PXXX0LB

Description



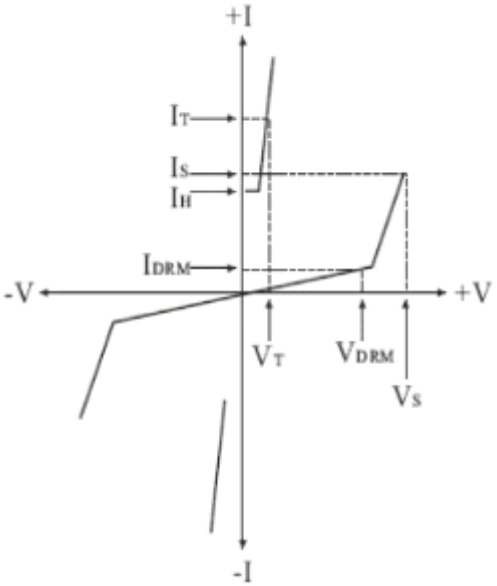
- Thyristor solid state protection thyristor protect telecommunications equipment such as modems, line cards, fax machines, and other CPE.
- P Series devices are used to enable equipment to meet various regulatory requirements including GR 1089, ITU K.20, K.21 and K.45, IEC 60950, and TIA-968 (formerly known as FCC Part 68)..

Compared to surge suppression using other technologies, P Series devices offer absolute surge protection regardless of the surge current available and the rate of applied voltage (dv/dt). P Series devices:

- Cannot be damaged by voltage
- Eliminate hysteresis and heat dissipation typically found with clamping devices
- Eliminate voltage overshoot caused by fast-rising transients
- Are non-degenerative
- Will not fatigue
- Have low capacitance, making them ideal for high-speed transmission equipment

Electrical Parameters

Parameter	Definition
C_O	Off-state Capacitance — typical capacitance measured in off state
di/dt	Rate of Rise of Current — maximum rated value of the acceptable rate of rise in current over time
I_S	Switching Current — maximum current required to switch to on state
I_{DRM}	Leakage Current — maximum peak off-state current measured at V_{DRM}
I_H	Holding Current — minimum current required to maintain on state
I_{PP}	Peak Pulse Current — maximum rated peak impulse current
I_T	On-state Current — maximum rated continuous on-state current
I_{TSM}	Peak One-cycle Surge Current — maximum rated one-cycle AC current
V_S	Switching Voltage — maximum voltage prior to switching to on state
V_{DRM}	Peak Off-state Voltage — maximum voltage that can be applied while maintaining off state
V_F	On-state Forward Voltage — maximum forward voltage measured at rated on-state current
V_T	On-state Voltage — maximum voltage measured at rated on-state current



Electrical Characteristics

Part Number*	V_{DRM} Volts	V_S Volts	V_T Volts	I_{DRM} µAmps	I_S mAmps	I_T Amps	I_H mAmps	C_O pF
P0080LB	6	25	4	5	800	2.2	50	85
P0300LB	25	40	4	5	800	2.2	50	85
P0640LB	58	77	4	5	800	2.2	150	60
P0720LB	65	88	4	5	800	2.2	150	60
P0900LB	75	88	4	5	800	2.2	150	55
P1100LB	90	130	4	5	800	2.2	150	55
P1300LB	120	160	4	5	800	2.2	150	55
P1500LB	140	180	4	5	800	2.2	150	60
P1800LB	170	220	4	5	800	2.2	150	60
P2000LB	180	220	4	5	800	2.2	150	60
P2300LB	190	260	4	5	800	2.2	150	55
P2600LB	220	300	4	5	800	2.2	150	50
P3100LB	275	350	4	5	800	2.2	150	45
P3500LB	320	400	4	5	800	2.2	150	40
P4000LB	360	460	4	5	800	2.2	150	40
P4500LB	400	540	4	5	800	2.2	150	40
P5000LB	440	600	4	5	800	2.2	150	40

* For surge ratings, see table below.

Notes:

• All measurements are made at an ambient temperature of 25℃. IPP applies to -40℃ through +85℃ temperature range.

