SPD9231A

1-Line, Bi-directional, Thyristor Surge Suppressors

http//:www.sh-willsemi.com

Descriptions

The SPD9231A 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 SPD9231A is used to enable equipments to meet various regulatory requirements including ITU-T K.20, K.21 and IEC 61000-4-5

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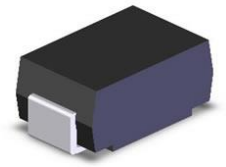
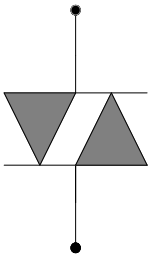
The SPD9231A is available in SMA package. Standard products are Pb-free and Halogen-free.



SMA

Features

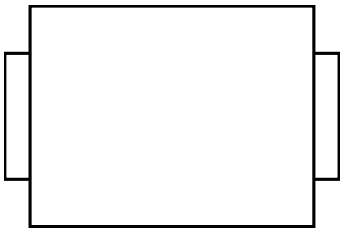
- Peak off-state voltage: ±6.0V Max
- Excellent capability of absorbing transient surge
- Quick response to surge voltage
- Eliminate voltage overshoot caused by fast-rising transients
- Low leakage current:
- Solid-state silicon technology, non degenerative



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
SPD9231A-2/TR	SMA	5000/Tape&Reel

Electrical characteristics (T_A=25 °C, unless otherwise noted)

Part Number	V_{DRM}	I_{DRM}	V_S	V_{BR} [1]	I_S	I_H	V_T	I_T	C_O [2]
	V	μA	V	V	mA	mA	V	A	pF
		Max.	Max.	Min.		Max.	Max.		Typ.
SPD9231A	6.0	1	15	6.2	800	150	4	2.2	120

Notes:

1) V_{BR} is measured at I_{BR}=1mA.

2) Off-state capacitance is measured at f = 1MHz, V_{DC} = 2V.

Surge Ratings

Part Number	5/320μs [1)]
	10/700μs [2)]
SPD9231A	4000 V

Notes:

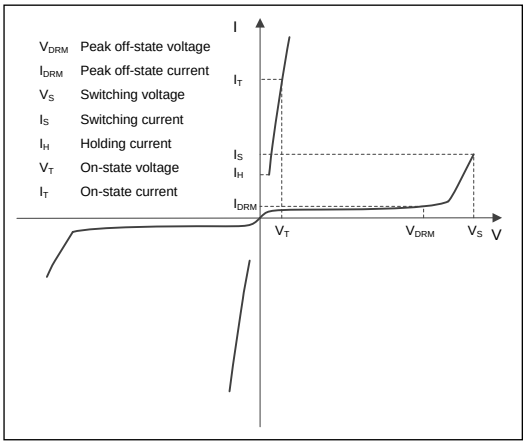
1) Current waveform.

2) Voltage waveform.

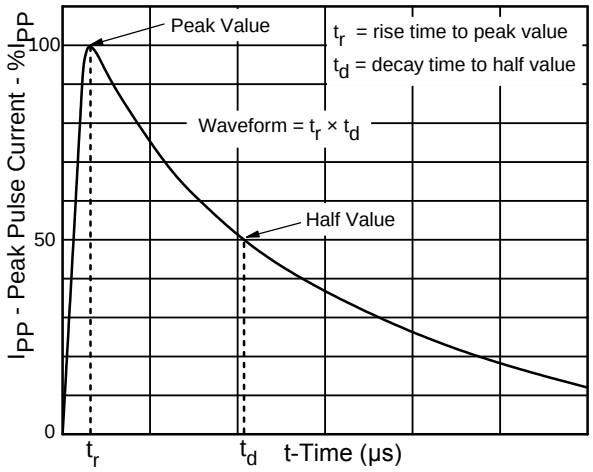
Thermal considerations Thermal considerations

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

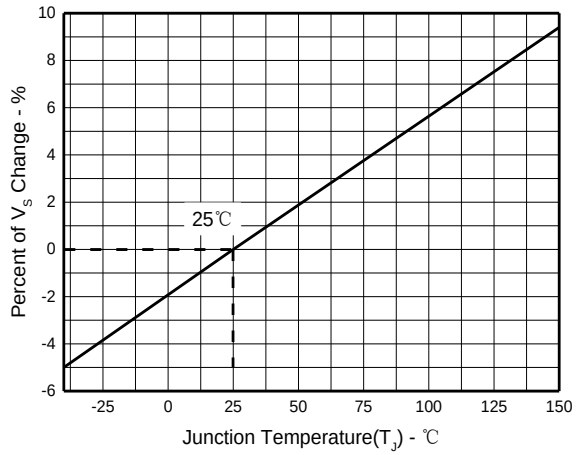
Typical characteristics (T_A=25°C, unless otherwise noted)



