

# PxxxxLB Series

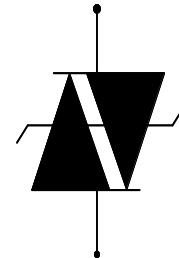
Thyristors Solid Protection Device Bidirectional transient voltage suppressors

## Features

- For surface mounted applications to optimize board space
- Low profile package
- Bidirectional crowbar protection
- Low leakage current : I = 5uA max
- Low on-state voltage
- Low Capacitance
- Response Time is < 1us
- YD/T 950 IEC 61000-4-5
- YD/T 993 ITU K.20/21
- YD/T 1082 TIA-968-A
- GR 1089 Intra-building
- Solid-state silicon technology
- Meets MSL 1 Requirements
- ROHS compliant
- WeiPan technology



**DO-15**



**Schematic Diagram**

## Ordering Information

Device	Qty per Reel	Reel Size
PxxxxLB	4000	13 Inch
PxxxxLB	2000	T/R

## Maximum Ratings and Electrical Characteristics

Symbol	Parameter	Value	Unit
I <sub>PP</sub>	Non-repetitive peak pulse current	10/1000 us	80
		5/310 us	100
		8/20 us	250
V <sub>PP</sub>	Non-repetitive peak pulse voltage	10/700us	4000
V <sub>ESD</sub>	ESD Rating per IEC61000-4-2:	Contact	8
		Air	15
T <sub>s</sub>	Storage temperature range	-40 to +150	°C
T <sub>j</sub>	Maximum junction temperature	150	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

\*Other voltages may be available upon request.

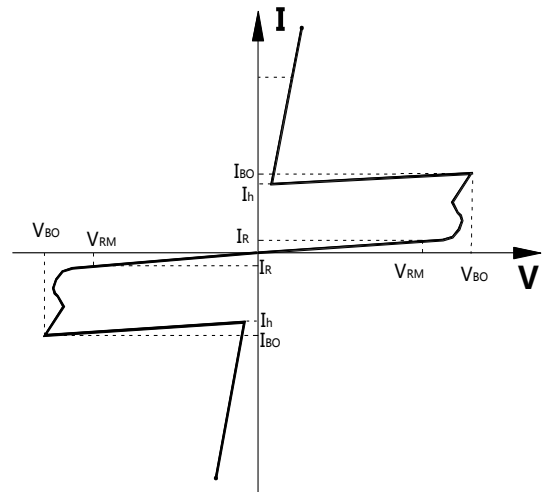
**Electrical Parameters** ( $T_{amb}=25^{\circ}C$ )

Type	$V_{RM}$	$I_{RM}$	$V_{BO}$	$I_{BO}$	$V_T$	$I_T$	$C_O$	$I_H$
	Min.	Max.		Max.	Max.		Typ.	Typ.
	V	$\mu A$	V	mA	V	A	pF	mA
P0080LB	6	5	25	800	4	2.2	85	50
P0300LB	25	5	40	800	4	2.2	85	50
P0640LB	58	5	77	800	4	2.2	60	150
P0720LB	65	5	88	800	4	2.2	60	150
P0900LB	75	5	98	800	4	2.2	55	150
P1100LB	90	5	130	800	4	2.2	55	150
P1300LB	120	5	160	800	4	2.2	55	150
P1500LB	140	5	180	800	4	2.2	60	150
P1800LB	170	5	220	800	4	2.2	60	150
P2000LB	180	5	220	800	4	2.2	60	150
P2300LB	190	5	260	800	4	2.2	55	150
P2600LB	220	5	300	800	4	2.2	50	150
P3100LB	275	5	350	800	4	2.2	45	150
P3500LB	320	5	400	800	4	2.2	40	150
P4000LB	360	5	460	800	4	2.2	40	150
P4500LB	460	5	540	800	4	2.2	40	150
P5000LB	500	5	600	800	4	2.2	40	150

Notes:

- All measurements are made at an ambient temperature of 25 °C.  $I_{PP}$  applies to -40 °C through +85 °C temperature range.
- Off-state capacitance ( $C_O$ ) is measured at 1 MHz with a 2 V bias and is typical value.

Symbol	Parameter
$V_{RM}$	Stand-off voltage
$V_{BR}$	Breakdown voltage
$V_{BO}$	Switching Voltage
$I_{BO}$	Breakover current
$I_{RM}$	Leakage current at $V_{RM}$
$I_{PP}$	Peak pulse current
$I_H$	Holding current
$V_T$	On-state Voltage at $I_T$
$C_O$	Off-state Capacitance



