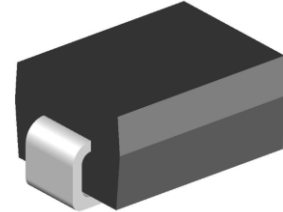


**SPD9811B**
**1-Line, Bi-directional, Thyristor Surge Suppressors**
<http://www.sh-willsemi.com>
**Descriptions**

The SPD9811B is a bi-directional TSS (Thyristor Surge Suppressors) which can provide ESD protection for IC. It is specifically designed to protect telecom equipments from damaging overvoltage transients.

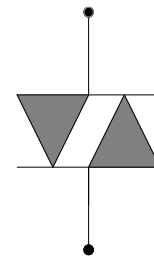
The SPD9811B is used to enable equipments to meet various regulatory requirements including, ITU-T K.20, K.21 and IEC 61000-4-5


**SMB (DO-214AA)**

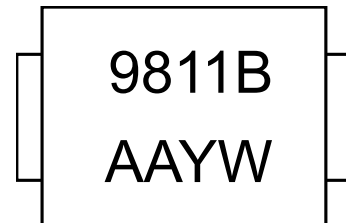
The SPD9811B is available in SMB package. Standard products are Pb-free and Halogen-free.

**Features**

- Peak off-state voltage:  $\pm 320V$  Max
- Excellent capability of absorbing transient surge
- Quick response to surge voltage
- Eliminate voltage overshoot caused by fast-rising transients
- Low leakage current:
- Solid-state silicon technology, non degenerative


**Schematic Diagram**
**Applications**

- Audio/Video line
- Network and telecom
- Data lines and security systems
- Serial ports
- BNC interface
- DVR



AA = Device code  
 Y = Year code  
 W = Week code

**Marking (Top View)**
**Order information**

Device	Package	Shipping
SPD9811B-2/TR	SMB	3000/Tape&Reel

**Absolute maximum ratings**

Parameter	Symbol	Rating	Unit
Junction Temperature	$T_J$	-55~150	°C
Operating Temperature	$T_{OP}$	-40~125	°C
Storage Temperature Range	$T_{STG}$	-55~150	°C
Lead temperature	$T_L$	260	°C
Junction to ambient thermal resistance	$R_{\theta JA}$	90	°C/W

**Electrical characteristics ( $T_A=25^\circ\text{C}$ , unless otherwise noted)**

Part Number	$V_{DRM}$	$I_{DRM}$	$V_S^{1)}$	$V_{BR}^{2)}$	$I_S$	$I_H$	$V_T$	$I_T$	$C_O^{3)}$
	V	$\mu\text{A}$	V	V	mA	mA	V	A	pF
		Max.	Max.	Min.		Max.	Max.		Typ.
SPD9811B	320	1	400	330	800	150	4	2.2	50

Notes:

