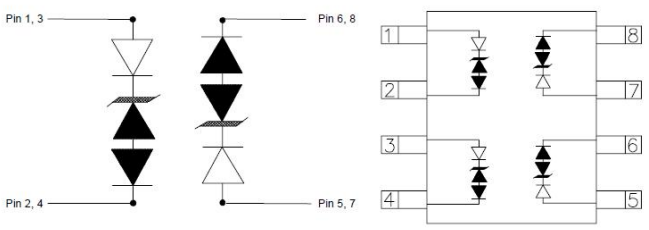
Description

The SLV2.8-4L is designed to protect low voltage, CMOS semiconductors from transients caused by electrostatic discharge (ESD), cable discharge events (CDE), lightning and other induced voltage surges. Low capacitance compensation diode is integrated into the TVS to lower the typical capacitance to 1pf per line. The SLV2.8-4L complies with the IEC 61000-4-2 (ESD) standard with ±30kV air and ±30kV contact discharge. The SLV2.8-4L is assembled into a 8-pin lead-free SO-8 package, The combination of low leakage, signal integrity and flow through design makes the SLV2.8-4L an ideal application such as 10/100/1000 Ethernet.

Features

- 600W peak pulse power (8/20 μ s)
- Protects two line pairs (four lines)
- Ultra low leakage: nA level
- Low operating voltage: 2.8V
- Very low capacitance: 1pF
- Ultra low clamping voltage
- JEDEC SO-8 package
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±30kV
    - Contact discharge: ±30kV
  - – IEC61000-4-4 (EFT) 40A (5/50ns)
  - – IEC61000-4-5 (Lightning) 25A (8/20us)
- RoHS Compliant

Dimensions & Symbol（Unit: mm Max）



Circuit and Pin Schematic SO-8 Outline

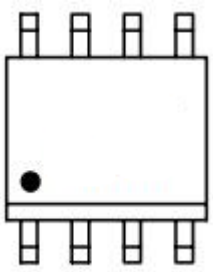
Mechanical Characteristics

- Package: SO-8
- Lead Finish: NiPdAu
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

- Base Station
- Analog Inputs
- Switch Systems
- 10/100/1000 Ethernet
- WAN/LAN Equipment
- Desktops, Servers, and Notebooks
- Low Voltage Interfaces

Marking Information



Dot denotes Pin1

Details marking code reference customer approval list

Ordering Information

Part Number	Packaging	Reel Size
SLV2.8-4L	2500/Tape & Reel	13 inch

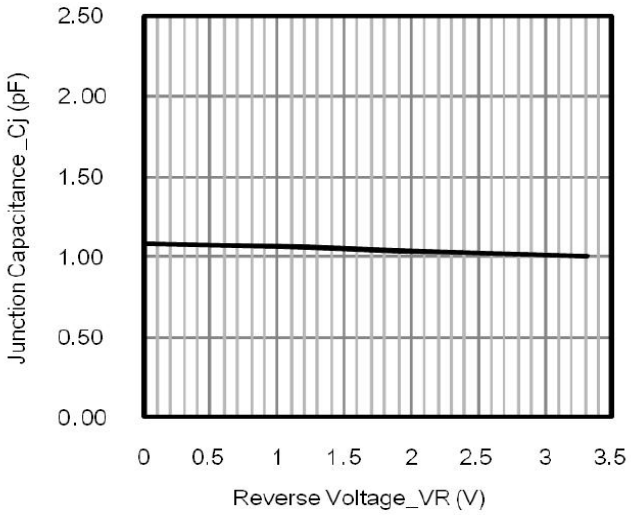
Absolute Maximum Ratings (T_A=25ºC, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20μs waveform)	P_{ppp}	600	W
Peak Pulse Current (8/20μs)	Ipp	25	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	VESD	±30 ±30	kV
Operating Temperature Range	TJ	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

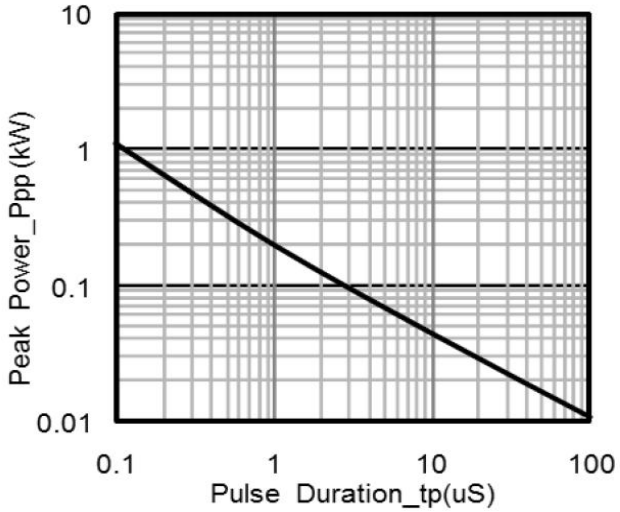
Electrical Characteristics (T_A=25℃)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			2.8	V	
Breakdown Voltage	VBR	3.0			V	IT = 2uA
Reverse Leakage Current	I_R			1.0	μA	VRWM = 2.8V
Clamping Voltage	VC			5	V	IPP = 2A (8 x 20μs pulse)
Clamping Voltage	VC			8	V	IPP = 5A (8 x 20μs pulse)
Clamping Voltage	VC			24	V	IPP = 25A (8 x 20μs pulse)
Junction Capacitance	CJ		1	3	pF	VR=0V, f=1MHZ

