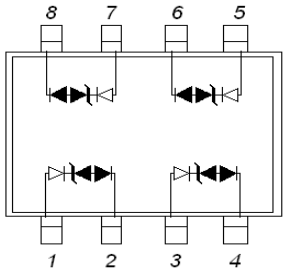
Description

The SLVU2.8-4 is low capacitance transient voltage suppressor for high speed data interface that designed to protect sensitive electronics from damage or latch-up due to ESD lightning, and other voltage induced transient events. All pins are rated to withstand 25kv ESD pulses using the IEC 61000-4-2 contact discharge method, which can meet the requirement of level 4.



Feature

- 500W peak pulse power (t_P = 8/20μs)
- SOP-8 package
- Working voltage: 2.8V
- Low clamping voltage
- Low capacitance
- RoHS Compliant Transient Protection for High Speed Data Lines to
  IEC61000-4-2(ESD)±15kV(air),±8kV(Contact)
  IEC61000-4-4(EFT) 40A(5/50ns)
  IEC61000-4-5(lightning) 24A(8/20us)

Applications

- Video/Audio input
- WAN/LAN Equipment
- Personal Digital Assistant (PDA)
- Ethernet - 10/100/1000 Base T

Electrical characteristics per line@(unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				2.8	V
Reverse Breakdown Voltage	V_{BR}	I_t = 1mA	3.0	4.0		V
Reverse Leakage Current	I_R	V_{RWM} =2.8V, T=25℃			1	μA
Clamping Voltage	V_C	I_{PP} = 1A, t_P = 8/20μs			6.0	V
Clamping Voltage	V_C	I_{PP}=5A, t_P = 8/20μs			9.0	V
Junction Capacitance	C_J	V_R=0V, f = 1MHz		3.0	5.0	pF

Absolute maximum rating@25℃

Rating	Symbol	Value	Units
Peak Pulse Power (t_p=8/20μs)	P_{pp}	500	W
Operating Temperature	T_J	-55 to +150	℃
Storage Temperature	T_{STG}	-55 to +150	℃

Typical Characteristics

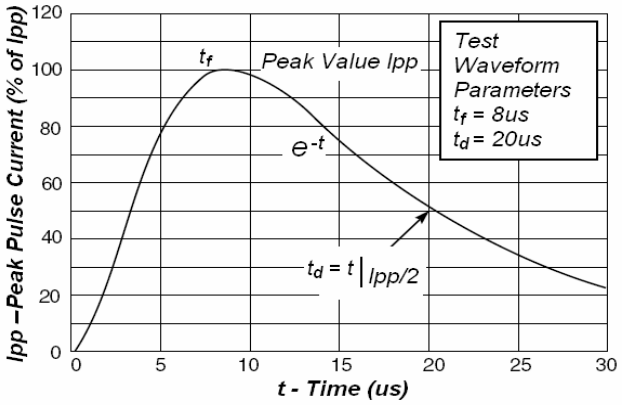


Fig1. Pulse Waveform

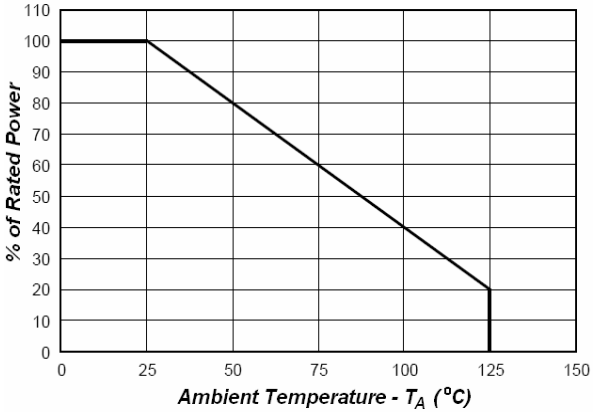


Fig2. Power Derating Curve

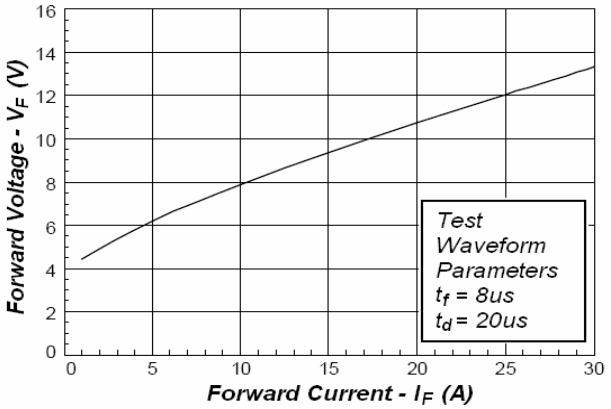


Fig3. Forward Voltage vs. Forward Current

Configuration Diagram

➢ **Unidirectional Common-Mode Protection (Figure 4)**

The SLVU2.8-4 provides up to four lines of protection in a common-mode configuration as depicted in figure 4. Circuit connectivity is as follows:

- Line 1 is connected to Pin 1
- Line 2 is connected to Pin 7
- Line 3 is connected to Pin 3
- Line 4 is connected to Pin 5
- Pins 2, 4, 6 and 8 are connected to ground

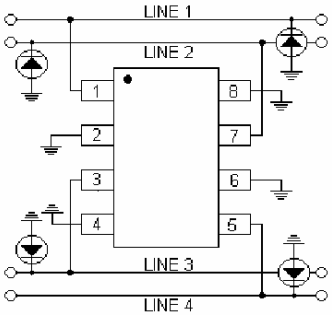


Fig4.