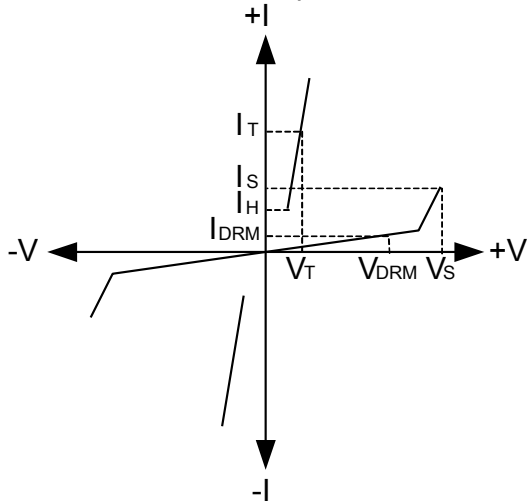
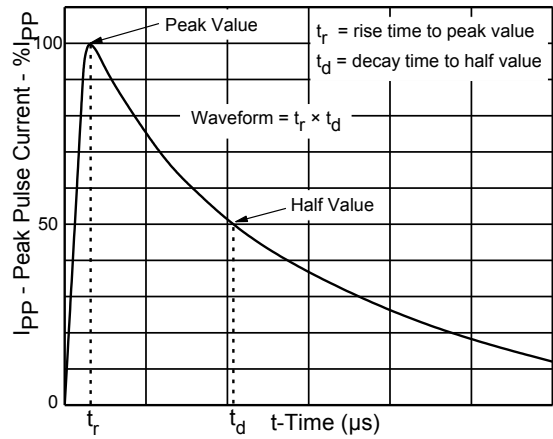
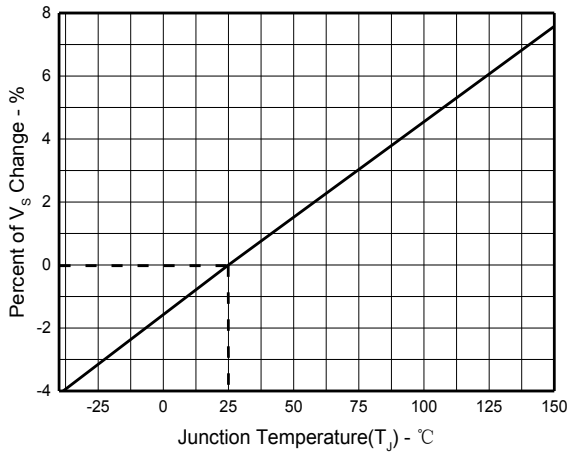
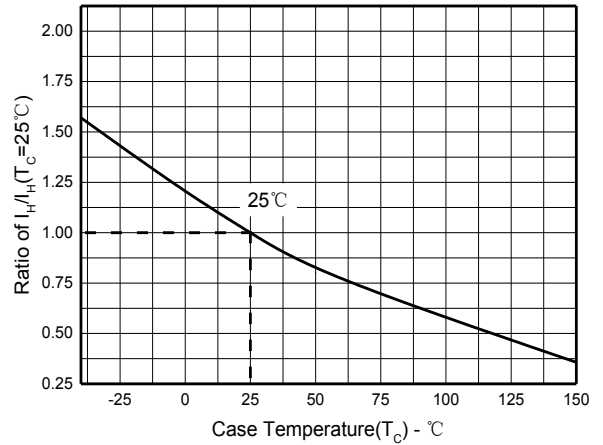
- 1)  $V_S$  is measured at 100kV/s.
- 2)  $V_{BR}$  is measured at  $I_{BR}=1\text{mA}$ .
- 3) Off-state capacitance is measured at  $f = 1\text{MHz}$ ,  $V_{DC} = 2\text{V}$ .

