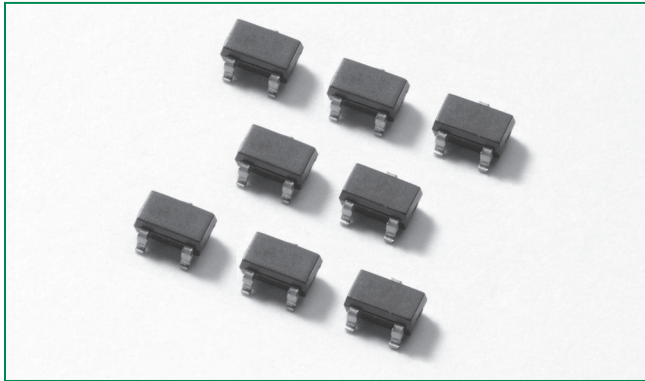
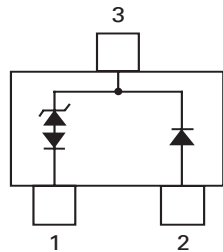


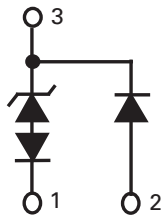
SPLV2.8 Series 2.8V 50A TVS Array



Pinout



Functional Block Diagram



Description

The SPLV2.8 was designed to protect low voltage, CMOS devices from ESD and lightning induced transients. There is a compensating diode in parallel with the low voltage TVS to protect one unidirectional line or a high speed data pair when two devices are paired together. These robust structures can safely absorb repetitive ESD strikes at $\pm 30\text{kV}$ (contact discharge) per the IEC61000-4-2 standard and each structure can safely dissipate up to 40A (IEC61000-4-5, $t_p=8/20\mu\text{s}$) with very low clamping voltages.

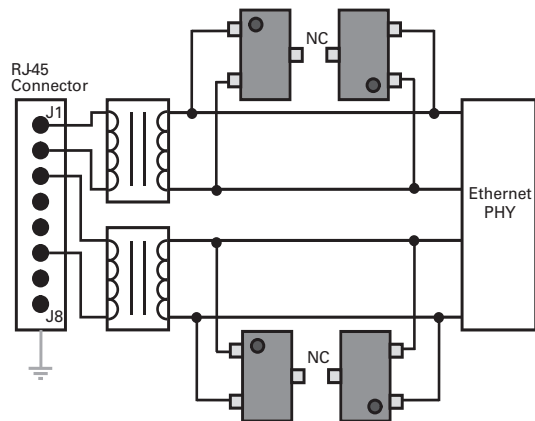
Features

- ESD, IEC61000-4-2, $\pm 30\text{kV}$ contact, $\pm 30\text{kV}$ air
- EFT, IEC61000-4-4, 40A (5/50ns)
- Lightning, IEC61000-4-5, 40A (8/20 μs)
- Low capacitance of 2pF per line (Pin 2 to 1)
- Low leakage current of 1 μA (MAX) at 2.8V
- Small SOT23-3 package saves board space

Applications

- 10/100/1000 Ethernet
- WAN/LAN Equipment
- Switching Systems
- Desktops, Servers, and Notebooks
- Analog Inputs
- Base Stations

Application Example



See Application Example Detail section on page 135 for more information

SPLV2.8

Electrical Characteristics (T_{OP} = 25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Reverse Standoff Voltage	V _{RWM}	I _R ≤ 1μA			2.8	V
Reverse Breakdown Voltage	V _{BR}	I _T = 2μA	3.0			V
Snap Back Voltage	V _{SB}	I _T = 50mA	2.8			V
Reverse Leakage Current	I _{LEAK}	V _R = 2.8V (Pin 2 or 3 to 1)			1	μA
Clamping Voltage ¹	V _C	I _{PP} = 5A, t _p = 8/20μs (Pin 3 to 1)		5.7	7.0	V
Clamping Voltage ¹		I _{PP} = 24A, t _p = 8/20μs (Pin 3 to 1)		8.3	12.5	V
Clamping Voltage ¹		I _{PP} = 5A, t _p = 8/20μs (Pin 2 to 1)		7.0	8.5	V
Clamping Voltage ¹		I _{PP} = 24A, t _p = 8/20μs (Pin 2 to 1)		13.9	15.0	V
Dynamic Resistance	R _{DYN}	(V _{C2} - V _{C1}) / (I _{PP2} - I _{PP1}) (Pin 2 to 1)		0.4		Ω
ESD Withstand Voltage ¹	V _{ESD}	IEC61000-4-2 (Contact)	±30			kV
		IEC61000-4-2 (Air)	±30			kV
Diode Capacitance ¹	C _D	V _R = 0V, f = 1MHz (Pin 2 to 1)		2.0	2.5	pF

Note: ¹Parameter is guaranteed by design and/or device characterization.

