

/ Specification for approval

/ CUSTOMER _____

/ CUSTOMER P.N. _____

/TRX P.N. _____

/MODEL NO. _____ Y1

	RoHS	REACH	Halogen

/ prepare	/ customer to confirm (signed)
/ check	
/ approve	/(signed subscription, please also one copy)



TRX 特锐祥

专 注 电 容 器 11 年

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/ attached sheet

/ Recognized specifications

/CODE	/ CUSTOMER P.	/TRX P.N.	/ MODEL NO.	/ REMARKS
1				
2				
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16				
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18				
19				
20				

Y

1000V

100Hz

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.

	Y			
	/Y a.c. ceramic capacitors			
	/Number	TRX3-077	/Date	2014.12.25
	/Issue	B0	/Page	Page 4 of 24

1.

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Dielectric	c					Dimensions mm						
	Capacitance pF		V AC	60s V AC		D	T	F	d	L	B	C
		2.0		4000Q	EMC Q q							
									0.5	20.		

ang (e

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1.How to order

Y1 F 222 M 064 X 280 A
 Class Dielectric Capacitance Tolerance Dielectric diameter Leads spacing Leads length Lead Type

/type Y

/Temperature coefficient characteristic Y5P/Y5U/Y5V

/ Nominal capacity

Y5P(/Capacity unit PF)											
/CODE	101	151	221	271	331	391	471	561	681	821	102
Nominal capacity /	100	150	220	270	330	390	470	560	680	820	1000
Y5U(/Capacity unit PF)											
/CODE	471	102	152	222	272	332	392	472			
Nominal capacity /	470	1000	1500	2200	2700	3300	3900	4700			
Y5V(/Capacity unit PF)											
/CODE	471	102	152	222	272	332	392	472			
Nominal capacity /	470	1000	1500	2200	2700	3300	3900	4700			

/Capacity of allowed error

/	Y5P	Y5U	Y5V
Permissible error	10%	20%	20%

/Medium diameter

Y5P(mm 1.0)											
	101	151	221	271	331	391	471	561	681	821	102
	6.5	6.5	6.5	6.5	7.5	8.5	8.5	9.5	9.5	10.	11.
Y5U(mm 1.0)											
	471	102	152	222	272	332	392	472			
	6.5	7.5	9.0	11.	12.	12.	13.	15.			
Y5V(mm 1.0)											
	471	102	152	222	272	332	392	472			
	6.5	6.5	7.5	8.5	9.0	10.	11.	11.			

/Pitch 0.8

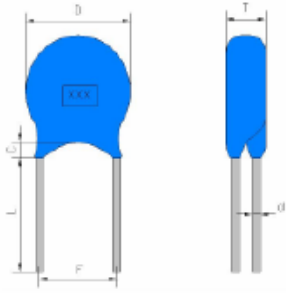
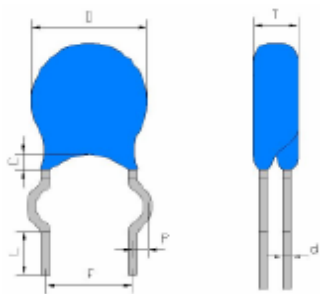
Y1 Y2 10.0mm 7.5mm Y1 10.0mm Y2 7.5mm

/Feet Long

0 L 28.0

280 28.0 028 2.8

/Pin shape

			
A	B	C	D

!

/ Various code mentioned above for the company standard application!

