

specification for approval

COMER _____

COMER P N _____

RX P N _____

MODEL NO

Y1

	RoH	REACH	Halogen
	■	■	■

prepare	checked and confirmed
check	signed by _____ please attach one copy
approve	



TRX 特锐祥

H UAN ER X IANG E L E C T R I C A L T E C H N O L O G Y I N T E R N A T I O N A L C O R P O R A T I O N L I M I T E D

HENZHEN ER X IANG E L E C T R I C A L T E C H N O L O G Y I N T E R N A T I O N A L C O R P O R A T I O N L I M I T E D

www.trxc.net

Add sc

1

Add sz

91

503

Tel +86-816-61670387/+86-755-27892117

Fax +86-816-6167076/+86-755-27893019



Y
Y a c c e r a c c a p a c o r s

N b e r

RX 3 77

s s e

Ma e r a n a e	Y1	RX P N			
Mode NO	Y1	Da a n b e r	RD2 6 22	Da e	2 2 6 3

e	Da e	Ed on	Reason	Re ar s
1	2 14 12 8	New Vers on	More de a ed con en	
2				
3				
4				
5				

Mod fy		chec		approve	
--------	--	------	--	---------	--



H AN ER X ANG E HNOLOGY N ERNA ONAL O L D

TRX 特锐祥

HENZHEN ER X ANG ELE RON O L D

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 Add sz 91 503
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 Fax +86-816-6167076/+86-755-27893019



Y
Y a c c e r a c c a p a c o r s

N b e r	RX 3 77	D a e	2 14 12 25
s s e		P a g e	Page 3 of 24

a a c h e d s h e e

Recogn zed spec f ca ons

ODE	OMER P N	RX P N	MODEL NO	REMAR
1				
2				
3				
4				
5				
6				
7				
8				
9				
1				
11				
12				
13				
14				
15				
16				
17				
18				
19				
2				

Y

1 V

1 Hz

Abo Y A c e r a c c f x e d c a p a c o r a c n o w e d g e e n s p e c f c a o n s d e s c r p o n :

Yl a c c e r a c c a p a c o r s a r e s e d n e e c r c a a n d e e c r o n c e q p e n a n d c o n n e c t e d a n a c a n w h n o n a v o a g e n o e x c e e d n g 1 v a c a n d w h a n o n a f r e q e n c y n o e x c e e d n g 1 H z

A E L O F O N E N

1	Name Description	7 8
2	rated size	9
3	product source	1
4	product range	1
5	performance	11 16
6	operating characteristics	16
7	casing type	17
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11	storage conditions	19
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16	capacitor connection sense	23
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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 characteristics Y5P Y5 Y5V

Nominal capacity

Y5P capacity PF											
ODE	1 1	151	221	271	331	391	471	561	681	821	1 2
Nominal capacity	1	15	22	27	33	39	47	56	68	82	1
Y5 capacity PF											
ODE	471	1 2	152	222	272	332	392	472			
Nominal capacity	47	1	15	22	27	33	39	47			
Y5V capacity PF											
ODE	471	1 2	152	222	272	332	392	472			
Nominal capacity	47	1	15	22	27	33	39	47			

capacity of allowable error

	Y5P	Y5	Y5V
Percentage error	±	±	±
	1	2	2

Med d a e e r

Y5P												± 1	
	1 1	151	221	271	331	391	471	561	681	821	1 2		
	6 5	6 5	6 5	6 5	7 5	8 5	8 5	9 5	9 5	1	11		
Y5												± 1	
	471	1 2	152	222	272	332	392	472					
	6 5	7 5	9	11	12	12	13	15					
Y5V												± 1	
	471	1 2	152	222	272	332	392	472					
	6 5	6 5	7 5	8 5	9	1	11	11					