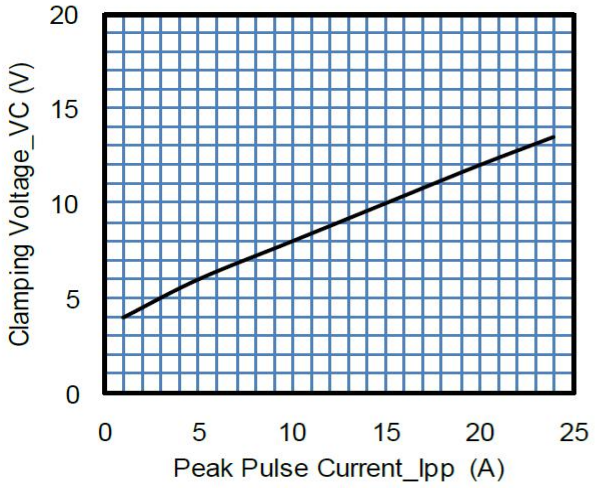
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



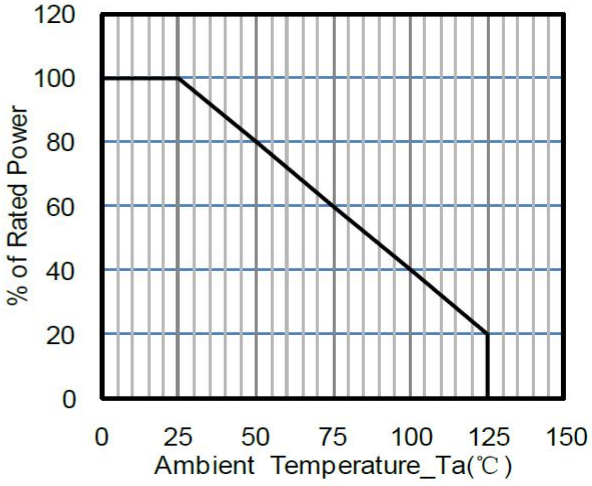
Junction Capacitance vs. Reverse Voltage



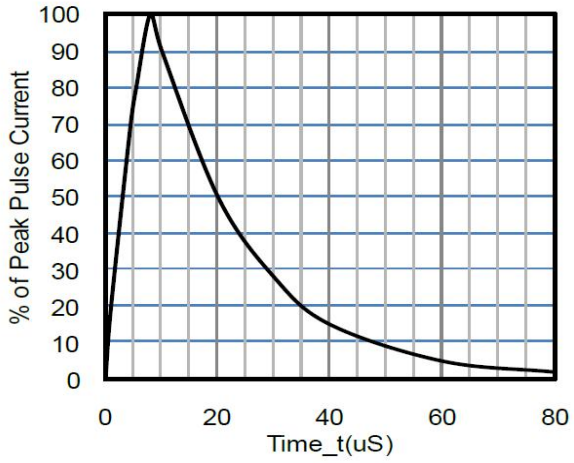
Peak Pulse Power vs. Pulse Time



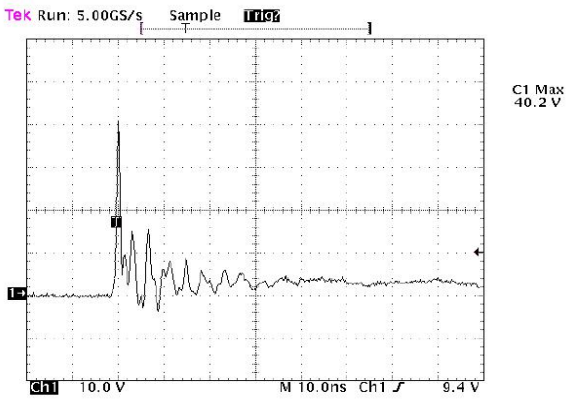
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20us Pulse Waveform

