ËM¶ /E.C.LIST

ÆK / Material name	Y1(		¶Ü /TRX P.N.		
ÏÝÜ / Model NO.	Y1ÿU	±Ö /Data number	RÐ2006022	Y /Date	2020-06-03

» / Item	Y /Date	Ð /Edition	Ò /Reason	• /Remarks
1	2014-12-08	Q / New Version	w. More detailed content	
2				
3				
4				
5				

/ Modify	2Š	E / check		y / approve	

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š / attached sheet !

U Ÿ L / Recognized specifications

Ü /CODE	º x Ü / CUSTOMER P.	‹ , ¶ x Ü /TRX P.N.	Ÿ L ø Ü / MODEL NO.	• _ / REMARKS
1				
2				
3				
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20				

‘ Y ì ˆ ¬ … G (v U à Ÿ L ø Ü \ !

Á U ¢ Q • G (B â 1 ¶ 1000V ì (³ K 4 Ñ â 1 ¶ 100Hz (• (w • • d

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, an d with a nominal frequency not exceeding 100Hz.

1. U Ÿ L ³ y !

ø ! ö ø	ø ! ó ö

Dielectric	(w ÿ Ÿ d d c d c						Dimensions mm						
	Capacitance pF			V AC	60s V AC		D	T	F	d	L	B	C

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1.How to order 6

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

è ¶ µ + ø /type ! Y

é ¶ µ 1 g , ô g ‹ ÿ /Temperaturecoefficien torcharacteristic !Y5P/Y5U/Y5V

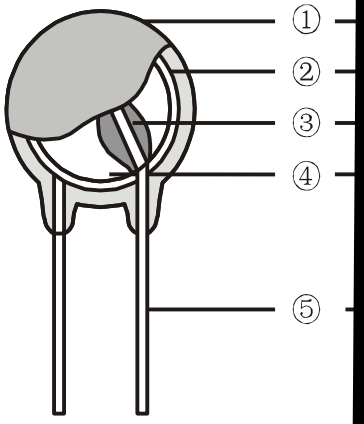
ê ¶ µ ³ K h / Nominal capacity !

Y5P(h æ * /Capacity unit ! PF)											
Ý ò /CODE	101	151	221	271	331	391	471	561	681	821	102
³ K ħ Nominal capacity	100	150	220	270	330	390	470	560	680	820	1000
Y5U(h æ * /Capacity unit ! PF)											
Ý ò /CODE	471	102	152	222	272	332	392	472			
³ K ħ Nominal capacity	470	1000	1500	2200	2700	3300	3900	4700			
Y5V(h æ * /Capacity unit ! PF)											
Ý ò /CODE	471	102	152	222	272	332	392	472			
³ K ħ Nominal capacity	470	1000	1500	2200	2700	3300	3900	4700			

ë ¶ µ h m b /Capacity of al lowable error !

m b / Permissible error	Y5P	Y5U	Y5V
	• 10%	• 20%	• 20%

3. ! 6 r l / Produc



4. ! 6 æ ³ / Product ma

³ H / Examp	

d _ / registered	
õ © ø Ü /ty	
) Ý ò /c	
/ capacitor clas	
³ K h / N	
h m / Ca	
/ Sa.ety	hark
VDE ENEC B / tge for KC VDE ENE	0VAC/500V
UL CQC(B / voltage for UL CQC	00VAC
Y Ý ò /code of making time	0410

5. ÿ Ÿ Ë / Performance test !

