

**Surface Mount**  
**Thyristor Surge Protective Devices**  
**TSP0080SB**

TSP0080SB 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 break over voltage of the device is reached.

**FEATURES**

- Bidirectional crowbar protection
- Continuous reverse voltage :8V
- Low leakage current :  $I_R=2\mu A_{max}$ .
- Holding current :  $I_H=50mA_{min}$

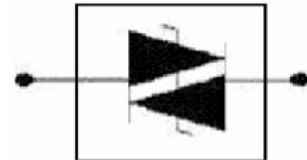
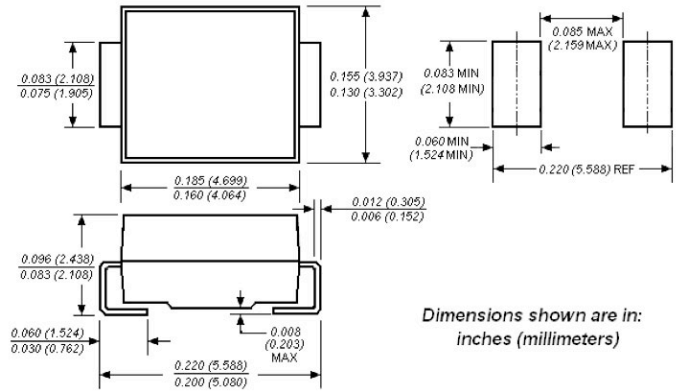
**MECHANICAL DATA**

Case: SMB Molded plastic

**Main applications**

- Interface circuit
- Analog line cards

**DO-214AA (SMB)**

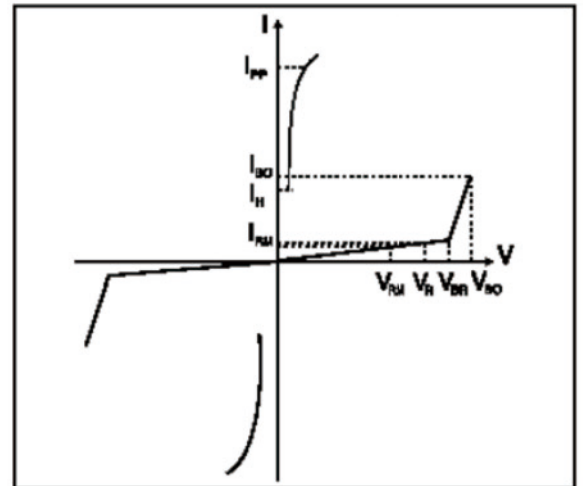


**Absolute Ratings (Tamb=25°C)**

Symbol	Parameter	Value	Unit	
Ts	Storage temperature range	-55 to +150	°C	
Tj	Maximum junction temperature	150	°C	
I <sub>PP</sub>	Repetitive peak pulse current	10/1000μs	75	A
		10/560μs	100	
		10/160μs	150	
		8/20μs	250	
		2/10μs	250	
I <sub>TSM</sub>	Non repetitive surge peak on-state current (sinusoidal)	t=1s	8	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	$\mu A$	V	mA	V	A	pF	mA
TSP008SB	6	2	15	800	2	1	80	50

## RATINGS AND CHARACTERISTIC CURVES

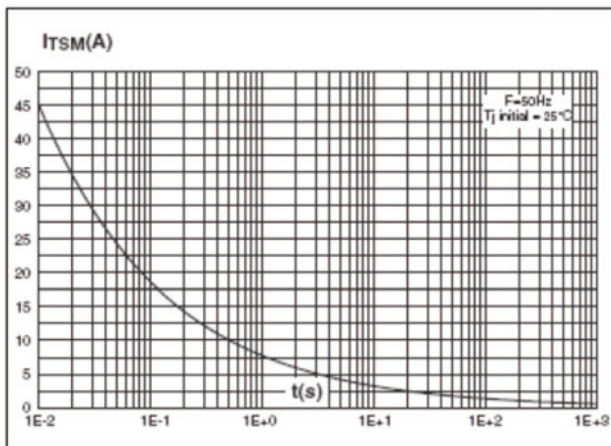


Fig.1: Non repetitive surge peak on-state current versus overload duration

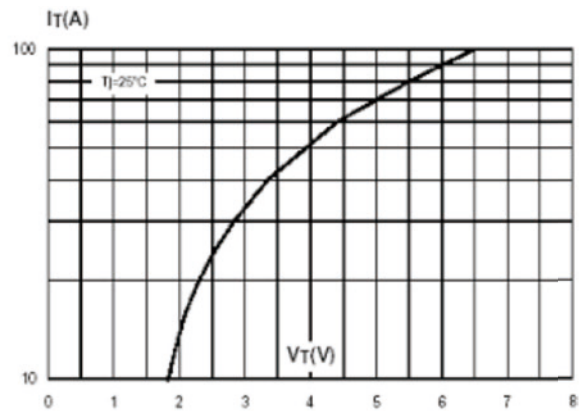


Fig.2: On-state voltage versus on-state current (typical values)

