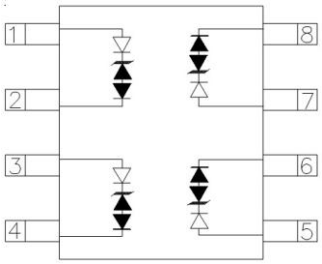
Low Capacitance ESD Protection -ESDSLVU2.8-4

Description

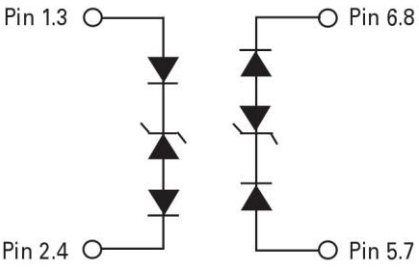
The ESDSLV2.8-4 of transient voltage suppressors are designed to protect low voltage, the features integrated low capacitance compensation diodes that reduce the typical capacitance to 3pF per line. This .combined with low leakage current, means signal integrity is preserved in high-speed applications such as 10/100 Ethernet. The SLVU2.8-4 is in an SO-8 package and may be used to protect two high-speed line pairs. The “flow-thru” design minimizes trace inductance and reduces voltage overshoot associated with ESD events. The low clamping voltage of the SLVU2.8-4 minimizes the stress on the protected IC



Schematic and PIN Configuration

Feature

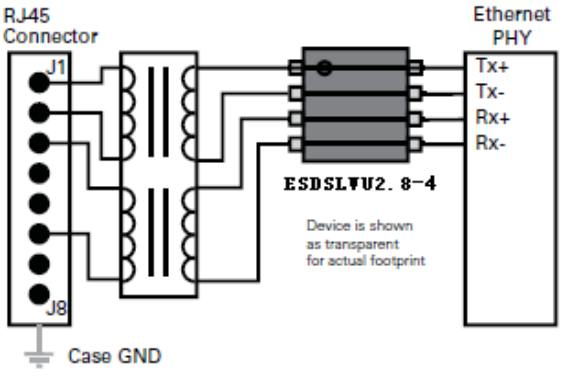
- Case :JEDEC SOP-8 package
- Low clamping voltage
- Small packaging options saves board space
- Low capacitance :3 pF typical
- Protection for 4 Lines
- Compatible with IEC 61000-4-2(ESD) :Air 15KV , Contact 8KV
- Compatible with IEC 61000-4-4(EFT) :40A ,5/50 nS
- Compatible with IEC 61000-4-5(Surge):24A



Functional Block Diagram

Applications

- WAN/LAN Equipment
- 10/100 Ethernet
- Personal digital assistants
- LAN devices
- Switching Systems
- Desktops, Servers, and Notebooks
- Instrumentation
- Analog Inputs



10/100 Ethernet Protection Circuit

Absolute Maximum Ratings

Parameter	Symbol	Value	Units
Peak Current (tp =8/20μ s)	P_{PK}	400	W
Peak Current (tp =8/20μ s)	I_{PP}	24	A
IEC61000-4-2 (Contact)	V_{ESD}	8	kV
IEC61000-4-2 (Air)	V_{ESD}	15	kV
Lead Soldering Temperature	T_L	260 (10 sec)	° C
Operating Temperature	T_J	-50 to 125	° C
Storage Temperature Range	T_{STG}	-50 to 150	° C

Electrical Characteristics (T =25° C)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				2.8	V
Reverse Breakdown Voltage	V_{BR}	It = 1mA	3			V
Reverse Leakage Current	I_R	V_{RWM} =2.8V, T=25℃			1	μ A
Clamping Voltage	V_C	I_{PP} = 2A, t_P = 8/20μs			5.5	V
Clamping Voltage	V_C	I_{PP}=5A, t_P = 8/20μs			8.5	V
Junction Capacitance	C_J	V_R=0V, f = 1MHz		3	5	pF