P c h ± 8

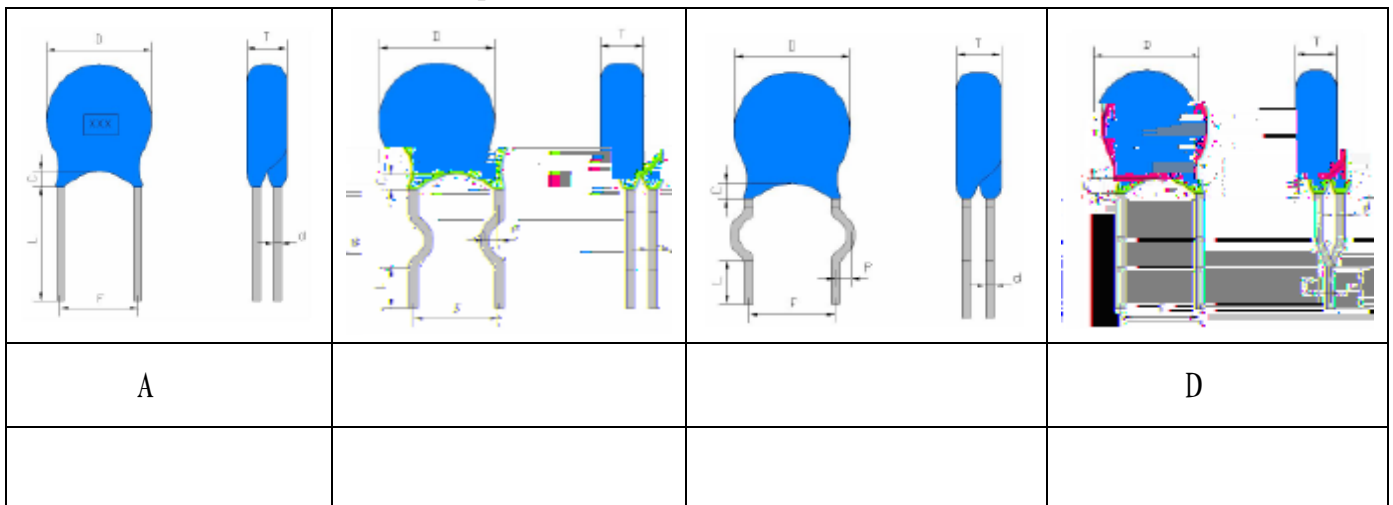
Y1 Y2 1 7 5 Y1 1 Y2 7 5 。

Fee Long

$L \leq 28$

28 28 28 2 8

P n shape



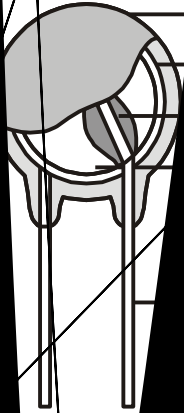
!

Var o s code e n o n e d a b o v e f o r t h e c o m p a n y s t a n d a r d a p p l i c a t i o n !

Y
Y a c c e r a c c a p a c o r s

N ber RX 3 77 Date 2 14 12 25
ss e Page Page 1 of 24

c s c a n a o c a s r c r e



NO	cons en	a e r a
	o a n g	Epoxy
	e r a c e d	e r a c
	o d e r	o d e r n g
	E e c r o d e	v e r o x d e
	L e a d i n g	P w r e

o d c a r n g

Y 02K 1

Exa e

Exp a n

g s e r e d b r a n d
y r e n c e Y
c o r c Y 5 P E V
c a p a c o r d e a s s
N o p a c y
a p a r a n c e

Q



ENE

VDE



f c a n o n a r

5 V 5 VA

o f a n g e

E 41

	Y Y a c c e r a c c a p a c o r s			
	N b e r	RX 3 77	D a e	2 14 12 25
	s s e		P a g e	P a g e 11 of 24

5 P e r f o r m a n c e e s

NO	e	
----	---	--

	Y Y a c c e r a c c a p a c o r s			
	N b e r	RX 3 77	D a e	2 14 12 25
	s s e		P a g e	P a g e 12 of 24

o n n e d

NO	e	Perfor ance	
----	---	-------------	--

o n n e d

NO	e	Perfor ance		eas r ng e hod
12	4 6 Rap d change of e pera re	v s a exa na on	No v s b e da age	pper ca egory e pera re 125 ± 3°C ower ca egory e pera re 25 ± 3°C n ber of cyc es : 5 d ra on of expos re a he e pera re s 3 n es 3 apac or sha be p aced a 25 ± 3 °C for 24 ± 2h before n a eas re en s 25 ± 3°C 24 ± 2
		vo age proof	accorder 4 2 1 4 2 1	
		apac ance	Y5P: ±1 Y5 : ±2 Y5V: ±2	
		d ss pa on fac or	Y5P: ≤ 2 5 Y5 : ≤ 2 5 Y5V: ≤ 2 5	
		ns a on res s ance	accorder 4 2 5	
13	4 7 V bra on	apac or sha no v s b e da age		Freq ency rangs: 1 → 55 → 1 Hz sw ng: 75 he o a d ra on sha be 6 ho rs 6 d ra on of expos re a X Y Z 2ho rs X Y Z 2
14	4 12 Da p hea s eady s a e	v s a exa na o n	No v s b e da age	es e pera re: 4 ± 2°C h d y: 95 ± 3 RH d ra on: 5 24 ho rs vo age: 5 VA _R for one ha f of he sa p es R 5 V capac or sha be p aced a 25 ± 3°C for 24 ± 2ho rs before eas re en s 25 ± 3°C 24 ± 2
		apac anc e	Δ = x Δ: ± 15	
		vo age proof	accorder 4 2 1	
		ns a on res s an ce	≥ 3 M Δ = R _x R R Δ > 5	