Absolute Maximum Ratings

Parameter	Rating	Units
Peak Pulse Power (t _p = 8/20μs)	600	W
Peak Pulse Current (t _p = 8/20μs)	40	A
Operating Temperature	-40 to 85	°C
Storage Temperature	-60 to 150	°C

CAUTION: Stresses above those listed in "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress only rating and operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied.

Figure 1: Capacitance vs. Reverse Voltage

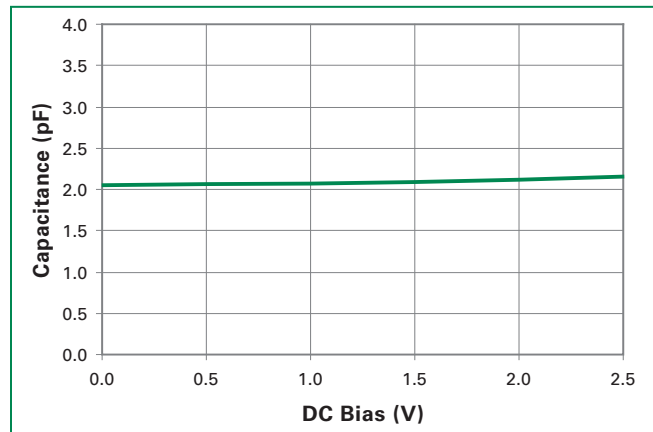


Figure 2: Clamping Voltage vs. I_{PP}

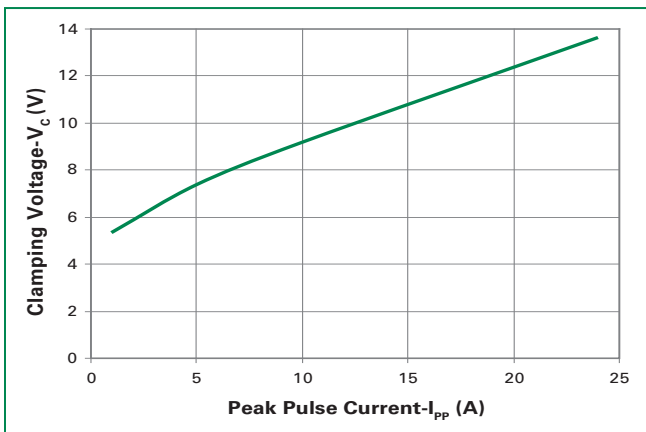
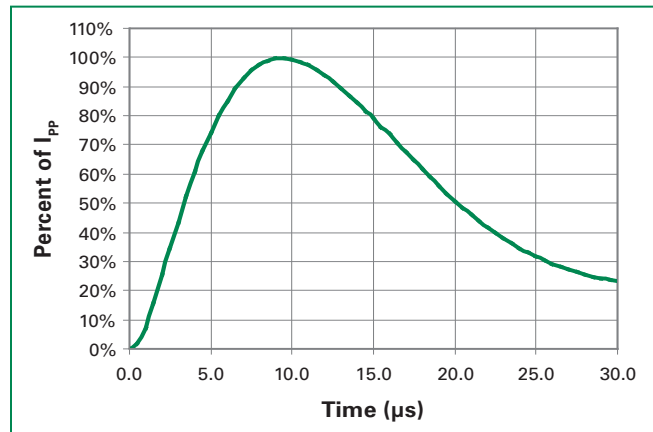
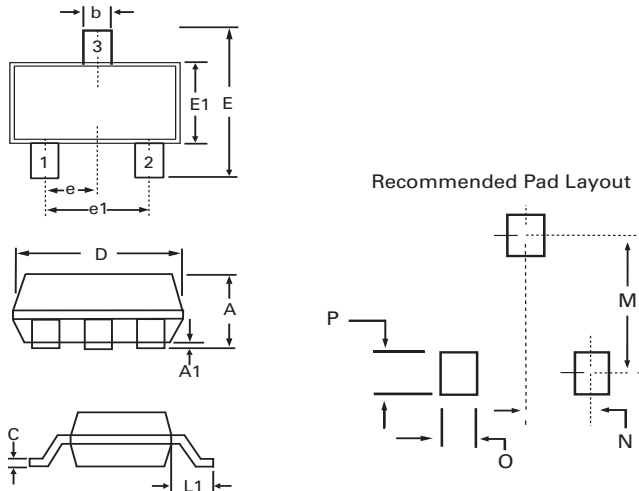