	Y /Y a.c. ceramic capacitors			
	/Number	TRX3-077	/Date	2014.12.25
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5. / Performance test

NO	Item	
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	Y /Y a.c. ceramic capacitors			
	/Number	TRX3-077	/Date	2014.12.25
	/Issue	B0	/Page	Page 12 of 24

Continued

NO	Item	Performance	

Continued

NO	Item	Performance		measuring method
12	4.6 Rapid change of temperature	visual examination	No visible damage	upper category temperature +125 3 lower category temperature -25 3 number of cycles :5 duration of exposure at the temperature limits 30minutes 30 Capacitor shall be placed at 25 3 for 24 2h before initial measurements. 25 3 24 2
		voltage proof	accorder 4.2.1 4.2.1	
		Capacitance	Y5P: 10% Y5U: 20% Y5V: 20%	
		dissipation factor	Y5P: 2.5% Y5U: 2.5% Y5V: 2.5%	
		Insulation resistance	accorder 4.2.5	
13	4.7 Vibration	Capacitor shall not visible damage		Frequency rangs: 10 $\Delta 55\Delta 10\text{Hz}$ swing: 0.75mm, The total duration shall be 6 hours. 6 duration of exposure at X,Y,Z 2hours X Y Z 2
14	4.12 Damp heat (steady state)	visual examination	No visible damage	test temperature: 40 2 humidity: 95 3%RH duration: 500+24/- 0hours voltage: 500VAC U_k for one half of the samples. U_k 500V capacitor shall be placed at 25 3 for 24 2hours before measurement. 25 3 24 2
		Capacitance	$= (C_x - C_0) / C_0$: 15%	
		voltage proof	accorder 4.2.1	
		Insulation resistance	3000M $= (R_x - R_0) / R_0$ >50%	

Continued

NO	Item	Performance	measuring method
15	4.13 Impulse voltage	No permanent breakdown or flashover during the test period.	<p>Peak impulse voltage: 8.0KV</p> <p>Impulses distance : 10seconds</p> <p>Impulses times: 24</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</p> <p>.</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 flash overs have occurred, then the capacitor shall be counted as conforming.</p> <p>24 3</p> <p>—</p>	
<p>If less than three impulses are of the required waveform, then the capacitor shall be counted as a nonconforming item.</p> <p>—</p>			