o n n e d

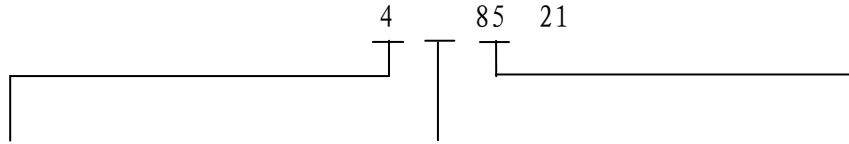
NO	e	Perfor ance	eas r ng e hod
15	4 13 p e s e v o a g e	<p>No per anen brea down or f ashover d r ng he es per od</p> <p>f any hree s ccess ve p ses are shown by he osc oscope on or o havehadawavefor nd ca ng ha nose f hea ngbrea dow ns or f ashovers have a en p ace n he capac or hen no f r her p ses sha be app ed and he capac or sha beco n ed as confor ng</p> <p>f a 24 p ses have been app ed o he capac or and 3 or ore of he are of a wavefor nd ca ng ha no se f hea ng brea downs or f ashovers have occ rred hen he capac or sha be co n ed as confor ng</p> <p>24</p> <p>3</p> <p>.</p> <p>f ess han hree p ses are of hereq redavefor h en he capac or sha be co n ed as a nonconfor ng e</p> <p>.</p>	<p>Pea p se vo age: 8 V</p> <p>p ses d s ance : 1 seconds</p> <p>p ses es: 24</p>

o n n e d

NO	e	Perfor ance		eas r ng e hod															
16	4 14 End rance	v s a exa na o n	Nov s b eda age	es e pera re: 125 ± 3°C D ra on: 1 24 ho rs es vo age: 85 VA 1 7 R excep ha once every ho r he vo age sha be ncreased o 1 v r s for ls 85 VA R 1 V ls. Each of hese vo age sha be app ed o each capac or nd v d a y hro gh a res s or of 47 ± 5 47 ± 5 apac or sha be p aced a 25 ± 3°C for 24 ± 2ho rs before eas re en s 25 ± 3°C 24 ± 2															
		apac anc e	Δ = x Δ: ± 2																
		vo age proof	accorder 4 2 1																
		ns a on res s ance	≥ 3 M Δ = R _x R R Δ > 5																
17	4 15 harge and D scharge	apac ance	Δ = x Δ: ± 2	harge vo age: 7 7VA √2 R n ber of cyc es: 1 he ra e of approx a e y: one opera on per second Each cyc e sha cons s of charg ng and d scharg ng he capac or Each capac or sha be nd v d a y charged by app y ng he es vo age hro gh a res s or w h he va e $R = \frac{220 \cdot 10^{-6}}{C_R} \Omega$ apac or sha be p aced a 25 ± 3°C for 24 ± 2ho rs before eas re en s 25 ± 3°C 24 ± 2															
		ns a on res s ance	≥ 3 M Δ = R _x R R Δ > 5																
18	4 17 Pass ve f a ab y	ca egor y he b rn ng e of any spec en sha no exceed he e spec f ed rn ng drop e s or g ow ng par s fa ng down sha no gn e he ss e paper		ca egor y <table border="1" data-bbox="901 1738 1519 2145"> <thead> <tr> <th data-bbox="901 1738 1129 1877">vo e ranges</th> <th data-bbox="1129 1738 1238 1877">f a e e</th> <th data-bbox="1238 1738 1519 1877">Max b rn ng e</th> </tr> </thead> <tbody> <tr> <td data-bbox="901 1877 1129 1912">V < 25³</td> <td data-bbox="1129 1877 1238 1912">5</td> <td data-bbox="1238 1877 1519 1912">≤ 3</td> </tr> <tr> <td data-bbox="901 1912 1129 1948">25 < V ≤ 5³</td> <td data-bbox="1129 1912 1238 1948">1</td> <td data-bbox="1238 1912 1519 1948">≤ 3</td> </tr> <tr> <td data-bbox="901 1948 1129 1984">5 < V ≤ 175³</td> <td data-bbox="1129 1948 1238 1984">2</td> <td data-bbox="1238 1948 1519 1984">≤ 3</td> </tr> <tr> <td data-bbox="901 1984 1129 2145">V > 175³</td> <td data-bbox="1129 1984 1238 2145">3</td> <td data-bbox="1238 1984 1519 2145">≤ 3</td> </tr> </tbody> </table>	vo e ranges	f a e e	Max b rn ng e	V < 25 ³	5	≤ 3	25 < V ≤ 5 ³	1	≤ 3	5 < V ≤ 175 ³	2	≤ 3	V > 175 ³	3	≤ 3
vo e ranges	f a e e	Max b rn ng e																	
V < 25 ³	5	≤ 3																	
25 < V ≤ 5 ³	1	≤ 3																	
5 < V ≤ 175 ³	2	≤ 3																	
V > 175 ³	3	≤ 3																	

