

P1800SB
Thyristor Surge Protective Devices

Revision:A

General Description

P1800SB is a solid state crowbar device designed to protect telecom equipment during hazardous transient conditions. It is a two terminal solid state device capable to drain a surge current pulse to ground when a transient voltage appears in between its two terminals when a specific maximum voltage delimited by the maximum breakover voltage of the device is reached.

Features

- Bidirectional crowbar protection
- Continuous reverse voltage :170V
- Low leakage current: IR=10uA max.
- Holding current: IH=150mA min.

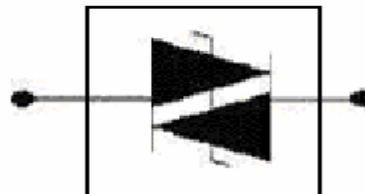
Main applications

- Interface circuit
- Analog line cards

Functional diagram



SMB

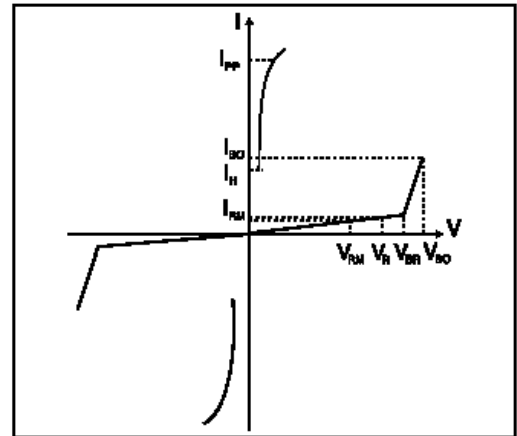


Absolute Ratings (Tamb=25°C)

Symbol	Parameter	Value	Unit	
Ts	Storage temperature range	-40 to +150	°C	
Tj	Maximum junction temperature	150	°C	
I _{PP}	Repetitive peak pulse current	10/1000µs	75	A
		10/700µs	100	
		10/160µs	150	
		8/20µs	250	
		2/10µs	250	
I _{TSM}	Non repetitive surge peak on-state current (sinusoidal)	t=16.6ms	20	A

Electrical Parameters

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



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

Type	V_{RM}	I_{RM}	V_{BO}	I_{BO}	V_T	I_T	C_o	I_H
	Min.		Max.	Max.	Max.		Max.	Min.
	V	μA	V	mA	V	A	pF	mA
P1800SB	170	10	230	800	4	1	60	150

Typical Characteristics

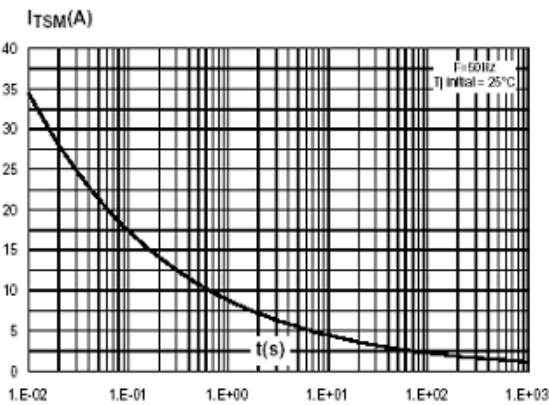


Fig.1: Non repetitive surge peak on-state current versus overload duration

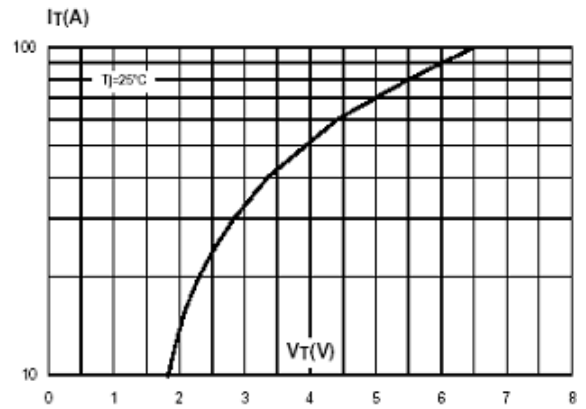


Fig.2: On-state voltage versus on-state current (typical values)

