

Thyristor Surge Suppressors - TO-92

Description

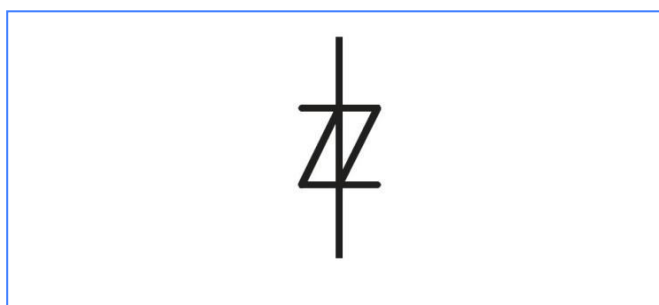
PxxxxE series thyristors are a type of semi—conduct component. They are designed to protect baseband equipment from damaging overvoltage transients. such as modems, telephones, line cards, answering machines, FAX machines, T1/E1, xDSL and more.



Features

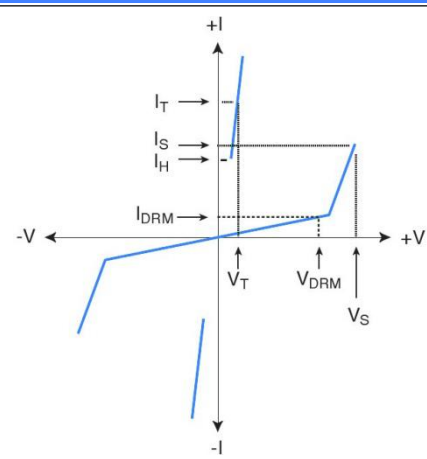
- Excellent capability of absorbing transient surge
- Quick response to surge voltage (ns Level)
- Eliminates overvoltage caused by fast rising transients
- Moisture sensitivity level: Level 1
- Fails short circuit when surged in excess of ratings
- Non degenerative

Device Symbol



Typical Applications

Parameter	Definition
V_{DRM}	Peak Off-state Voltage – maximum voltage that can be applied while maintaining off state
V_S	Switching Voltage – maximum voltage prior to switching to on state
V_T	On-state Voltage – maximum voltage measured at rated on-state current
I_{DRM}	Leakage Current – maximum peak off-state current measured at V_{DRM}
I_S	Switching Current – maximum current required to switch to on state
I_T	On-state Current – maximum rated continuous on-state current
I_H	Holding Current – minimum current required to maintain on state
C_o	Off-state Capacitance – typical capacitance measured in off state
I_{PP}	Peak Pulse Current – maximum rated peak impulse current



Thermal Consideration

Parameter	Symbol	Value	Unit
Operating Temperature	T_J	-40 to +150	°C
Storage Temperature	T_{STG}	-40 to +150	°C
Junction to free air thermal resistance	$R_{\theta JA}$	90	W/°C

Summary Electrical Characteristics, T a = 25 ° C (Unless Otherwise Noted)

Parameter Description		I _{DRM} @V _{DRM}		V _s ①@I _s		V _T @ I _T		I _H	C _o ②		
									A	B	C
Unit		μA	V	V	mA	V	A	mA	pF		
Type	ENV	max	min	max	max	max	max	min	max		
P0080E	L	5	6	25	800	4	2.2	50	80	130	130
P0220E	L	5	18	30	800	4	2.2	50	60	120	120
P0300E	L	5	25	40	800	4	2.2	50	60	120	100
P0640E	L	5	58	77	800	4	2.2	150	50	80	200
P0720E	L	5	66	87	800	4	2.2	150	50	75	150
P0900E	L	5	75	98	800	4	2.2	150	50	70	140
P1100E	L	5	90	130	800	4	2.2	150	45	70	110
P1300E	L	5	120	160	800	4	2.2	150	45	60	100
P1500E	L	5	140	180	800	4	2.2	150	45	55	90
P1800E	L	5	170	220	800	4	2.2	150	35	50	90
P2300E	L	5	190	260	800	4	2.2	150	35	50	80
P2600E	L	5	220	300	800	4	2.2	150	35	45	80
P3100E	L	5	275	350	800	4	2.2	150	35	45	75
P3500E	L	5	320	400	800	4	2.2	150	35	40	60

For individual "EA" "EB" "EC" Surge ratings, see table above

L : Lead-free

①V_s is measured at 100KV/s

②Off-state capacitance is measured in VDC=2V, VRMS=1V, f=1MHz

Surge Ratings

Series	I _{pp} 2/10μS Amps	I _{pp} 8/20μS Amps	I _{pp} 10/160μS Amps	I _{pp} 10/560μS Amps	I _{pp} 10/1000μS Amps	I _{TSM} 60HZ Amps	Di/Dt Amps /μS
A	150	150	90	50	45	20	500
B	250	250	150	100	80	30	500
C	500	400	200	150	100	50	500