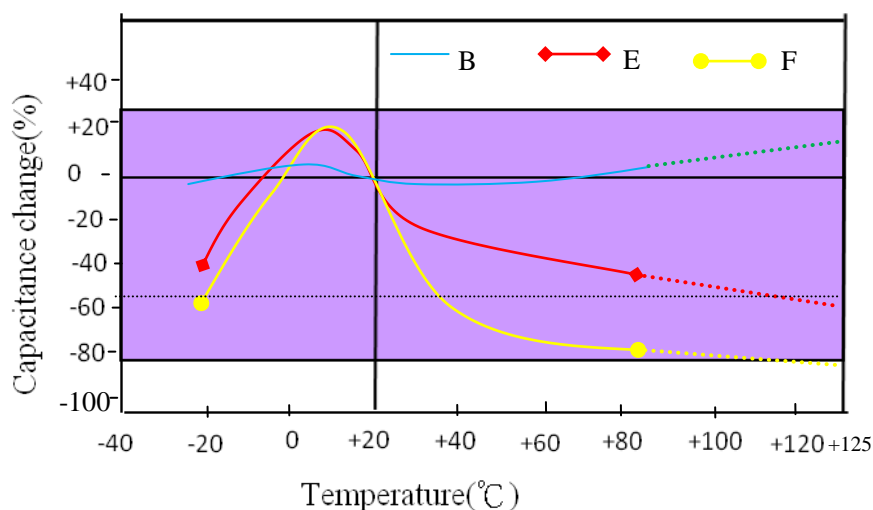
Continued

NO	Item	Performance		measuring method															
16	4.14 Endurance	visual examination	Novisibl edamage	Test temperature: 125 3 Duration: 1000+24/0hours test voltage: 850VAC 1.7UR except that once every hour the voltage shall be increased to 1000v r.m.s. for 0.1s. 850VAC UR 1000V 0.1s ⁻ Each of these voltage s hall be applied To each capacitor individually through a resistor of 47 5%. 47 5% Capacitor shall be placed at 25 3 for 24 2hoursbeforemeasurements. 25 3 24 2															
		Capacitance	$= (C_x - C_0) / C_0$: 20%																
		voltage proof	accorder 4.2.1																
		Insulation resistance	3000M $= (R_x - R_0) / R_0$ >50%																
17	4.15 Charge and Discharge	Capacitance	$= C_x - C_0 / C_0$: 20%	Charge voltage: 707VAC(2U) number of cycles: 10000 the rate of approximately: one operation per se cond. Each cycle shall consist of charging and dischargingthe capacitor. Each capacitor shall be individually charged by applying the test voltage through a resistor with the value $R = \frac{220 \cdot 10^{-6}}{C_R} \Omega$ Capacitor shall be placed at 25 3 for 24 2hours before measurements. 25 3 24 2															
		Insulation resistance	3000M $= R_x - R_0 / R_0$ >50%																
18	4.17 Passive flammability	category B The burning time of any specimen shall not exceed the time sp ecified.		category B															
		Burning droplets or glowing parts falling down shall not ignite the tissue paper.		<table border="1"> <thead> <tr> <th>volume ranges</th> <th>flame time</th> <th>Maximum burning time</th> </tr> </thead> <tbody> <tr> <td>V<250m³m</td> <td>5S</td> <td>30S</td> </tr> <tr> <td>250<V 500m³m</td> <td>10S</td> <td>30S</td> </tr> <tr> <td>500<V 1750m³m</td> <td>20S</td> <td>30S</td> </tr> <tr> <td>V>1750m³m</td> <td>30S</td> <td>30S</td> </tr> </tbody> </table>	volume ranges	flame time	Maximum burning time	V<250m ³ m	5S	30S	250<V 500m ³ m	10S	30S	500<V 1750m ³ m	20S	30S	V>1750m ³ m	30S	30S
		volume ranges	flame time	Maximum burning time															
		V<250m ³ m	5S	30S															
		250<V 500m ³ m	10S	30S															
500<V 1750m ³ m	20S	30S																	
V>1750m ³ m	30S	30S																	
-																			
-																			
-																			

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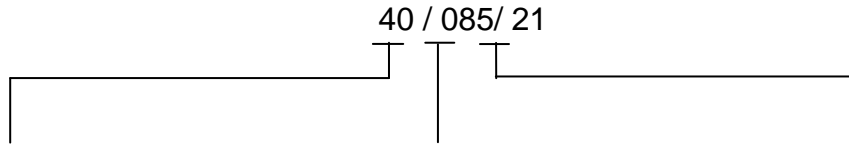
NO	Item	Performance	measuring method
19	4.19 Component solvent Resistanc	No visible damage. Performance accorder 4.2.1~4.2.5 4.2.1 ~ 4.2.5	Solvent to be used: 30 5%isopropyl alcohol and 70 5%fluxional compound 30 5% 70 5% Solvent temperature: 23 5 The capacitor shall be immersed in solvent for 5 0.5seconds. 5 0.5 Recovery time: 8hours
20	4.20 Solvent resistanc e of the marking	The marking shall be legible	Solvent to be used: 30 5%isopropyl alcohol and 70 5%fluxional compound 30 5% 70 5% Sdvent temperature: 23 5 The capacitor shall be immersed in solvent for 5 0.5seconds and its markshall be wiped with pletget for 10times. 5 0.5 10

6.



7. Climatic category

According to EIA STANDARD RS 198
RS 198



Category temperature lower limit Upper category temperature Steady state damp heat test time
in days

1st SET

2nd SET

3rd SET

1st SET Minimum ambient temperature of operation (Cold test)

2nd SET Maximum ambient temperature of operation (Dry heat test)

3rd SET Number of days (Damp heat steady state test)

Category Examples
according to IEC 60068 - 1
IEC 60068-1

25/085/04

25/085/21

40/085/21

55/125/21

55/125/56

First set

Two digits denoting the minimum ambient temperature of operation (Cold test)

65	-65
55	-55
40	-40
25	-25
10	-10
00	0
05	+5

Second set

Three digits denoting the maximum ambient temperature of operation (Dry heat test)






155	+155
125	+125
110	+110
085	+85
080	+80
075	+75
070	+70

Third set

Two digits denoting the number of days (Damp heat steady state test)

56	56 days
21	21 days
10	10 days
04	4 days
00	The component is not required to be exposed to damp heat.