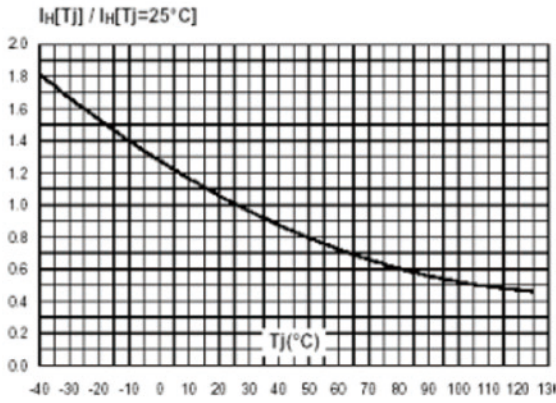


Fig.3:Relative variation of holding current versus junction temperature

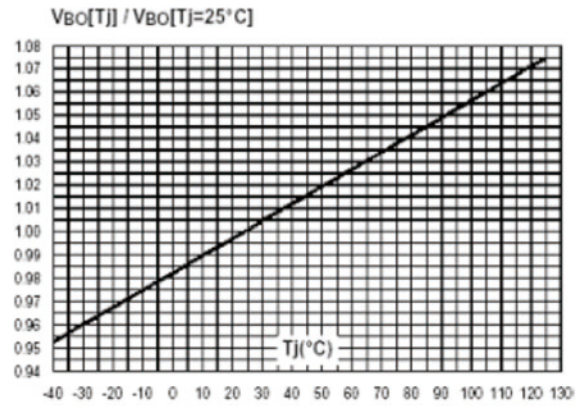


Fig.4:Relative variation of breakover voltage versus junction temperature

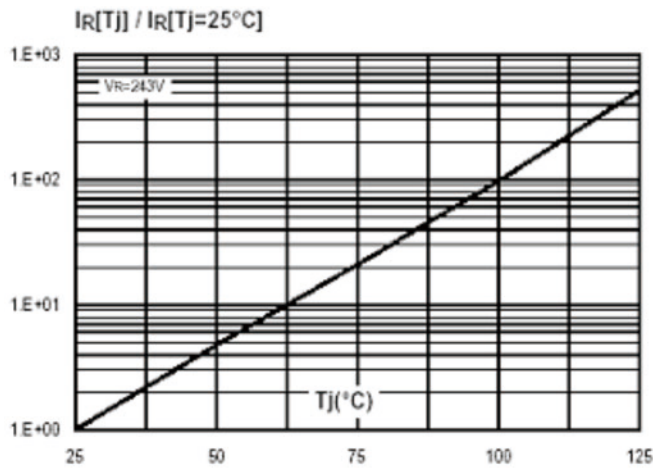


Fig.5:Relative variation of leakage current versus reverse voltage applied(typical values)

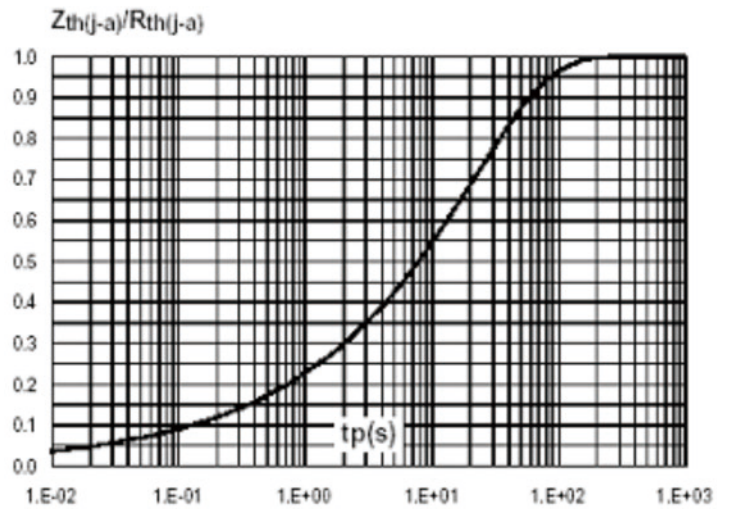


Fig.6:Variation of thermal impedance junction to ambient versus pulse duration(Printed circuit board FR4,Scu=35um,recommended pad layout)