7 a c c a e g o r y

Accord ng o E A ANDARD R 198
R 198



a e g o r y e p e r a r e o w e r n d a y s u p p e r c a e g o r y e p e r a r e e a d y s a e d a p h e a s e

1s E

2nd E

3rd E

1s E M n a b e n e p e r a r e o f o p e r a o n o d e s

2nd E M a x a b e n e p e r a r e o f o p e r a o n D r y h e a s e s

3rd E N b e r o f d a y s D a p h e a s e a d y s a e e s






a e g o r y E x a p e s a c c o r d n g o E 6 6 8 1 E 6 6 8 1	
25 85 4	
25 85 21	
4 85 21	
55 125 21	
55 125 56	

F r s e w o d g s d e n o n g h e n a b e n e p e r a r e o f o p e r a o n o d e s	
65	65°C
55	55°C
4	4 °C
25	25°C
1	1 °C
	°C
5	5°C

e c o n d s e h r e e d g s d e n o n g h e a x a b e n e p e r a r e o f o p e r a o n D r y h e a s e s	
155	155°C
125	125°C
11	11 °C
85	85°C
8	8 °C
75	75°C
7	7 °C

h r d s e w o d g s d e n o n g h e n b e r o f d a y s D a p h e a s e a d y s a e e s	
56	56 days
21	21 days
1	1 days
4	4 days
	h e c o p o n e n s n o r e q r e d o b e e x p o s e d o d a p h e a

8

NO	ORIGIN	STANDARD NO	LA TYPE W V P F	FILE NO	MAR
1	GERMANY EUROPE	VDE DIN EN 6384-14 VDE 565 e 11: 264 EN6384-14:258 EN 6384-14 ed 3	Y1 Y A4 V 25 125 21	4 31733	 
2	A A	L L L 6384-14 21 A E6 384-14 : 9	Y1 Y A4 5 V 25 125 21	E315719	
3	HNA	Q EN 6384-14:25	Y1 Y A5 V 25 125 21	Q 14 11 7432	
4	OREA	6384-14 215 9 6384-1 215 9	Y1 Y A5 V 25 125 21	H 3 34 17 1A	

9 Requirements for concentration of substances for certain hazardous substances

RoHS 2 2011/65/E

harmonized

REACH No19 726


**RoHS H.F.
REACH**

Substances	concentration in : pp
Lead and lead compounds	<1
Lead and lead compounds	<1
Mercury and mercury compounds	<1
Hexavalent chromium compounds	<1
Polybrominated biphenyls (PBB)	<1
Polybrominated diphenyl ethers (PBDE)	<1
total Pb Hg 6 packaging materials	<1
	<9
Cr	<9
Cd	<15
VH 155 e REACH 155	<1