NO	Item » ,	

Continued # ¶

NO	Item » ,	Performance ÿ Ÿ	

Continued # ¶

NO	Item »,	Performance ÿ Ÿ		measuring method Ë º ¥
12	4.6 Rapid change of temperature 1 g Ù . - $	visual examination , Ê ¿	No visible damage M ¶ Î E d	upper category temperature h « + ¹ 1 g +125• 3 § lower category temperature • « + ¹ 1 g - 25 • 3 § number of cycles :5 duration of exposure at the temperature limits ! 30minutes } 1 g ³ W › ¨ · ! 30 Ó 2 Capacitor shall be placed at 25 • 3 § for 24 • 2h before initial measurements. h • (ë Â " } 25 • 3 § • 24 • 2 Ì ¨
		voltage proof • B	accorder 4.2.1 Î 4.2.1	
		Capacitance (h	Y5P: • 10% Y5U: • 20% Y5V: • 20%	
		dissipation factor E Û Ù ô	Y5P: • 2.5% Y5U:• 2.5% Y5V: • 2.5%	
		Insulation resistance ‡ X (¥	accorder 4.2.5	
13	4.7 Vibration ò N	Capacitor shall not visible damage(v M ¶ Î E d		Frequency rangs: 4 Ñ ³ 10 » 55 » 10Hz swing: ò ö 0.75mm, The total duration shall be 6 hours. ™ ¨ · 6 Ì ¨ duration of exposure at X,Y,Z ! 2hours } X Y Z W › ¨ · 2 Ì ¨
14	4.12 Damp heat (steady state) i 7 _	visual examination , Ê ¿	No visible damage M ¶ Î E d	test temperature: Ë 1 g 40 • 2 § humidity: ¡ g 95 • 3%RH duration: [# ¨ · 500+24/- 0hours voltage: 500VAC U_R for one half of the samples. , ‡ ¢ V U_R 500V capacitor shall be placed at 25 • 3 § for 24 • 2hours before measurements. h • (ë Â " } 25 • 3 § • 24 • 2 Ì ¨
		Capacitance (h	¸ =(C_x- C₀)/C ₀ ¸ : • 15%	
		voltage proof • B	accorder 4.2.1	
		Insulation resistance ‡ X (¥	ž 3000M& ¸ =(R_x- R₀)/R ₀ ¸ >50%	

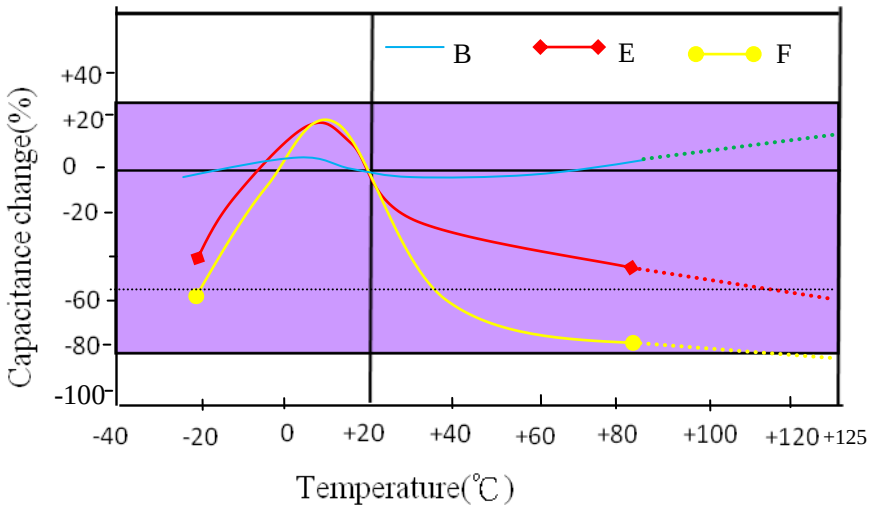
Continued # ¶

NO	Item » ,	Performance ÿ Ÿ	measuring method Ë º ¥
15	4.13 Impulse voltage ý j (B	No permanent breakdown or flashover during the test period. Ë r Y · R ÿ l Œ g Z î	Peak impulse voltage: ý j â (B 8.0KV Impulses distance : ý j o 6 % 10seconds Impulses times: ý j ¨ · 24
		If any three successive impulses are shown by the oscilloscope monitor to havehadawaveformindicating thatnoself - healingbreakdow ns or flashovers have taken placeinthecapacitor,then nofurtherimpulsesshallbe applied and the capacitor shallbecountedasconforming . " ´ U # 8 ± j l µ Ï v ³ ¡ µ Ï ù ¶ \ } (v Ÿ " ' ? ƒ Ð g Z î É) ¢ ä ý j (v ë 8 ´ æ L	
		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. " ´ N 24 Q ý j „ ë þ (v ¡ µ 3 Q g W • Ï ù ¶ µ ' ? ƒ Ð g Z î Ÿ " (v ë 8 ´ â æ L d	
		If less than three impulses areoftherequiredaveform,th en the capacitor shall be counted as a nonconforming item. " ´ r 8 j N N ' Ð Ï ù ö (v ë Ê â æ L » , d	