Rating & Characteristic Curves

Figure 1- Reflow Soldering

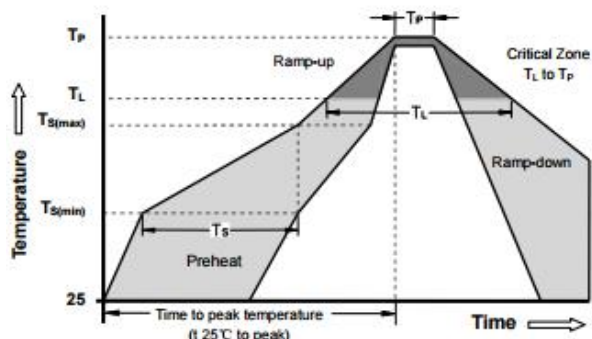


Figure 2- PEAK PULSE CURVE

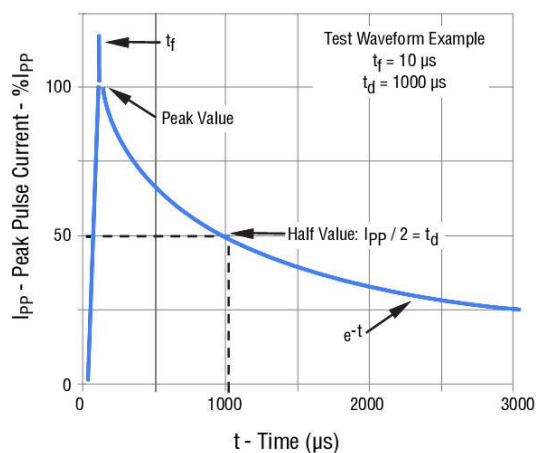


Figure 3-Normalized DC Holding Current versus Case Temperature

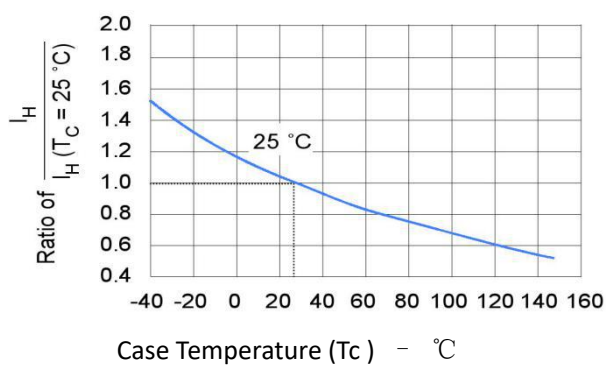
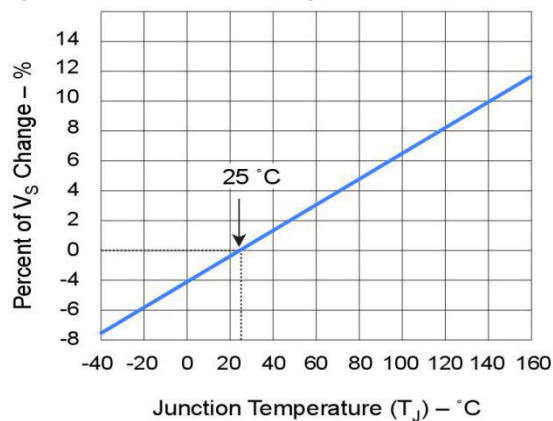
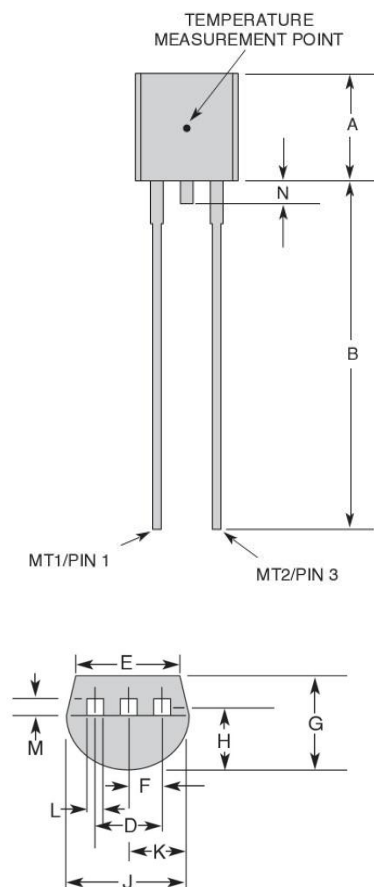


Figure 4-Normalized vs change versus Junction Temp



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.
A	0.176	0.196	4.47	4.98
B	0.500	-	12.70	-
D	0.095	0.105	2.41	2.67
E	0.150	-	3.81	-
F	0.046	0.054	1.16	1.37
G	0.135	0.145	3.43	3.68
H	0.088	0.096	2.23	2.44
J	0.176	0.186	4.47	4.73
K	0.088	0.096	2.23	2.44
L	0.013	0.019	0.33	0.48
M	0.013	0.017	0.33	0.43
N	-	0.060	-	1.52

The TO-92 is designed to meet mechanical standards as set forth in JEDEC publication number 95.

Disclaimer

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.