1 M a n u f a c t u r i n g d a t e c o d e s
R X

code of year				code of month		code of day			
year	code	year	code	month	code	day	code	day	code
		2 2	M	1	1	1	1	16	16
		2 21	N	2	2	2	2	17	17
2 1	A	2 22	P	3	3	3	3	18	18
2 11		2 23	R	4	4	4	4	19	19
2 12		2 24		5	5	5	5	2	2
2 13	D	2 25		6	6	6	6	21	21
2 14	E	2 26		7	7	7	7	22	22
2 15	F	2 27	V	8	8	8	8	23	23
2 16	H	2 28	W	9	9	9	9	24	24
2 17		2 29	X	1	1	1	1	25	25
2 18				11	11	11	11	26	26
2 19	L			12	12	12	12	27	27
						13	13	28	28
						14	14	29	29
						15	15	3	3
								31	31

Note: The year code repeats once every 2 years for a one week period

2

11 Storage conditions

The capacitors are not stored in a corrosive atmosphere where sulphide or chloro-de gas acids or salts are present. Exposure of the components to moisture should be avoided.

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

3

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

■ Storage temperature: 25 to 4 °C

25 to 4 °C

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

8

■ Maximum draught: 12 m/s

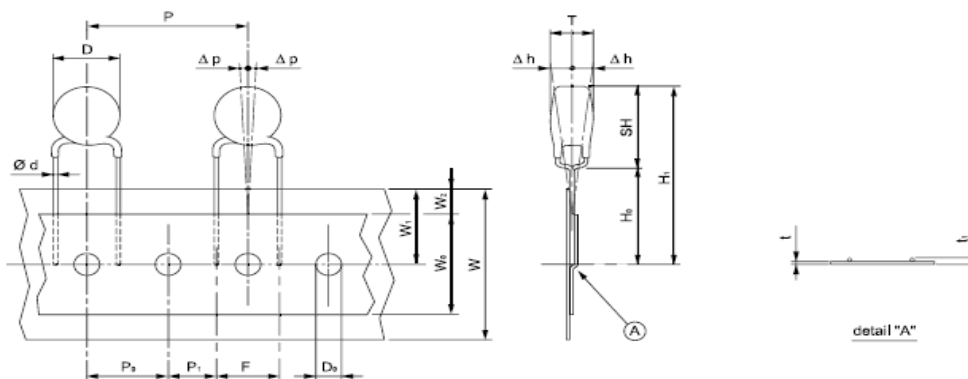
12

12 Pac ng
A: b

D M E N O N	Lead e n g h	a g
D < 8	≤ 1	1 P
	> 1	5 P
D ≥ 8	5 P	

: A P E 1 P O X

a p a c o r s o n a p e y p e p c h 7 5 1



Para e e r	y b o	a p n g p e c f c a o n s		
		n :		
		P c h 7 5	P c h 1	o e r a n c e
ead d a e e r	d	55	55	± 1
p c h b e w e e n c a p a c o r s	p	12 7	25 4	± 1
feed h o e p c h	P	12 7	12 7	± 3
feed h o e c e n t r e o e a d c e n t r e	P ₁	8 9 5	7 6 2	± 7
ead s p a c n g	F	7 5	1	± 1
c o p o n e n a g n e n	h			± 3
d e v a o n a o n g a p e e f o r r g h	p			± 1 3
a p e w d h	w	18	18	± 5
h o d d o w n a p e w d h	W	12	12	
h o e p o s o n	W ₁	9	9	± 5
h o d d o w n a p e p o s o n	W ₂	3	3	
s e a e d h e g h o a p e c e n t r e	H	2	2	± 1
a x c o p o n e n h e g h	H ₁	37	37	
feed h o e d a e e r	D	4	4	± 2
o a a p e h c n e s s		5	5	± 2
a x h c n e s s o f a p e a n d w r e s	1	1	1	

13 a s s e s s m e n t a n d w a r n i n g s

A t t e n t i o n s d r a w n o n t h e f a c t h a t r e p e t i t i o n o f t h e v o l t a g e p r o o f t e s t b y t h e s e r v i c e t e c h n i c i a n s m a y d a m a g e t h e c a p a c i t o r .

D o n o t p l a c e t h e c a p a c i t o r o n a P C B b o a r d w h o s e h o l d e r s p a c e d i f f e r s f r o m t h e s p e c i f i e d h o l d e r s p a c e .

A v o i d a n y c o m p r e s s i v e f o r c e s o r f e x t r a s t r e s s .
P l e a s e c o n s i d e r s u f f e r i n g f o r y o u r w o r k s h o p b e d t h e c a p a c i t o r i n p a s s i v e c o n d i t i o n s .

D o n o t o v e r t a c h t h e c a p a c i t o r a f t e r i t h a s b e e n s o l d e r e d o n t h e b o a r d .

