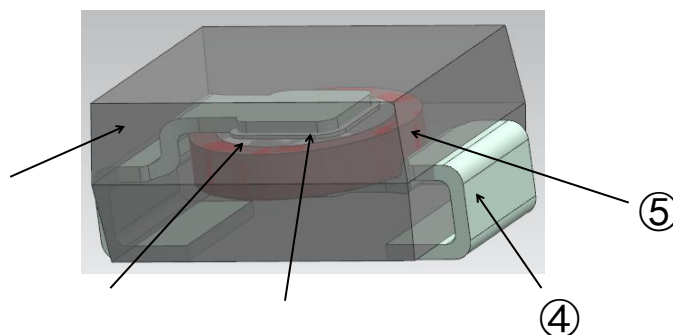
### 5. /Product structure

#### 5.1 /Product size




Product Dimension(mm)			
L	6.0±0.5	W	5.4±0.5
L1	7.0±0.5	L2	5.5±0.5
H	2.38±0.1	W1	2.5±0.05
H1	0.1±0.05	T	0.13±0.02

#### 5.2 /Product structure

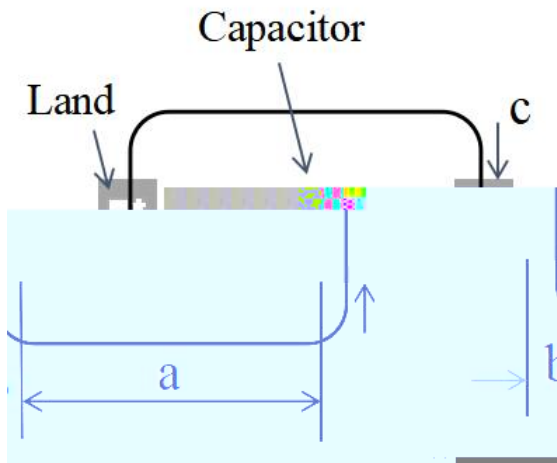


No.	Part name	Material
①	Coating	(UL94V-0) Epoxy molding compound (UL94V-0)
②	Electrode	Copper
③	Solder	Sn-Pb-Ag Sn-Pb-Ag Solder
④	Lead Pin	Tinned copper
⑤	Dielectric	Ceramic


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#### 5.4 /Land Dimensions

The recommendable land dimensions for reflow soldering are follows.Regarding the “a”dimension to ensure the creepage distance required by the safety standard app





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## 6.2 /Flow Soldering

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

280°C。

Soldering temperature 280°C max.

30 。

Soldering time 30s max.

200°C。

Preheating temperature 200°C max.

180 。

Preheating time 180s max.

## 6.3 /Soldering Iron PCB/PWB

When soldering this product to a PCB/PWB, do not exceed the solder heat resistance 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.

400°C

Temperature of iron-tip 400 max.

50

Soldering iron wattage 50W max.


5

Soldering time 5s max.

## 7. / Performance and test methods

NO	Item	Specification	test method
1	Appearance	No visible damage Legible marking Lead pin is not oxidation and its surface is without sundries.	unaided eye or magnifier
2	Dimensions	5.1 See 5.1 for details	Using calipers and micrometers




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NO	Item	Specification	test method
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visual  
examination

8 Resistance to  
soldering  
heat

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NO	Item		Specification	test method
11	Vibration resistance		Capacitor shall not visible damage  Y5P: ±10% Y5U: ±15% Y5V: ±15%  DF 2.5%	Frequency rans: 10→55→10Hz  /swing:0.75mm  6 The total duration shall be 6 hours  X Y Z 2 duration of exposure at X,Y,Z 2hours
12	Damp heat (steady state)	visual examination	No visible damage	/test temperature : 40±2°C  /humidity : 95±3%RH  /duration : 21d  U <sub>R</sub> (300V)  voltage: Apply U <sub>R</sub> (300V) to half of the samples and no voltage to the other half  25±3  24±2 capacitor shall be placed at 25±3°C for 24±2hours before measurements.
Capacitance		$\Delta = (C_x - C_0) / C_0$ Y5PΔ: ±10% Y5UΔ: ±15% Y5VΔ: ±15%		
voltage proof		NO.3 Pass the item NO.3		
I.R.		≥3000MΩ		
13	Endurance	visual examination	No visible damage	/Test temperature : 125±3°C  /Duration : 1000 <sup>+24</sup> <sub>0</sub> hours  510 VAC 1.7U <sub>R</sub> 1000V  0.1 Test voltage : 510VAC 1.7U <sub>R</sub> except that once every hour the voltage shall be increased to 1000v r.m.s. for 0.1s.  47Ω±5%  Each of these voltage shall be applied To each capacitor individually through a resistor of 47Ω±5%.  25±3°C  24±2 Capacitor shall be placed at 25±3°C for 24±2hours before measurements.
Capacitance		$\Delta = (C_x - C_0) / C_0$ Y5PΔ: ±10% Y5UΔ: ±15% Y5VΔ: ±15%		
voltage proof		NO.3 Pass the item NO.3		
I.R.		≥3000MΩ		