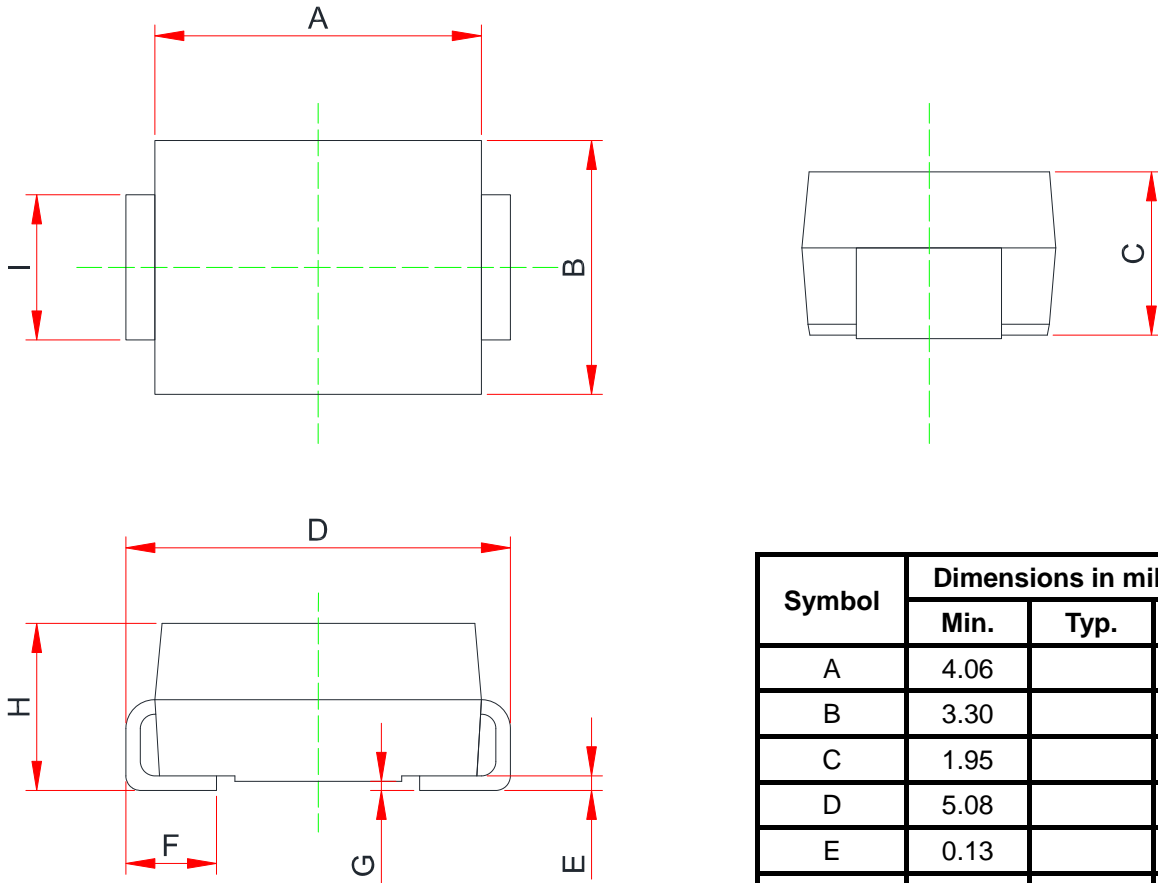
**Surge Ratings**

Part Number	5/320 $\mu\text{s}^{1)}$
	10/700 $\mu\text{s}^{2)}$
SPD9811B	6000V

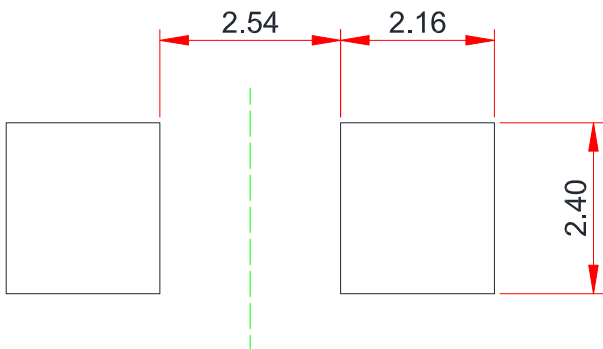
Notes:

- 1) Current waveform.
- 2) Voltage waveform.

**Typical characteristics ( $T_A=25^\circ\text{C}$ , unless otherwise noted)**

**Definitions of electrical characteristics**

**Peak pulse current waveform**

**Normalized  $V_S$  Change vs. Junction Temperature**

**Normalized Holding Current vs. Case Temperature**

**Package outline dimensions**
**SMB**


Symbol	Dimensions in millimeter		
	Min.	Typ.	Max.
A	4.06		4.57
B	3.30		3.94
C	1.95		2.62
D	5.08		5.59
E	0.13		0.31
F	0.76		1.52
G	0.20 Max.		
H	2.10	2.30	2.50
I	1.78	2.00	2.20

**Recommend land pattern (Unit: mm)**

**Notes:**

This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.