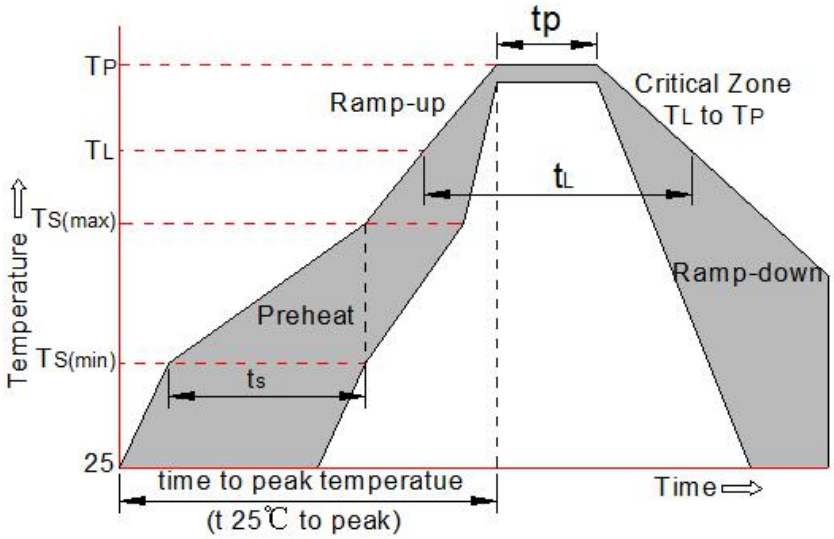


ESD Clamping Voltage

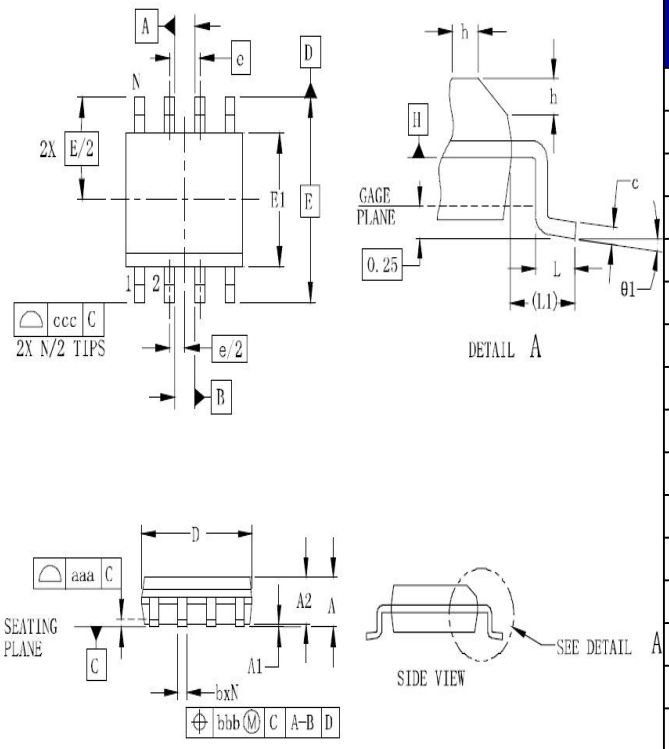
8 kV Contact per IEC61000-4-2

Soldering Parameters

Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L) (Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃

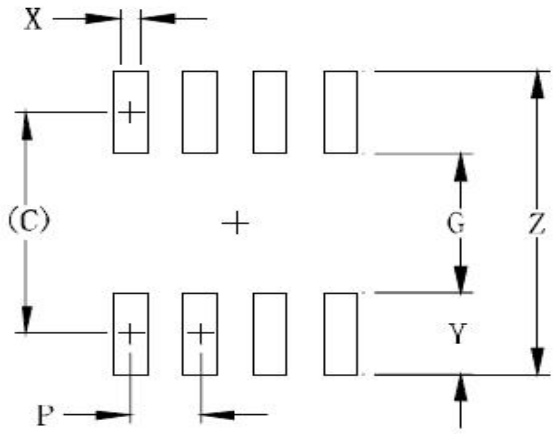


Package Mechanical Data



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.35		1.75	0.053		0.069
A1	0.10		0.25	0.004		0.010
A2	1.25		1.65	0.049		0.065
b	0.31		0.51	0.012		0.020
c	0.17		0.25	0.007		0.010
D	4.80	4.90	5.00	0.189	0.193	0.197
E1	3.80	3.90	4.00	0.150	0.154	0.157
E	6.00BSC			0.236BSC		
e	1.27BSC			0.050BSC		
h	0.25		0.50	0.010		0.020
L	0.40	0.72	1.04	0.016	0.028	0.041
L1	(1.04)			(0.041)		
N	8			8		
∅1	0		8	0		8
	0.10			0.004		
	0.25			0.010		
H_E	0.20			0.008		

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	**(5.20)**	**0.205**
G	**3.00**	**0.118**
P	**1.27**	**0.050**
X	**0.60**	**0.024**
Y	**2.20**	**0.087**
Z	**7.40**	**0.291**