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NO	Item	Specification	test method
----	------	---------------	-------------

No permanent breakdown or flashover during the test period.

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.

Peak impulse voltage : 5.0KV

14 Impulse voltage

24

3

Impulses distance : 10s

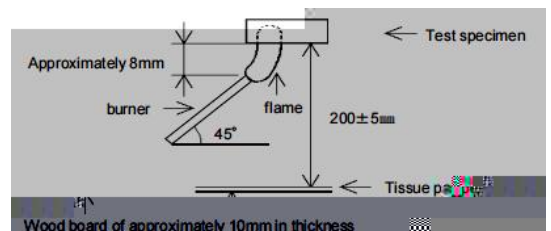
If all 24 impulses have been applied to the capacitor and 3 or more of them are of a waveform indicating that no self-healing breakdowns or flashovers have occurred, then the capacitor shall be counted as conforming.

Impulses times : 24

If less than three impulses are of the required waveform, then the capacitor shall be counted as a nonconforming item.

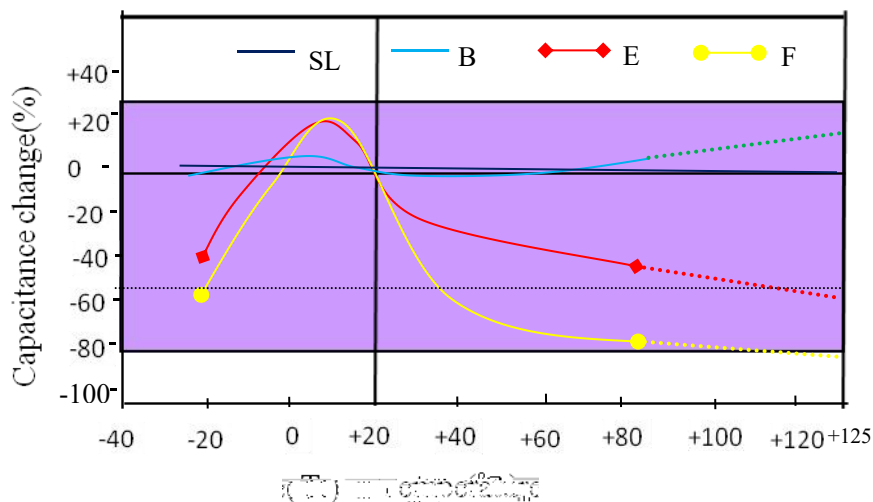
The bulb is a 30W


15 Passive flammability



NO	Item	Specification	test method
16	Component solvent Resistanc	No visible damage. NO.3~NO.7 Performance according to No.3 ~ No.7	:30 5% 70 5% Solvent to be used: 30 5%alcohol and 70 5%fluxional compound /Solvent temperature: 23±5°C 5 0.5 The capacitor shall be immersed in solvent for 5±0.5seconds. /Recovery time: 8hours
17	Solvent resistance of the marking	The marking shall be legible	:30 5% 70 5% Solvent to be used: 30 5%alcohol and 70 5%fluxional compound /Solvent temperature: 23±5°C 5 0.5 10 The capacitor shall be immersed in solvent for 5±0.5seconds and its markshall be wiped with pledget for 10times.