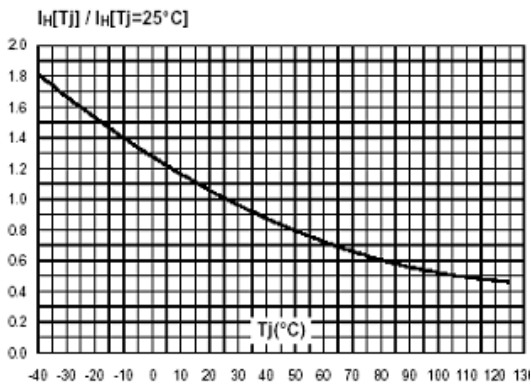


Fig.3: Relative variation of holding current versus junction temperature

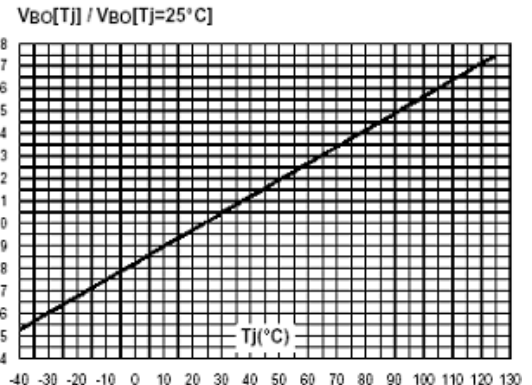


Fig.4: Relative variation of breakover voltage versus junction temperature

P1800SB

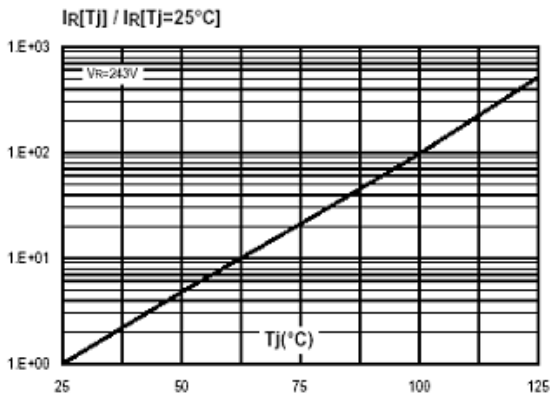


Fig.5:Relative variation of leakage current versus reverse voltage applied(typical values)

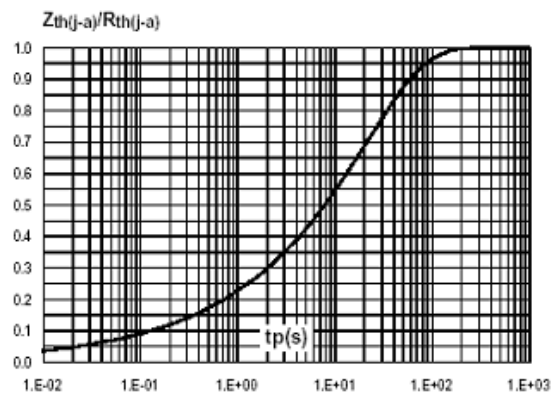
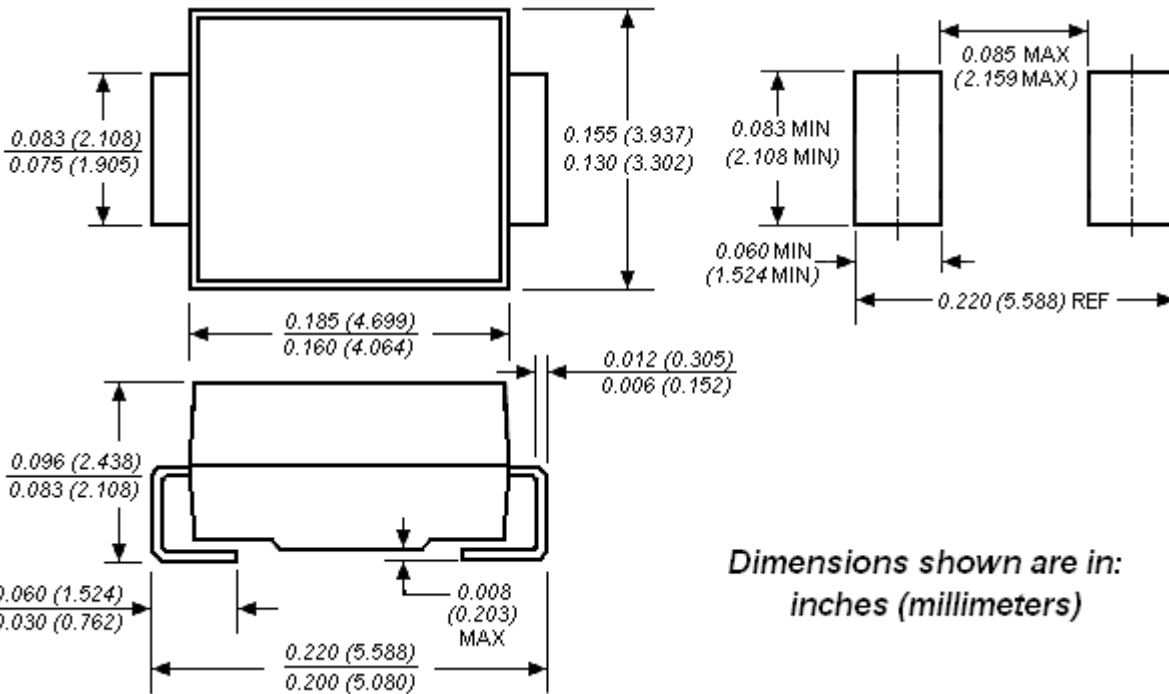


Fig.6:Variation of thermal impedance junction to ambient versus pulse duration(Printed circuit board FR4, $Scu=35\mu\text{m}$, recommended pad layout)

SMB Mechanical Dimensions



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