Continued # ¶

NO	Item » ,	Performance ÿ Ÿ	measuring method Ë º ¥
19	4.19 Component solvent Resistanc • ” ÿ	No visible damage. Performance accorder 4.2.1~4.2.5 M ¶ Î E d Ö 4.2.1 ~ 4.2.5 ÿ Ÿ	Solvent to be used: ° ” 30 • 5%isopropyl alcohol and 70 • 5%fluxional compound 30 • 5%Ó Ä Ÿ ä 70 • 5% $ ^ Solvent temperature: ” 1 g 23 • 5 § The capacitor shall be immerged in solvent for 5 • 0.5seconds. (v ë / } ” / 5 • 0.5 P d Recovery time: K ¨ · 8hours
20	4.20 Solvent resistanc e of the marking ³ • ” ÿ	The marking shall be legible ³ ë Â i	Solvent to be used: ° ” 30 • 5%isopropyl alcohol and 70 • 5%fluxional compound 30 • 5%Ó Ä Ÿ ä 70 • 5% $ ^ Sdvent temperature: ” 1 g 23 • 5 § The capacitor shall be immerged in solvent for 5 • 0.5seconds and its markshall be wiped with pledget for 10times. (v ë / } ” / 5 • 0.5 P M ã è º ³ 10 ±

6. (1 g ‹ ÿ !



7. Climatic category

According to EIA STANDARD RS 198

T l , B õ ¹ ? y ³ y RS 198

40 / 085/ 21

Category temperature lower limit in days

+ ¹ 1 g • « 1st SET

Upper category temperature

+ ¹ 1 g h « 2nd SET

Steady state damp heat test time

7 _ ¡ Ë r ¨ · Ÿ ô 3rd SET

1st SET ! Minimum ambient temperature of operation (Cold test) ´ « , B 1 g / _ Ë r

2nd SET! Maximum ambient temperature of operation (Dry heat test) n û « : , B 1 g $ Ë r

3rd SET ! Number of days (Damp heat steady state test) Ÿ ô 7 _ ¡ Ë r

Category Examples ‰ h H according to IEC 60068 -1 T l 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) f * ô " ¶ µ ´ « , B 1 g / _ Ë r	
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) 8 * ô ¶ µ « Ö] ´ , B 1 g $ Ë r	
155	+155 §
125	+125 §
110	+110 §
085	+85 §
080	+80 §
075	+75 §
070	+70 §

Third set 8 ¦ Two digits denoting the number of days(Damp heat steady state test) f * ô " ¶ µ ô Ÿ 7 _ ¡ Ë r	
56	56 days
21	21 days
10	10 days
04	4 days
00	The component is not required to be exposed to damp heat. ¦ Ñ â ' r ½ ¡

8. æ

NO	COUNTR	STANDARD NO.		CLASS TYPE W CC P.F.C	FILE NO.	MARK
1	GERMAN EUROPE	VDE	DIN EN 60384-14 (VDE 0565 Teil 1 -1): 2006-04 EN60384-14:2005-08 IEC 60384-14(ed.3)	Y1 TY AC 400V 25/125/21C	40031733	
2	USA CSA	UL CUL	UL 60384-14 2010 CSA E60384-14 :09	Y1 TY AC400/500V 25/125/21B	E315719	
3	CHINA	CQC	IEC 60384-14:2005	Y1 TY AC500V 25/125/21B	CQC14001107432	
4	KOREA	KC	KC60384-14(2015-09) KC 60384-1(2015-09)	Y1 TY AC500V 25/125/21B	HU03034-17001A	

9.Requirements for concentration limits for certain hazardous substances

] ½ ^) Ã h Å % ' Đ

RoHS2.0 2011/65/EU

halogen ¸ -

REACH No190 7/2006

RoHS H.F. REACH

Substances ^) ` K	concentration (unit: ppm) Ã h
Cadmium and cadmium compounds [$ æ ^	<100
Lead and lead compounds ƒ ƒ ƒ $ æ ^	<1000
Mercury and mercury compounds h ƒ h $ æ ^	<1000
Hexavalent chromium compounds P ƒ P $ æ ^	<1000
Polubrominated biphenyls • c S † PBBS	<1000
Polubrominated diphenylethers • c S † 6 PBDES	<1000
Cd+Pb+ Hg + Cr^{+6} (packing materials) [+ ƒ + h + ¢ ® P	<100
Cl Ï	<900
Br c	<900
Cl+Br Ï + c	<1500
SVHC (155item) REACH ' _ ^) 155 »	<1000

10.Manufacturing date codes ¼ (TRX¶)

code of year - Ý ò				code of month e Ý ò		code of day Ý ò			
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.
_ ! - Ú Ý ò $ 20 - ¢ ; Y 7 ¢ ± d

11. Storage conditions [É ¨ Ñ

Ô. 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.