• Off-state capacitance (C_O) is measured at 1 MHz with a 2 V bias and is typical value.

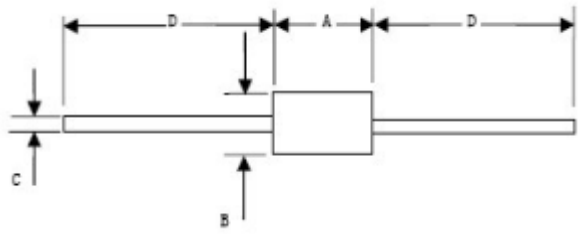
Surge Ratings

Series	I_{PP} 2x10 µs	I_{PP} 8x20µs	I_{PP} 10x160µs	I_{PP} 10x560µs	I_{PP} 10x1000µs	I_{TSM} 60 Hz	di/dt
	Amps	Amps	Amps	Amps	Amps	Amps	Amps/µs
B	250	250	150	100	80	30	500

Thermal Considerations

Package TO-92	Symbol	Parameter	Value	Unit
	TJ	Operating Junction Temperature	-40 to +150	℃
	TS	Storage Temperature Range	-40 to +150	℃
	RθJA	unction to Ambient on printed circuit	90	℃/W

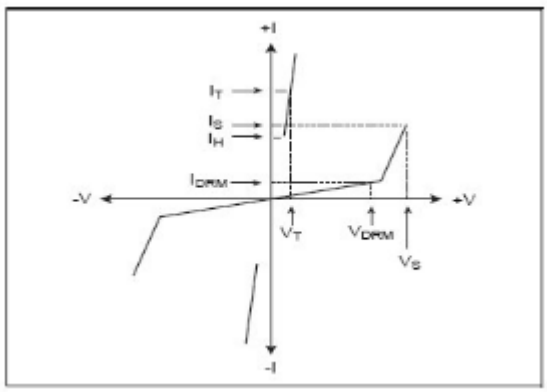
Dimensions



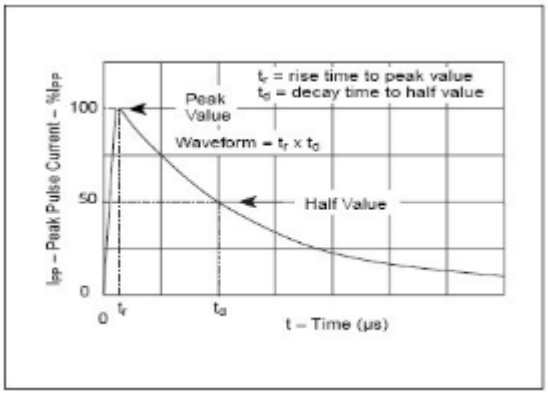
Dimension	Inches		Millimeters		NOTE
	MIN	MAX	MIN	MAX	
A	0.230	0.300	5.80	7.60	
B	0.104	0.140	2.60	3.60	Φ
C	0.026	0.034	0.70	0.90	Φ
D	1.000		25.40		

Over-voltage Protection Thyristor PXXX0LB ROHS

V-I Characteristics

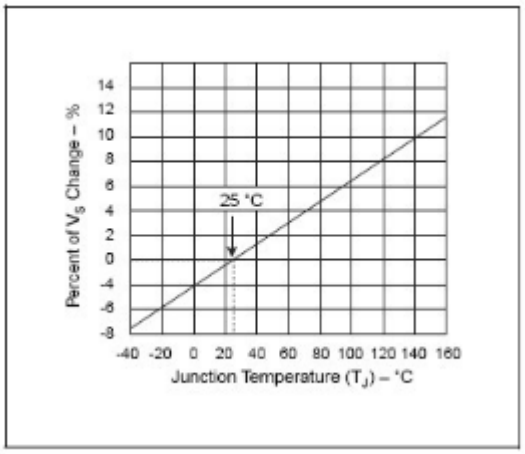


tr x td Pulse Wave-form



Thermal Derating Curves

Normalized VS Change versus Junction Temperature



Normalized DC Holding Current versus Case Temperature