➢ Bidirectional Common-Mode Protection (Figure 5)

The SLVU2.8-4 provides up to two lines of protection in a common-mode configuration as depicted in figure 5.

Circuit connectivity is as follows:

- Line 1 is connected to Pins 1 & 8
- Line 2 is connected to Pins 4 & 5
- Pins 2, 3, 6, and 7 are connected to ground

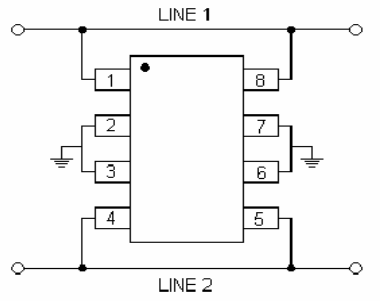


Fig5.

➢ Bidirectional differential-Mode Protection (Figure 6)

The SLVU2.8-4 provides up to two-line pairs of protection in a differential-mode configuration as depicted in figure 6.

Circuit connectivity is as follows:

- Line Pair 1 is connected to Pins 1 & 2
- Line Pair 1 is connected to Pins 7 & 8
- Line Pair 2 is connected to Pins 3 & 4
- Line Pair 2 is connected to Pins 5 & 6

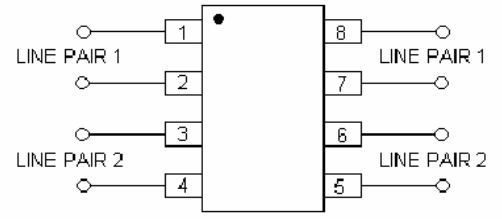


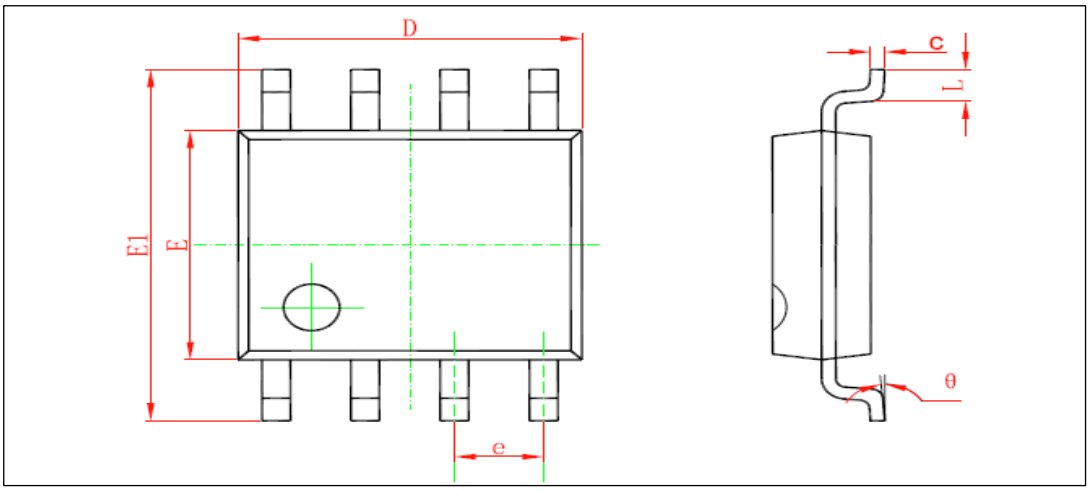
Fig6.

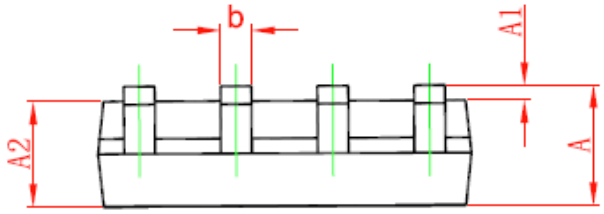
➢ Circuit Board Layout Protection

Circuit board layout is critical for Electromagnetic Compatibility (EMC) protection. The following guidelines are recommended:

- The protection device should be placed near the input terminals or connectors, the device will divert the transient current immediately before it can be coupled into the nearby traces
- The path length between the TVS device and the protected line should be minimized.
- All conductive loops including power and ground loops should be minimized.
- The transient current return path to ground should be kept as short as possible to reduce parasitic inductance.
- Ground planes should be used whenever possible. For multilayer PCBs, use ground

Product dimension





Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

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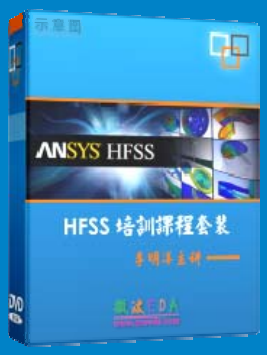

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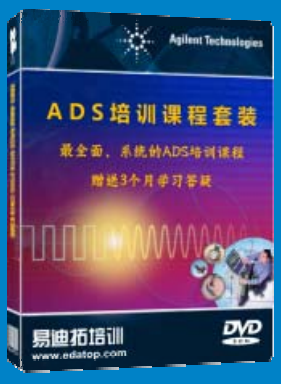

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