### 8. /Capacitor temperature characteristic



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**9. /Content of toxic and harmful substances control requirements**

RoHS2.0 2011/65/EU

halogen

REACH No190 7/2006



Substances	concentration (unit: ppm)
/Cadmium and cadmium compounds	<100
/Lead and lead compounds	<1000
/Mercury and mercury compounds	<1000
/Hexavalent chromium compounds	<1000
PBBS/Polubrominated biphenyls	<1000
PBDES/Polubrominated diphenylethers	<1000
+ + + /Cd+Pb+ Hg + Cr+6(packaging materials)	<100
/Cl	<900
/Br	<900
+ /Cl+Br	<1500
REACH SVHC Substances of Very High Concern (SVHC) of REACH	TRX REACH The latest reach report of TRX shall prevail

**10. /Storage conditions**

(1).

The insulating Epoxy molded capacitors does not form a perfect seal; therefore, do not use or store capacitors in a corrosive atmosphere, especially where chloride gas, sulfide gas, acid, alkali, salt or the like are present. And avoid exposure to moisture. So, in order to avoid the absorption of moisture, capacitors are packed in moisture-proof envelope.

(2). 12

Store the capacitors in the following conditions at all times, and use within 12 months after delivered.

/Temperature: 10 30  
/Humidity: 60%max.

(3). 168

Solder the enclosed capacitors within 168 hours after opening the moisture-proof package. After opening, store the capacitors in moisture-proof package with a desiccant and HIC card and keep the above condition.

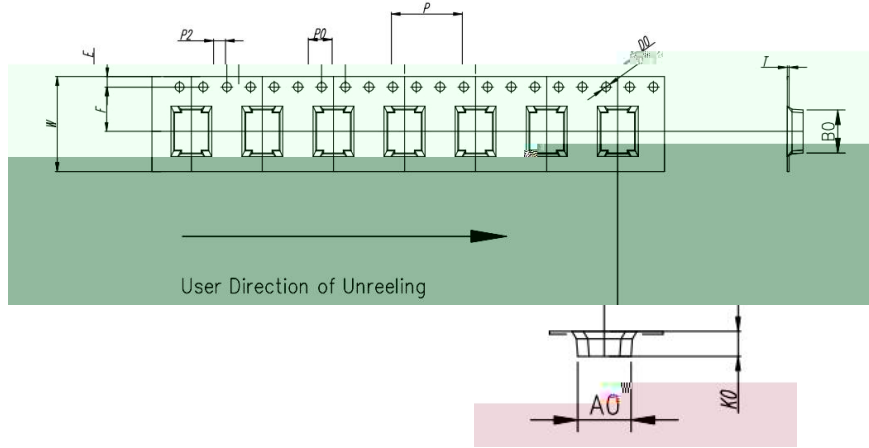
(4). 6

(60 168 )

In case the storage period has been exceeded 6 months or the indicator color of a enclosed HIC card has changed when the package has been opened, perform baking (60°Cx168hr) before soldering.

## 11. /Product packaging

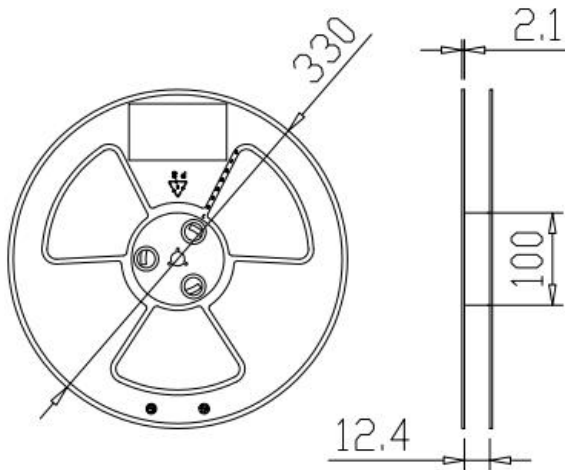
### 11.1 /Dimension of tape



未标注斜角为: 5°.

ITEM	W	A0	B0	K1	K0	P	F	E	D0	D1	PO	P2	T
DIM	16.0	$5.70^{+0.30}_{-0.30}$	$7.30^{+0.10}_{-0.10}$	---	$2.70^{+0.10}_{-0.10}$	12.0	$7.50^{+0.10}_{-0.10}$	$1.75^{+0.10}_{-0.10}$	$1.5^{+0.10}_{-0.00}$	$\phi 0.00^{+0.10}_{-0.00}$	$4.0^{+0.10}_{-0.10}$	$2.0^{+0.10}_{-0.10}$	$0.30^{+0.05}_{-0.05}$
ALTERNATE													