Figure 3: Pulse Waveform

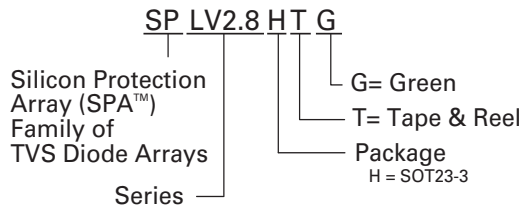


Package Dimensions – SOT-23

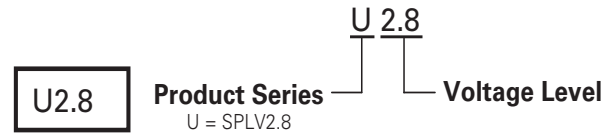


Package	SOT23-3			
Pins	3			
JEDEC	TO-236			
	Millimetres		Inches	
	Min	Max	Min	Max
A	0.89	1.12	0.035	0.044
A1	0.01	0.1	0.0004	0.004
b	0.3	0.5	0.012	0.020
c	0.08	0.2	0.003	0.008
D	2.8	3.04	0.110	0.120
E	2.1	2.64	0.083	0.104
E1	1.2	1.4	0.047	0.055
e	0.95 BSC		0.038 BSC	
e1	1.90 BSC		0.075 BSC	
L1	0.54 REF		0.021 REF	
M		2.29		.90
N		0.95		0.038
O		0.78		0.30 TYP
P		0.78		0.30 TYP

Part Numbering System



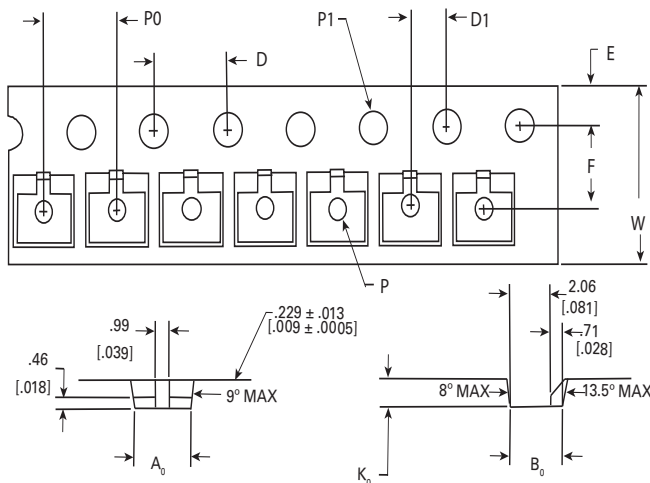
Part Marking System



Ordering Information

Part Number	Package	Marking	Min. Order Qty.
SPLV2.8HTG	SOT23-3	U2.8	3000

Embossed Carrier Tape & Reel Specification – SOT23-3 Package



Symbol	Millimetres		Inches	
	Min	Max	Min	Max
A0	3.05	3.25	0.12	0.128
B0	2.67	2.87	0.105	0.113
D	3.9	4.1	0.153	0.161
D1	1.95	2.05	0.788	0.792
E	1.65	1.85	0.065	0.073
F	3.45	3.55	0.136	0.14
K0	1.12	1.32	0.476	0.484
P	0.95	1.05	0.037	0.041
P0	3.9	4.1	0.153	0.161
P1		1.6		0.063
W	7.9	8.3	0.311	0.327