

## 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)..

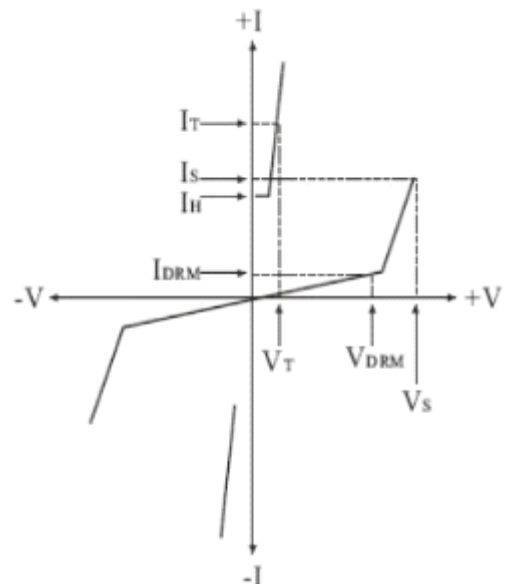


Compared to surge suppression using other technologies, P Series devices offer absolute surge protection regardless of the surge current available and the rate of applied voltage (dv/dt). P Series devices:

- 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
$d_i/d_t$	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 <sub>DRM</sub> Volts	V <sub>S</sub> Volts	V <sub>T</sub> Volts	I <sub>DRM</sub> μAmps	I <sub>S</sub> mAmps	I <sub>T</sub> Amps	I <sub>H</sub> mAmps	C <sub>O</sub> 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°C. IPP applies to -40°C through +85°C temperature range.
- Off-state capacitance (C<sub>O</sub>) is measured at 1 MHz with a 2 V bias and is typical value.

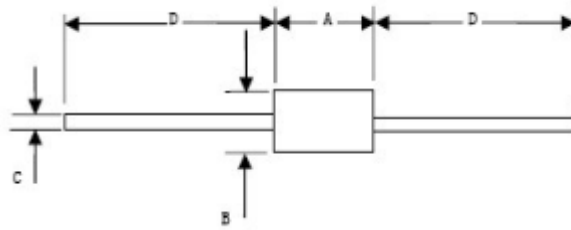
### Surge Ratings

Series	I <sub>PP</sub> 2x10 μs	I <sub>PP</sub> 8x20 μs	I <sub>PP</sub> 10x160 μs	I <sub>PP</sub> 10x560 μs	I <sub>PP</sub> 10x1000 μs	I <sub>TSM</sub> 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
	T <sub>J</sub>	Operating Junction Temperature	-40 to +150	°C
	T <sub>S</sub>	Storage Temperature Range	-40 to +150	°C
	R <sub>θJA</sub>	Junction to Ambient on printed circuit	90	°C/W

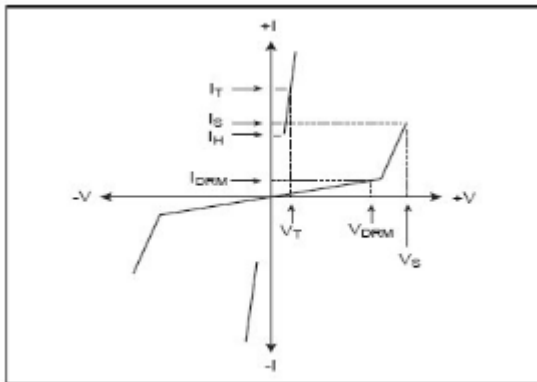
**Dimensions**



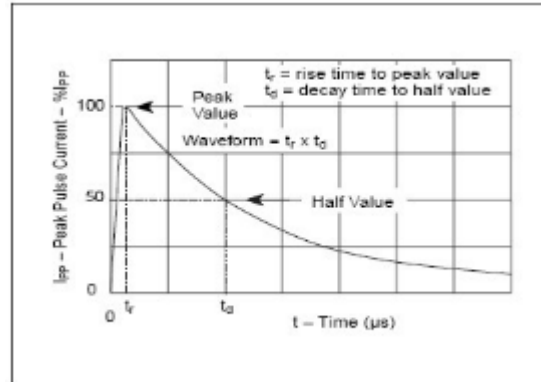
Dimension	Inches		Millimeters		NOTE
	MIN	MAX	MIN	MAX	
A	0.230	0.300	5.80	7.60	
B	0.104	0.140	2.60	3.60	Φ
C	0.026	0.034	0.70	0.90	Φ
D	1.000		25.40		

**Over-voltage Protection Thyristor PXXX0LB ROHS**

**V-I Characteristics**

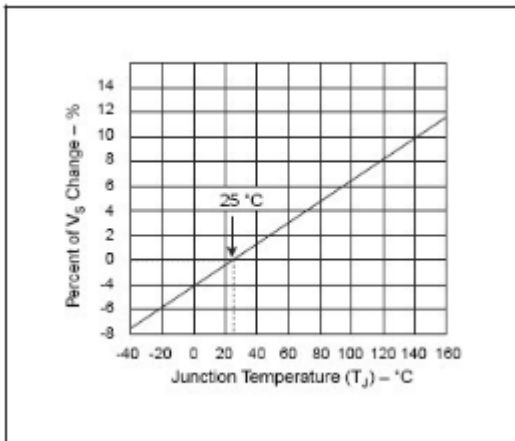


**tr x td Pulse Wave-form**



**Thermal Derating Curves**

**Normalized VS Change versus Junction Temperature**



**Normalized DC Holding Current versus Case Temperature**