D o n o t p e r c u t t h e P C B b o a r d b y t h e s o l d e r e d c a p a c i t o r .

14 V o l t a g e p r o o f t e s t i n g m e t h o d

A p p r o p r i a t e M e t h o d



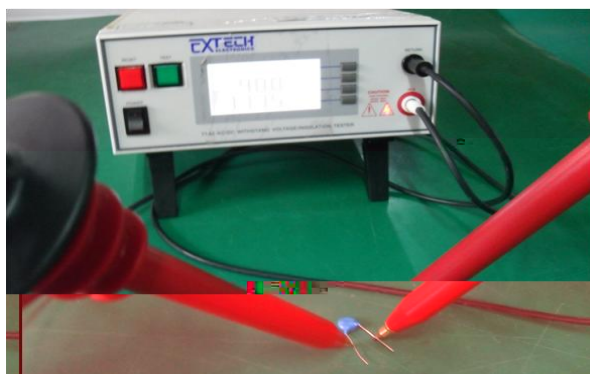
Opera e exp a n:

U s e t h e p r o b e s v o l t a g e c u r r e n t a n d t h e n h i g h v o l t a g e n e e d e d .

T h e w o r k s o f c a p a c i t o r a r e n o t p e r f o r m e d i n f i x t u r e o f h i g h v o l t a g e n e e d e d .

G i v e t h e s e a r b o n a s s i g n p r e s s a n d t h e c a p a c i t o r c h a n g e d a n d e s e d h i g h v o l t a g e n e e d e d s o p o p w h e n t h e e a r r i v e d .

Error Me hod



Opera e exp a n:

T h e c a p a c i t o r w a s e s t i m a t e d w i t h h i g h v o l t a g e e s t i m a t e p r o b e f o r e c r e f e r e n c e s o t h a t t h e w o r k s o f c a p a c i t o r .

16 genera now edge for cera c apac ors

for capac ance and D ss pa on fac or an :

he capac or s es ed af er be c a ped w h he es oo can' a e he capac or' s no enon for es w h hand apac ance and d ss pa on fac or are no exac beca se of e pera re n hand and es res s no r gh

he capac or' s capac ance and D ss pa on fac or af er vo age es ed ay no es before he capac or s s ored for 24 ho rs af er vo age es he capac or s be d scharge be ween eads before es or e se vo age of re a nder a a n es appara s 24

for Vo age proof:

harge o capac or af er A or D Vo age va e e and c rren are se ed n es appara s c a p ng capac or' s ead w h c a p for es appara s o p pace be ween c a ps for es appara s o p s ee s andard or e se f ashover w be happened be ween wo eads f space s oo s a apac or' s conf g ra on was be des royed f grea c rren w be happened n capac or for o en

17 Normative references

E 6 384 1 2 8 Fixed capacitors for semiconductor equipment Part 1: General specification
1

E 6 384 14 3rd 2 5 Fixed capacitors for semiconductor equipment Part 14: Electrostatic specification Fixed capacitors for electrolytic capacitor reference suppression and connection of the supply lines

14

G 5169 5 1997 D E 6 695 2 2:1991 Fire hazard testing for electronic products Part 2: Test methods Section 2: Need for failures

2

2

G 2693 2 1 D E 6 384 1 1999 Fixed capacitors for semiconductor equipment Part 1: General specification

1

(5) G 2828 1 2 3 D 0 2859 1:1999 Sampling procedures for inspection by attributes Part 1: Sampling schemes indexed by acceptance quality AQL for lot inspection

1

AQL

(6) G 2471 1995 D E 63:1963 Preferred number series for resistors and capacitors

G 2691 1994 D E 62:1992 Marking codes for resistors and capacitors

11363 2 6 Requirements for concentration tests for certain hazardous substances in electronic information products

11364 2 6 Marking for control of pollution caused by electronic information products

11365 2 6 Testing methods for hazardous substances in electronic information products

2 11 65 E RoHS 2 The Restriction of the use of certain Hazardous substances in Electronic Equipment and Electronic Equipment

2 2 96 E WEEE Waste Electrical and Electronic Equipment

94 62 E 2 5 2 E Europe Part A and Annex D received 94 62 E of 2 December 1994 on Packaging and packaging waste

1994 12 2

94 62 E

No 19 7 2 6 REAH Regulation on Evaluation Authorization and Restriction of Chemicals 151 e