8.

NO	COUNTR	STANDARD NO.	CLASSTYPE W CC P.F.C	FILE NO.	MARK
1	GERMAN EUROPE	VDE DIN EN 6038414 (VDE 0565 Teil 1 - 1): 2006-04 EN6038414:2005-08 IEC 60384 14(ed.3)	Y1 TY AC 400V 25/125/21C	40031733	 
2	USA CSA	UL CUL UL 60384 14 2010 CSA E6038414 :09	Y1 TY AC400/500V 25/125/21B	E31579	
3	CHINA	CQC IEC 60384 14:2005	Y1 TY AC500V 25/125/21B	CQC14001107432	
4	KOREA	KC KC6038414(2015-09) KC 603841(2015-09)	Y1 TY AC500V 25/125/21B	HU0303417001A	

9.Requirements for concentration limits for certain hazardous substances

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
Polubrominated biphenyls PBBS	<1000
Polubrominated diphenylethers PBDES	<1000
Cd+Pb+ Hg + Cr ⁶⁺ (packing materials) + + +	<100
Cl	<900
Br	<900
Cl+Br +	<1500
SVHC (155item) REACH 155	<1000

10. Manufacturing date codes (TRX)

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

Note: the year code repeats once every 20 years for a one - week period.
 20

11. Storage conditions

. 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.

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

3

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

Storage temperature: - 25 to +40

- 25 to +40

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

80%

Maximum duration 12 months.

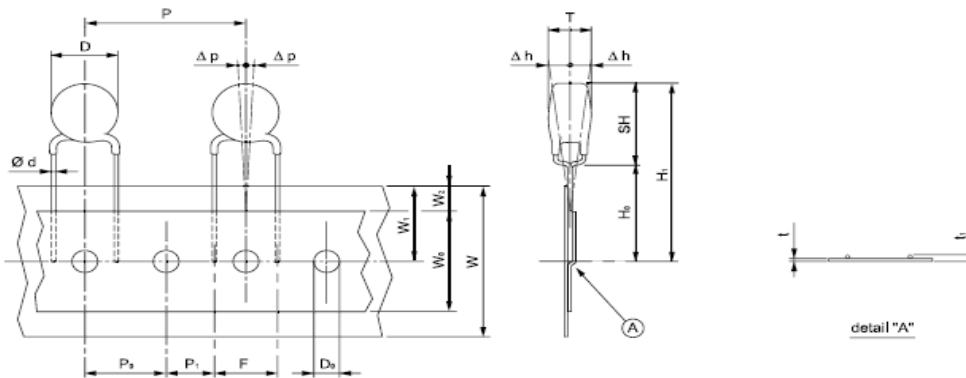
12.Packing

A:bulk

DIMENSION	Lead length	Bag
D<8mm	10mm	1000PCS
	>10mm	500PCS
D 8mm	500PCS	

B: TAPE (1000PCS/BOX)