Rating & Characteristic Curves

Figure 1- Power Derating Curve

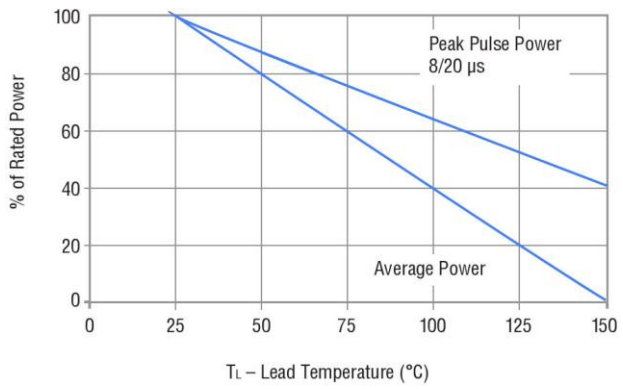


Figure 2- Clamping Voltage vs Current

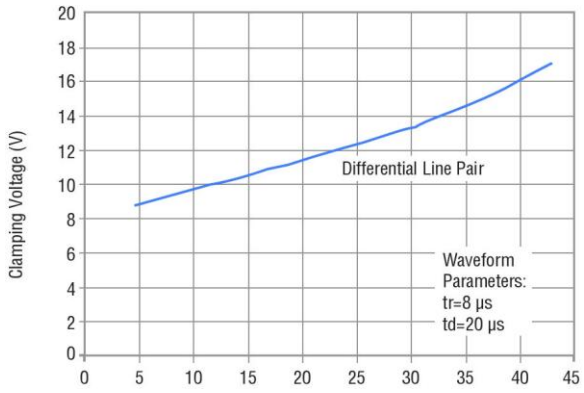


Figure 3- Typical Junction Capacitance

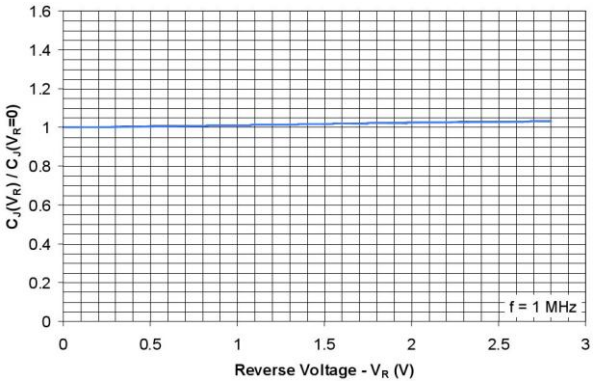


Figure 4- Pulse Waveform

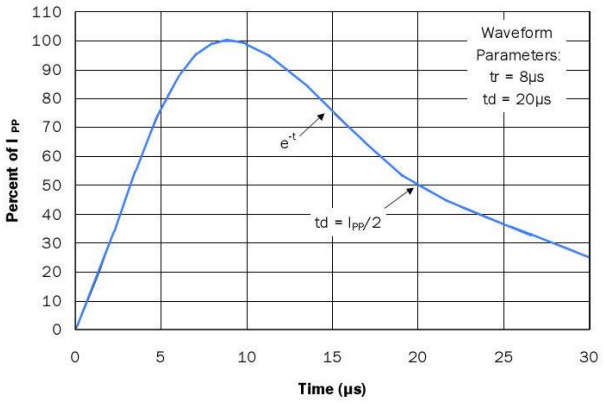


Figure 5- Peak Power Derating Curve

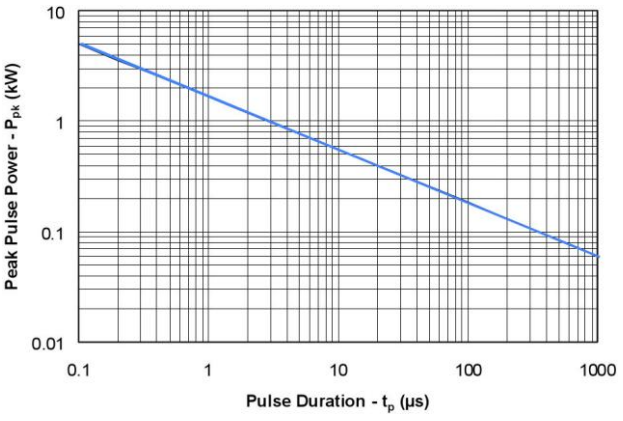
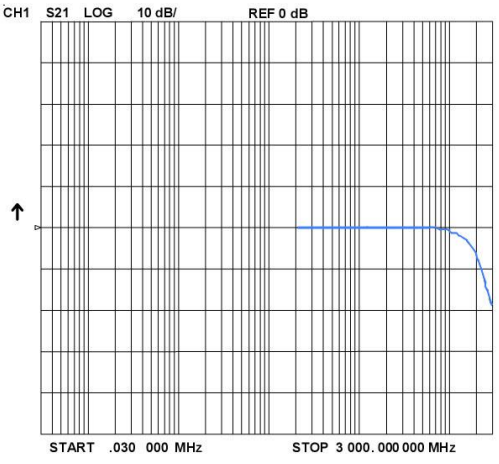
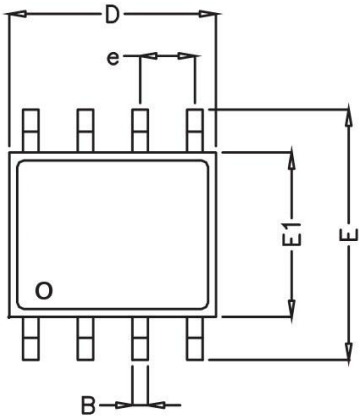
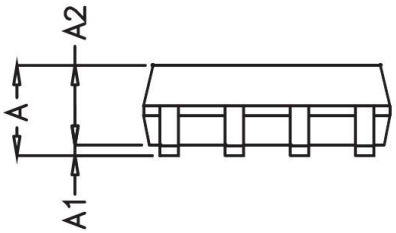


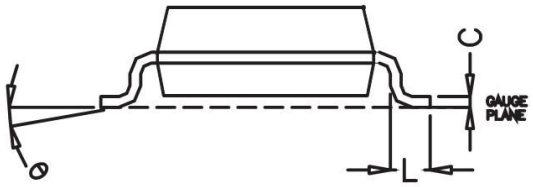
Figure 6- Insertion Loss

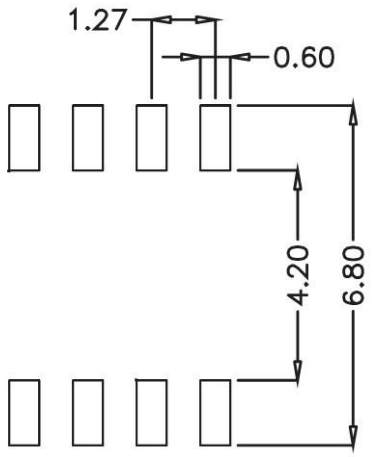


PACKAGE OUTLINE DIMENSIONS SO-8









DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.053	0.069	1.35	1.75
A1	0.004	0.010	0.10	0.25
A2	0.050	0.065	1.25	1.65
B	0.012	0.020	0.31	0.51
c	0.007	0.010	0.17	0.25
D	0.189	0.197	4.80	5.00
E	0.228	0.244	5.80	6.20
E1	0.150	0.157	3.80	4.00
e	0.050BSC		1.27BSC	
L	0.016	0.050	0.40	1.27

Disclaimer

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.