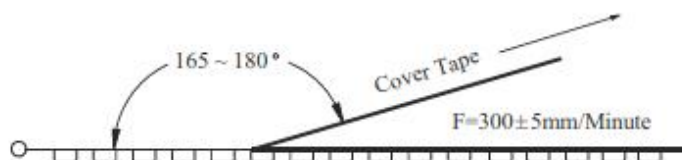
### 11.2 /REEL




REEL	REEL SIZE
3000pcs	13inch

### 11.3 /Peeling Strength

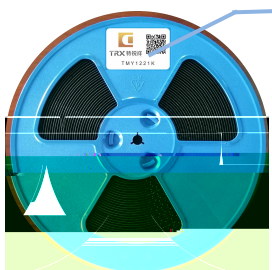


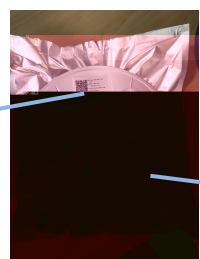
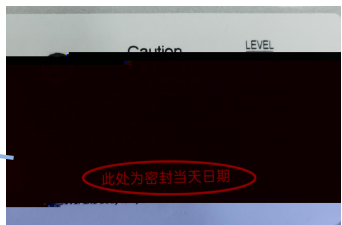
Item	Data	Remark
Cover tape adhesion	10 ~ 100g	Carrier tape and cover tape open angle 165 ~ 180° F=300± 5mm/minute

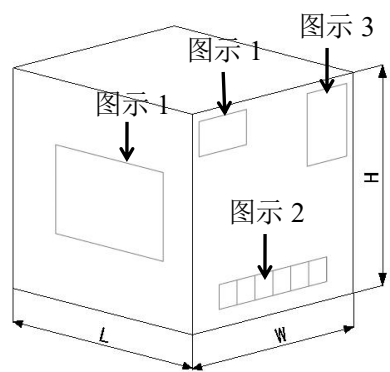











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### 11.4 /Product Packaging Scheme

<b>/inner-packaging</b>			<b>/Item</b>	
 <p>标签/Label</p> <p>/Reel Size: 13inch 3.0KPCS/Reel</p>  <p>TRX 料号 /Inner disc label</p>  <p>/Product information label</p>  <p>/Label on Sealed bag</p>  <p>/Humidity sensitive label</p>	TRX.Des		P/N	
	Mfr		D/C	
	Lot.No		Q~TY	
	SPEC			

<b>/Outer-packaging</b>																	
 <p>图示 1 /Figure 1</p>	 <p>图示 2 /Figure 2</p>	 <p>图示 3 /Figure 3</p>	<table border="1" style="width: 100%;"> <thead> <tr> <th colspan="3">(mm) Dimension</th> <th>Quantity</th> <th>Out Box Weight</th> </tr> <tr> <th>L</th> <th>W</th> <th>H</th> <td rowspan="2">45KPCS</td> <td rowspan="2">15.0KG</td> </tr> </thead> <tbody> <tr> <td>355</td> <td>358</td> <td>294</td> </tr> </tbody> </table>		(mm) Dimension			Quantity	Out Box Weight	L	W	H	45KPCS	15.0KG	355	358	294
(mm) Dimension			Quantity	Out Box Weight													
L	W	H	45KPCS	15.0KG													
355	358	294															

<b>/Package sketch:</b>					
 <p>/Out Box</p>	15	/	 <p>/15Reel/Box</p>	 <p>Pallet Size(L/W/H) 1100*1100*90mm</p>	 <p>Stacking volume(L/W/H) 1100*1100*1600mm</p>
1.	5	4.	5	2. PALLET & WRAPPING	
<p>3. 50cm</p>					
<p><b>Remark:</b> 1. The 5 on the packing is stacked layers can't more than 5 layers; 2. Pallets packaging &amp; long-distance transport should be warpping; 3. 50 cm above the height of the parcel do not drop; 4. Normal temperature / humidity keeping.</p>					

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## 12. /Application notes

- ①. Attention is drawn to the fact that repetition of the voltage proof test by the user may damage the capacitor.
- ②. PCB PCB  
PCB  
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.
- ③. Avoid any compressive, tensile or flexural stress.
- ④. Please consult us first if you wish to embed the capacitor in plastic resins.
- ⑤. PCB  
Do not move the capacitor after it has been soldered to the board.
- ⑥. PCB  
Do not pick up the PC board by the soldered capacitor.