Capacitors on tape type pitch 7.5mm /10mm



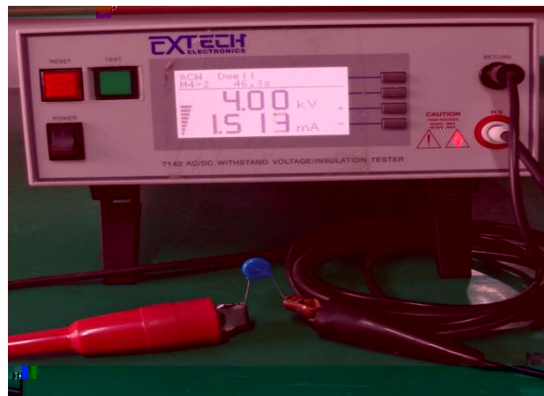
Parameter	Symbol	Taping Specifications (unit: mm)		
		Pitch 7.5	Pitch 10	Tolerance
lead diameter	d	0.55	0.55	0.1
pitch between capacitors	p	12.7	25.4	1.0
feed-hole pitch	P ₀	12.7	12.7	0.3
feed-hole centre to lead centre	P ₁	8.95	7.62	0.7
lead spacing	F	7.5	10.0	1.0
component alignment	h	0	0	3.0
deviation along tape, left or right	p	0	0	1.3
tape width	w	18.0	18.0	0.5
hold-down tape width	W ₁	12.0	12.0	-
hole position	W ₂	9.0	9.0	0.5
hold-down tape position	W ₃	3.0	3.0	-
seated height to tape centre	H _b	20.0	20.0	1.0
maximum component height	H	37.0	37.0	-
feed-hole diameter	D ₀	4.0	4.0	0.2
total tape thickness	t	0.50	0.50	0.2
maximum thickness of tape and wires	t ₁	1.0	1.0	-

13. Cautions and warnings

- . Attention is drawn to the fact that repetition of the voltage proof test by the user may damage the capacitor.
- . Do not place the capacitor a PC board whose hole space differs from the specified lead space.
PCB PCB PCB
- . Avoid any compressive, tensile or flexural stress.
- . Please consult us first if you wish to embed the capacitor in plastic resins.
- . Do not move the capacitor after it has been soldered to the board.
PCB
- . Do not pick up the PC board by the soldered capacitor.
PCB

14. Voltage proof test guide

A. Correct Method



Operate explain:

- . Set up test voltage , current and time in high voltage instrument.
- . The two pins of capacitor are nipped in fixture of high voltage instrument.
- . Give the start button a slight press and the capacitor changed and tested, high voltage instrument stop output when the time arrived.

B. Error Method



Operate explain:

Capacitor was test with high voltage test probe for electriferous touch the two pins of capacitor.

16. general knowledge for ceramic Capacitors

. for capacitance and Dissipation factor($\tan \delta$) :

. The capacitor is tested after be clamped with the test tool, can not take the capacitor
 phenomenon for test with hand. Capacitance and dissipation factor are not exact because
 of temperature in hand and test result is not right.

. 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 attain test
 apparatus. 24

. for Voltage proof:

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.

17. Normative reference s

- . IEC 60384 1 2008 Fixed capacitors for use in electronic equipment Part 1: Generic specification
1
- . IEC 60384 14 3 rd 2005 Fixed capacitors for use in electronic equipment Part 14 Sectional
specification Fixed capacitors for el ectromagnetic interference suppression and connection to the
supply mains
14
- . 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
2 2
- . GB/T 2693 2001 (IDT IEC 60384- 1 1999) Fixed capacitors for use in electronic equipment -
Part 1: Generic specification
1
- . GB/T 2828.1- 2003 (IDT ISO 2859- 1:1999) Sampling procedures for inspection by attrib utes-
Part 1: Sampling schemes indexed by acceptance quality limit(AQL)for lot - blot inspection
1 (AQL)
- . GB/T 2474 1995 (IDT IEC 63:1963) Preferred number series for resistors and capacitors
- . GB/T 2694 1994 (IDT IEC 62:1992) Marking codes for resistors and capacitors
- (5). SJ/T 11363- 2006 Requirements for concentration limits for certain hazardous substances in
electronic information products
- (6). SJ/T 11364- 2006 Marking for control of polluti on caused by electronic information products
- . SJ/T 11365- 2006 Testing methods for hazardous substances in electronic information products
- . 2011/65/EU (RoHS2.0) The Restriction of the use of certain Hazardous substances i n Electrical
and Electronic Equipment
- . 2002/96/EC (WEEE) Waste Electrical and Electronic Equipment
- . 94/62/EC 2005/20/EC Europe Parliament and Council Directive 94/62/EC of 20 December 1994 on
Packaging and packaging waste
1994 12 20 94/62/EC
- . No 1907/2006 (REACH) Registration, Evaluation, Authorization and Restriction of Chemicals (151 item)