Typical electrical characterist applications

Rating and Characteristics Curves

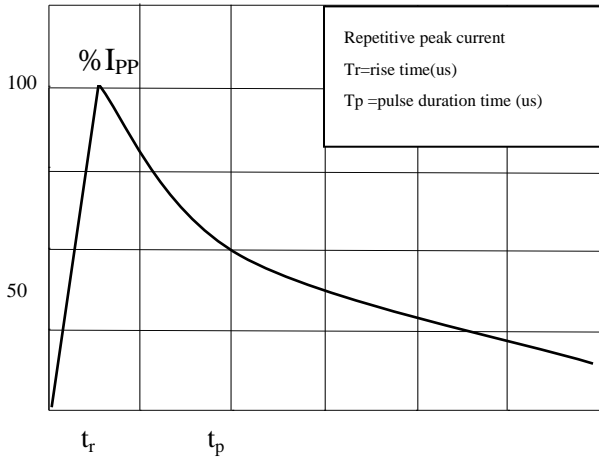


Fig.1 Pulse Waveform (5/310us)

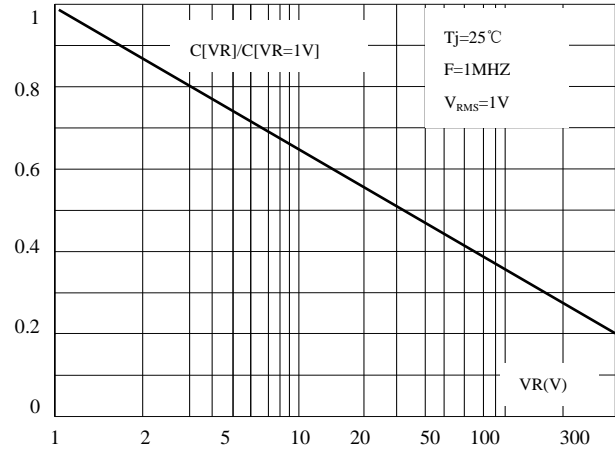


Fig.2 Relation Variation of Junction Capacitance Versus Reverse Voltage Applied (Typical Values)

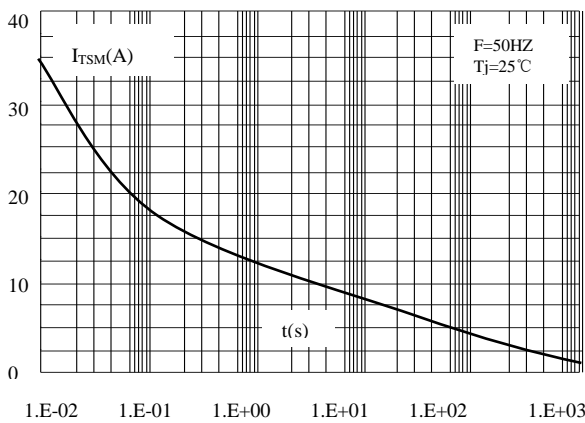


Fig.3 Non Repetitive Surge Peek On-State Current Versus Overload Duration

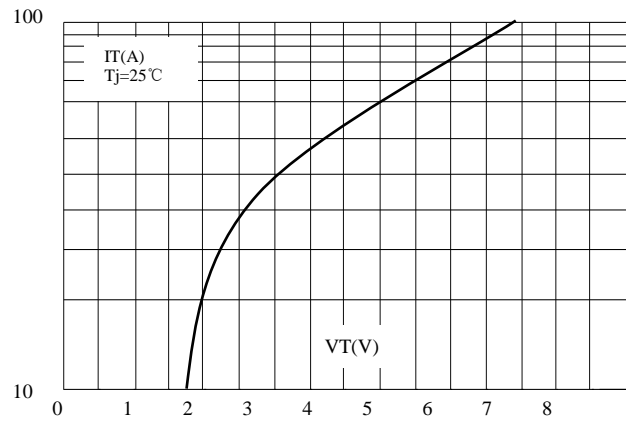


Fig.4 On-State Voltage Versus On-State Current (Typical Values)