½ 6 ½ C ½ B ½ 9 ú ½ 6 Á ^) ¥ G } › } ä ½ d

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

Ö. (v ¶ } • G w + ¹ 1 g ³ • k Y 3 Q e [É d

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

(v) ¨ · [É ë ‘ • y ¨ Ñ !

· Storage temperature: - 25 to +40 §

[É 1 g ! - 25 to +40 §

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

[É ¡ g ! â 1 ¶ 80% É M ½ £ À

· Maximum duration 12months.

[É Y « ! « Ö 12 Q e

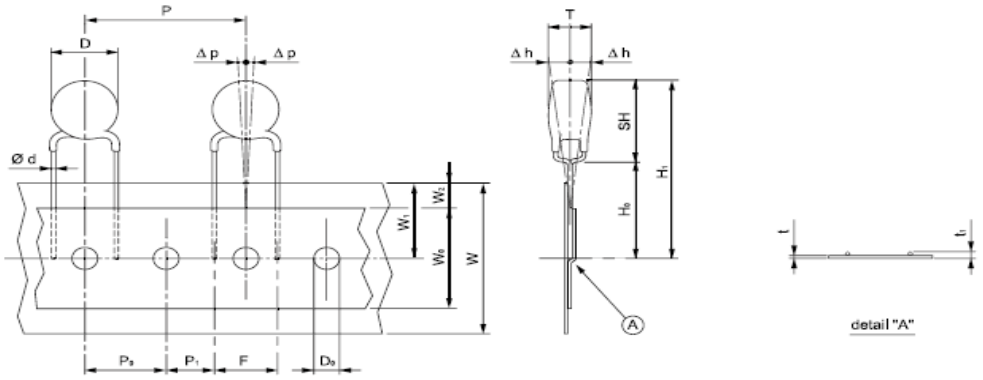
12.Packing g n

A:bulk m

DIMENSION dÊ	Lead length g	Bag ß
T D<8mm	• 10mm	1000PCS
	>10mm	500PCS
T DŽ 8mm	500PCS	

B: TAPE © Û (1000PCS/BOX)

Capacitors on tape type pitch 7.5mm /10mm (v G *



Parameter õ ô	Symbol ø Ü	Taping Specifications © Û Ÿ L (unit: mm)		
		Pitch 7.5	Pitch 10	Tolerance
lead diameter ¬ E	T d	0.55	0.55	• 0.1
pitch between capacitors (v · o	p	12.7	25.4	• 1.0
feed-hole pitch Ä o	P_0	12.7	12.7	• 0.3
feed-hole centre to lead centre) x Ä / ï þ ä ¬ / ï o	P_1	8.95	7.62	• 0.7
lead sp acing ä ¬ · o	F	7.5	10.0	• 1.0
component alignment y ¬	h	0	0	• 3.0
deviation along tape, left or right a ë Û * ° g	p	0	0	• 1.3
tape width © Û Ú g	w	18.0	18.0	• 0.5
hold-down tape width B Û Ú g	W_0	12.0	12.0	-
hole position Ä * "	W_1	9.0	9.0	• 0.5
hold-down tape position B Û * "	W_2	3.0	3.0	-
seated height to tape centre ¶ þ © Û / ï	H_0	20.0	20.0	• 1.0
maximum component height Û / ï þ D « Ö : g	H_1	37.0	37.0	-
feed-hole diameter) x Ä E	D_0	4.0	4.0	• 0.2
total tape thickness Û ™ g	t	0.50	0.50	• 0.2
maximum thickness of tape and wires ë Û ä ä ¬ « Ö g	t_1	1.0	1.0	-

13. Cautions and warnings CA

è . Attention is drawn to the fact that repetition of the volt age proof test by the user may damage the capacitor.

)û 7 •(B Ër ¶ Ÿ E*(v ƒ Ër (v â ¶ » ò æ L 6 | ° d

é . Do not place the capacitor a PC board whose hole space differs from the specified lead space.

