

**SPD9511B**
**1-Line, Bi-directional, Thyristor Surge Suppressors**
<http://www.sh-willsemi.com>
**Descriptions**

The SPD9511B 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.

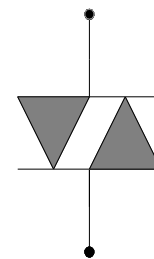
The SPD9511B is used to enable equipments to meet various regulatory requirements including, ITU-T K.20, K.21 and IEC 61000-4-5


**SMB (DO-214AA)**

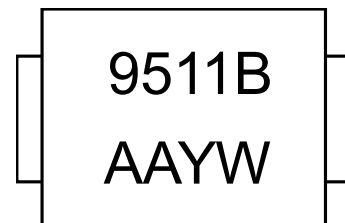
The SPD9511B is available in SMB package. Standard products are Pb-free and Halogen-free.

**Features**

- Peak off-state voltage:  $\pm 190V$  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**

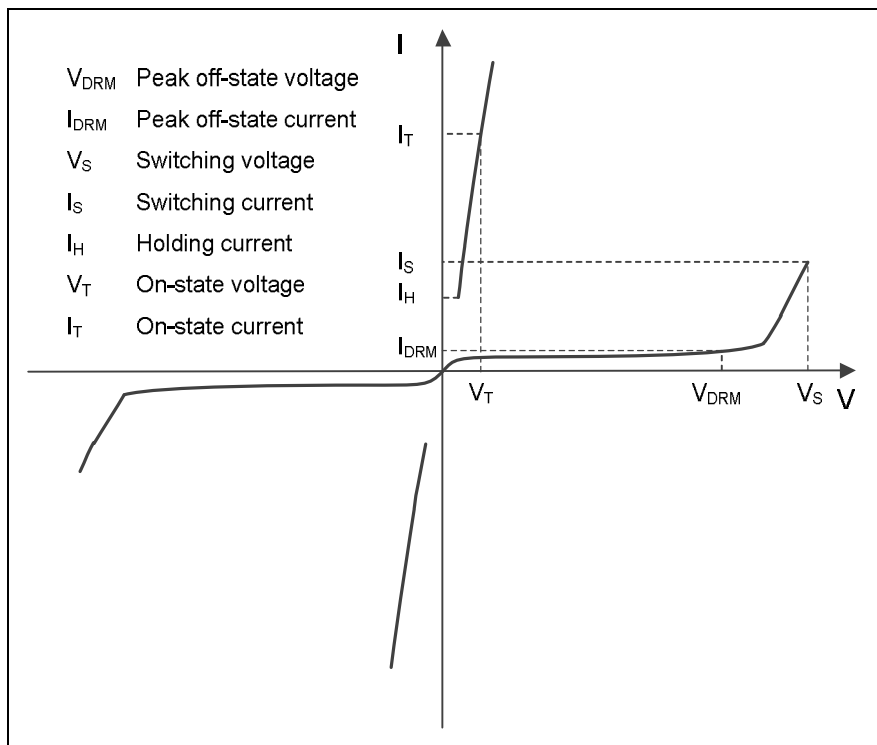
Device	Package	Shipping
SPD9511B-2/TR	SMB	3000/Tape&Reel

**Electrical characteristics (T<sub>A</sub>=25°C, unless otherwise noted)**

Part Number	V <sub>DRM</sub>	I <sub>DRM</sub>	V <sub>S</sub>	V <sub>BR</sub> <sup>1</sup>	I <sub>S</sub>	I <sub>H</sub>	V <sub>T</sub>	I <sub>T</sub>	C <sub>O</sub> <sup>2</sup>
	V	μA	V	V	mA	mA	V	A	pF
		Max.	Max.	Min.		Max.	Max.		Typ.
SPD9511B	190	1	260	200	800	150	4	2.2	50

