

SPD9105W

1 Lines, Bi-directional, low Capacitance Transient Voltage Suppressors

Descriptions

The SPD9105W is a low capacitance TVS (Transient Voltage Suppressor) array designed to protect high speed data interfaces. It has been specifically designed to protect sensitive electronic components which are connected to data and transmission lines from over-stress caused by Electrostatic Discharge (ESD), cable discharge events (CDE), lightning and other induced voltage surges.

The SPD9105W incorporates low capacitance steering diodes that reduce the typical capacitance to 1pF per line.

The SPD9105W may be used to provide ESD protection up to ±30kV (contact discharge) according to IEC61000-4-2, and withstand peak pulse current up to 20A (8/20µs) according to IEC61000-4-5.

The SPD9105W is available in SOD-323 package. Standard products are Pb-free and Halogen-free.

Features

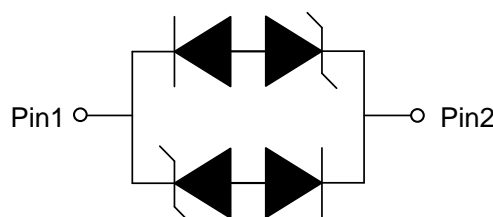
- Stand-off voltage: 5V Max.
- Transient protection for each line according to IEC61000-4-2 (ESD): ±30kV (contact discharge)
IEC61000-4-4 (EFT): 40A - 5/50ns
IEC61000-4-5 (surge): 20A (8/20µs).
- Low capacitance: $C_J = 1\text{pF typ.}$
- Ultra-low leakage current: $I_R = 0.1\text{nA typ.}$
- Low clamping voltage.
- Solid-state silicon technology

Applications

- 10/100 Ethernet
- STB
- Router
- Networking
- Modem



SOD-323



Circuit diagram



W = Device code

* = Month code (A~Z)

Marking (Top View)

Order information

Device	Package	Shipping
SPD9105W-2/TR	SOD-323	3000/Tape&Reel

Absolute maximum ratings

Parameter	Symbol	Rating	Unit
Peak pulse power ($t_p = 8/20\mu s$)	P_{pk}	360	W
Peak pulse current ($t_p = 8/20\mu s$)	I_{PP}	20	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	± 30	kV
ESD according to IEC61000-4-2 contact discharge		± 30	
Operation junction temperature	T_J	125	$^{\circ}C$
Lead temperature	T_L	260	$^{\circ}C$
Storage temperature	T_{STG}	-55~150	$^{\circ}C$

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

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse maximum working voltage	V_{RWM}				5	V
Reverse leakage current	I_R	$V_{RWM} = 5V$		0.1	100	nA
Reverse breakdown voltage	V_{BR}	$I_T = 1mA$	5.6			V
Clamping voltage ¹⁾	V_{CL}	$I_{PP} = 1A, t_p = 8/20\mu s$			9	V
		$I_{PP} = 5A, t_p = 8/20\mu s$			11	V
		$I_{PP} = 20A, t_p = 8/20\mu s$			18	V
Junction capacitance	C_J	$V_R = 0V, f = 1MHz$ I/O to I/O			3	pF

1) According to IEC61000-4-5.