(v} PCBP h m ¨ ‘ Ð PCBP Ä E 0(v ö o - 6 æ , - ± ¶ Ÿ V ý ! (v 0 PCBP Ï â e , (v ä ö n z g ‡ ˜ E * — E *(v d

ê . Avoid any compressive, tensile or flexural stress. ¥ G å Š B õ Ü ó æ o l d

ë . Please consult us first if you wish to embed the capacitor in plastic resins.

}(v h) û î N ø ¨ ë ¹ • † 8 A - ‘ • ì T d

ì . Do not move the capacitor after it has been soldered to the board.

Ï PCBP (v â ¶ O - N g Ü ‡ ˜ O À Ü d

í . Do not pick up the PC board by the soldered capacitor.

â ¶ Ï PCBP (Ü P ” Ü ¶ Ÿ E *(Ï ä g ß E E d

14. Voltage proof test guide (: B Ë ´ ä

A. Correct Method

þ ò º ¥

Operate explain: ´ \

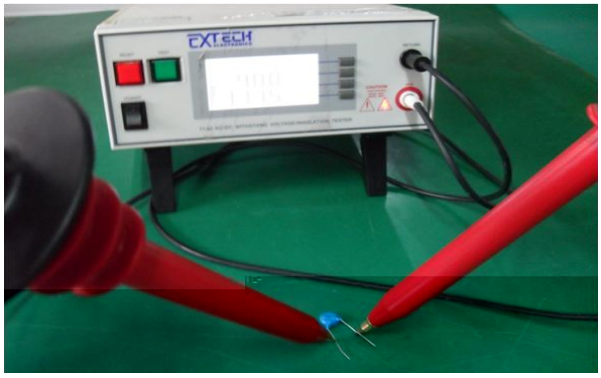
Ô. Set up test voltage , current and time in high voltage instrument. • G • B ® Ë (B (Ë ¨ · d

Õ. The two pins of capacitor are nipped in fixture of high voltage instrument. Ü (f ä ö £ : B Û { j £ n h ° ä ö 0 £ n ˆ … d

Ö. Give the start button a slight press and the capacitor changed and tested, high voltage instrument sto p output when the time arrived. • s N Æ (B Û { ( ) û : B Ë Ë ¨ · û N ¨ • B ® ‘ N - n (B Û { d

B. Error Method

Ð b º ¥



Operate explain: M í

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

Û (Ë _ à ˆ (f ä ö) û Ë d

YØ

17.Normative reference s ñ

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

(• • • … G (v 1 æ Ó ¹ Ÿ ³

Õ. IEC 60384-14 3 p 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

(• • • … G (v 14 æ Ó Ó Ÿ ³ ½ % (¨ $ ä (W U … G (v

Ö. 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

(• ! 6 , e ¢ ¬ r 2 æ Ó ¬ r º ¥ 2 ! ì o Ë r

×. GB/T 2693-2001 (IDT IEC 60384-1 ! 1999) Fixed capacitors for use in electronic equipment - Part 1: Generic specification

(• • • … G (v 1 æ Ó ¹ Ÿ ³

Ø. 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

™ ô n , ¿ r Q 1 æ Ó Ó « (AQL) ¿ L O ¿ r n , ™ #

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

(¥ v ä (v • ô ,

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

(¥ v ä (v ³ Ý ò

Û. SJ/T 11363-2006 ! Requirements for concentration limits for certain hazardous substances in electronic information products

(• ð o ! 6 /] ½ ^) « h ' Ð

Ü. SJ/T 11364-2006! Marking for control of polluti on caused by electronic information products

(• ð o ! 6 J ù Å % ³ - ' Ð

Ý. SJ/T 11365-2006! Testing methods for hazardous substances in electronic information products

(• ð o ! 6 /] ½ ^) ¿ º ¥

Þ. 2011/65/EU! (RoHS2.0) The Restriction of the use of certain Hazardous substances i n Electrical and Electronic Equipment

(• (w • • / « % ° v Ô ½ ^) —

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

Ì X (• (w • • —

à. 94/62/EC 2005/20/EC Europe Parliament and Council Directive94/62/EC of 20 December 1994 on Packaging and packaging waste

' g m ä g m Ì ^ 1994 - 12 e 20 Ø = Ð V ä 8 ¹ V — 94/62/EC

á. No1907/2006(REACH) Registration,Evaluation,AuthorizationandRestrictionof Chemicals(151item)

$ 0 6 _ c ? y c ¶ ä « %