**Notes:**

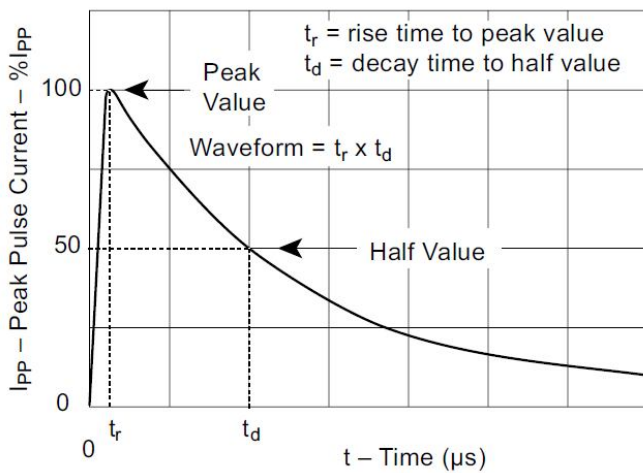
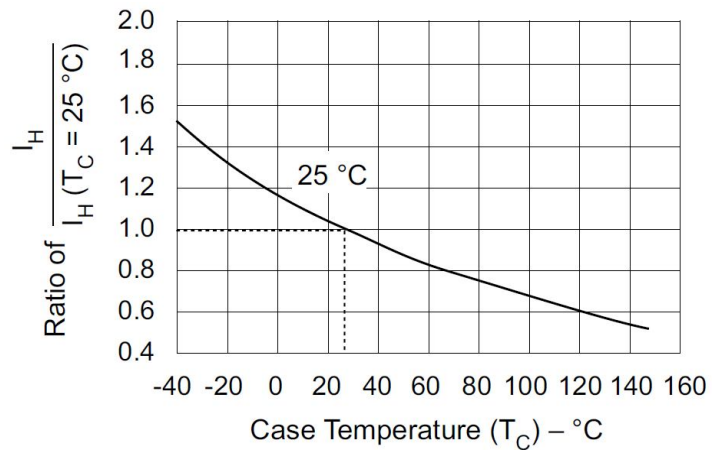
- 1) V<sub>BR</sub> is measured at I<sub>BR</sub>=1mA.
- 2) Off-state capacitance is measured at f = 1MHz, V<sub>DC</sub> = 2V.

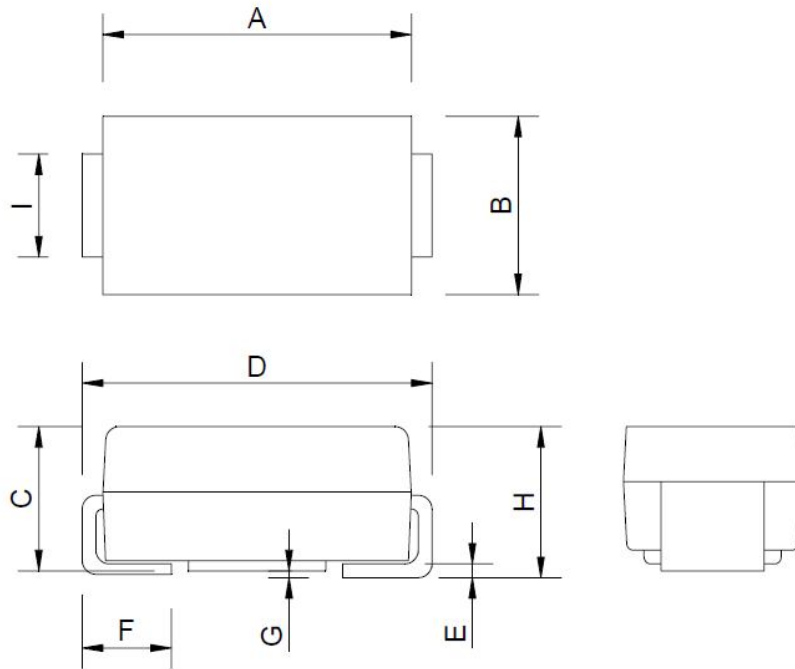

**Definitions of electrical characteristics**
**Surge Ratings**

Part Number	Surge Level (IEC61000-4-5)
	Voltage waveform:10/700us Current waveform:5/320us
	V
SPD9511B	6000

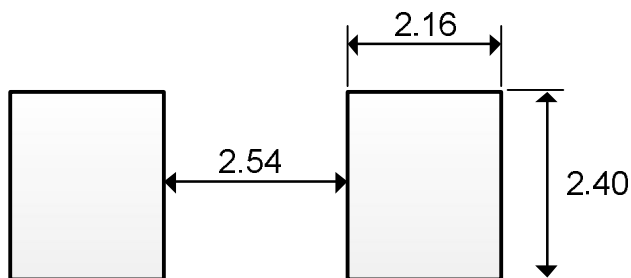
**Thermal considerations**

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

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

**Peak pulse current waveform**

**Normalized holding current vs. Case temperature**

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


Symbol	Dimensions in millimeter		
	Min.	Typ.	Max.
A	4.30	4.50	4.70
B	3.30	3.50	3.70
C	2.00	2.15	2.30
D	5.05	5.30	5.55
E	0.10	0.20	0.30
F	0.95	1.25	1.55
G	0.20 Max.		
H	2.10	2.30	2.50
I	1.85	2.00	2.15

**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.