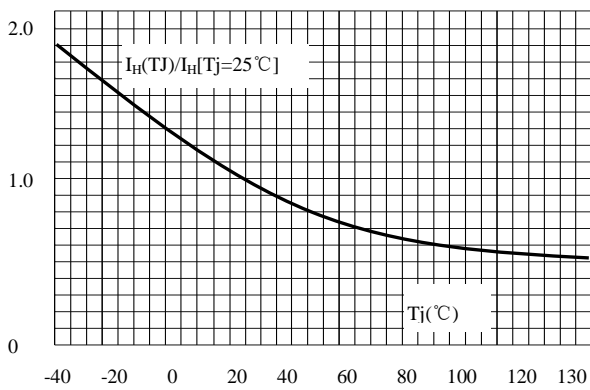


Fig.5 Relative Variation of Hold Current Versus Junction Temperature

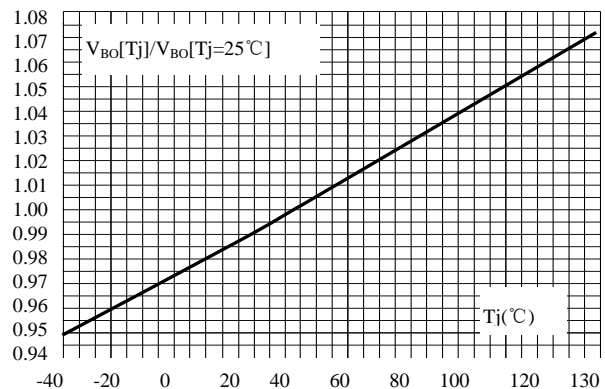


Fig.6 Relative Variation of Break Over Voltage Versus Junction Temperature

Typical electrical characterist applications

Rating and Characteristics Curves

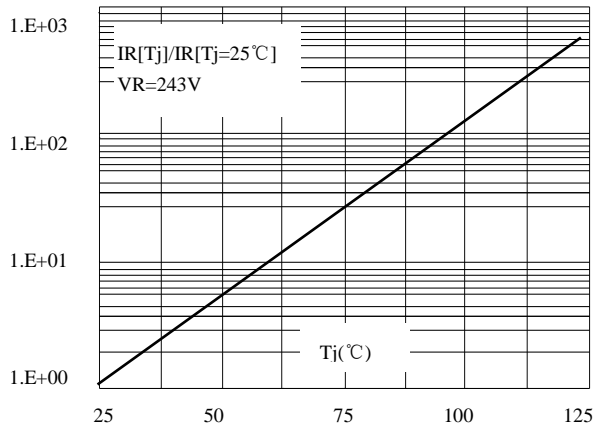


Fig.7 Relative Variation of Leakage Current Versus Reverse Voltage (Typical Values)

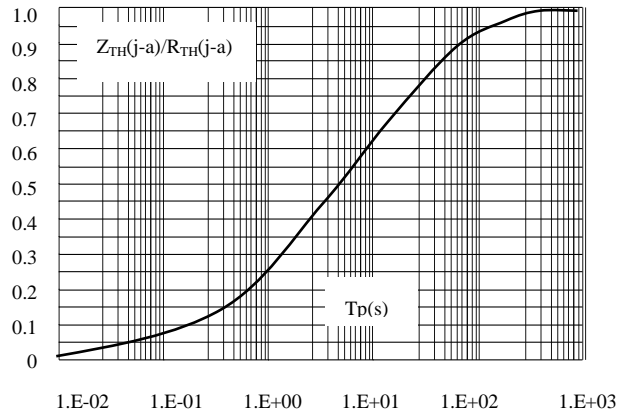


Fig.8 Variation of Thermal Impedance Junction To Ambient Versus Pulse Duration

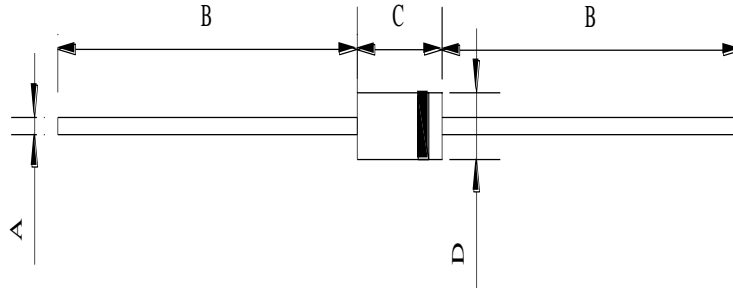
**Package information**

**DO-15**

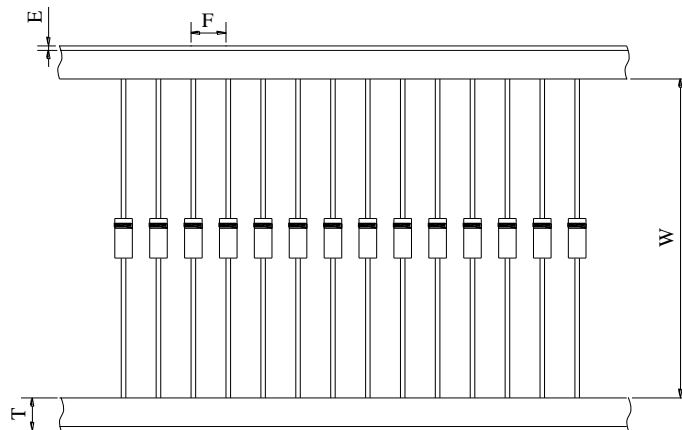
**Mechanical Data**

- Case: DO-15
- Case Material: Transfer Molded Epoxy. UL Flammability
- Classification Rating 94V-0
- Weight: 0.4 grams (approximate)

DO-15



**Axial Lead Taping Specifications**



DMI	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A	0.718	0.720	0.722	0.027	0.028	0.029
B		26.60			1.047	
C	6.07	6.10	6.13	0.239	0.240	0.241
D	3.27	3.30	3.33	0.129	0.130	0.131
E	—	0.8	—	—	0.031	—
F	4.5	5.0	5.5	0.177	0.197	0.217
T	5.6	6.0	6.4	0.220	0.236	0.252
W	59.1	59.3	59.5	2.327	2.335	2.343