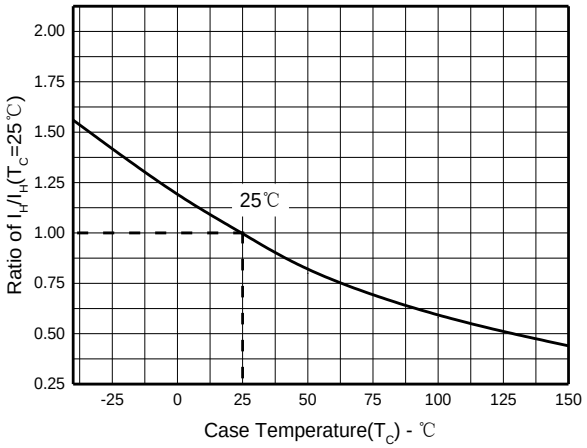
Definitions of electrical characteristics



Peak pulse current waveform



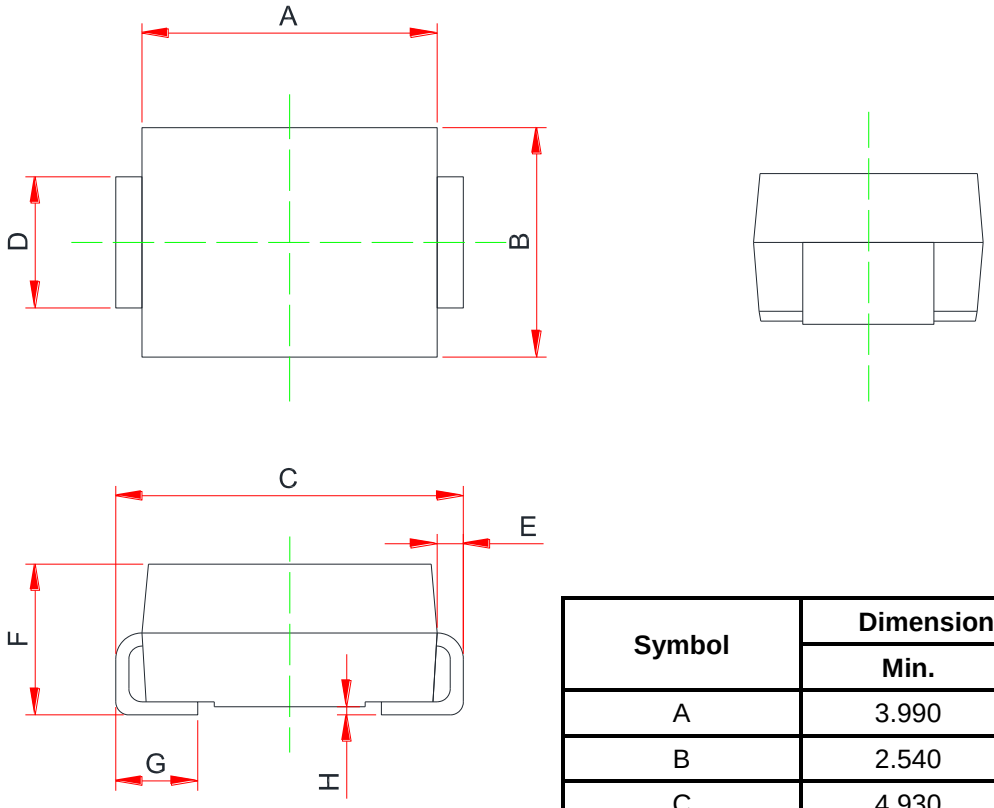
Normalized V_S Change vs. Junction Temperature



Normalized Holding Current vs. Case Temperature

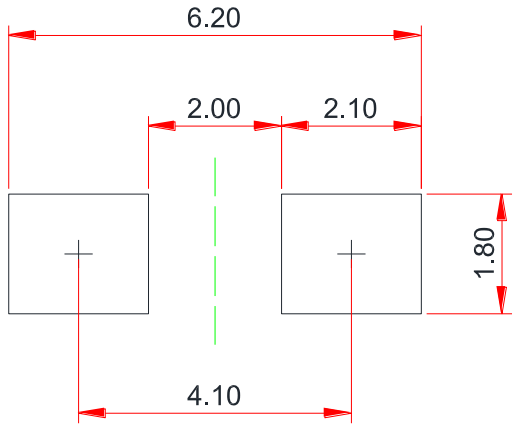
Package outline dimensions

SMA



Symbol	Dimensions in millimeter	
	Min.	Max.
A	3.990	4.500
B	2.540	2.790
C	4.930	5.280
D	1.250	1.650
E	0.152	0.305
F	1.980	2.290
G	0.780	1.520
H	-	0.203

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.