



## Low Capacitance 2.8V TVS Array For ESD and Latch-up Protection Diode

### Features

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

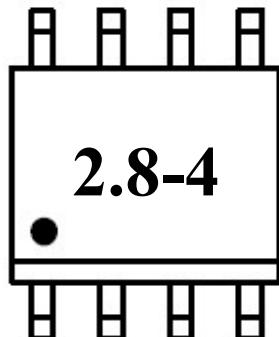
### Mechanical Data

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

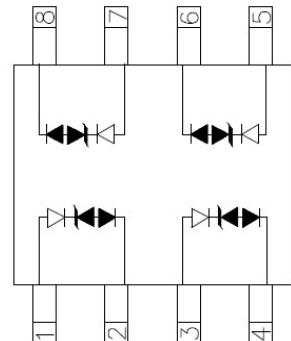
### Applications

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

### Marking

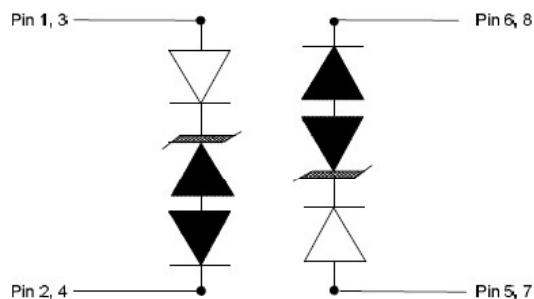


LC-3.3=Device Marking Code  
Dot denotes Pin1



SO-8 Outline

### Circuit and Pin Schematic



### Absolute Maximum Ratings (Ta= 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20us)	Ppk	600	W
Peak Pulse Current (8/20us)	I <sub>PP</sub>	25	A
ESD per IEC 61000-4-2 (Air)	V <sub>ESD</sub>	$\pm 30$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 30$	
Operating Junction Temperature Range	T <sub>J</sub>	-55 to +125	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°C

### Electrical Characteristics (Ta= 25°C unless otherwise specified)

Characteristic	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>	-	-	2.8	V	
Breakdown Voltage	V <sub>BR</sub>	3.0	-	-	V	I <sub>T</sub> = 2uA
Reverse Leakage Current	I <sub>R</sub>	-	-	1	uA	V <sub>RWM</sub> = 2.8V
Clamping Voltage	V <sub>C</sub>	-	-	5	V	I <sub>PP</sub> =2A (8×20us pulse)
Clamping Voltage	V <sub>C</sub>	-	-	8	V	I <sub>PP</sub> =5A (8×20us pulse)
Clamping Voltage	V <sub>C</sub>	-	-	24	V	I <sub>PP</sub> =25A (8×20us pulse)
Junction Capacitance	C <sub>J</sub>	-	5	-	pF	f=1MHz, V <sub>R</sub> =0V



Ratings and Characteristics Curves (Ta=25°C unless otherwise noted)

Fig.1 Power Derating Curve

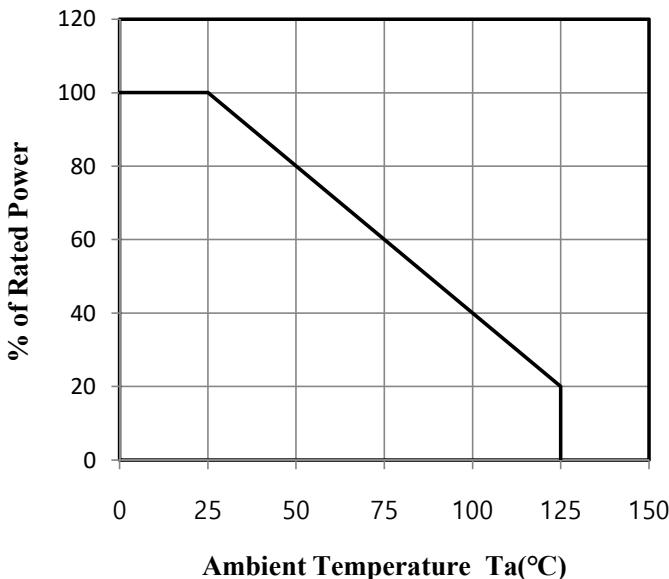


Fig.2 Peak Pulse Power vs. Pulse Time

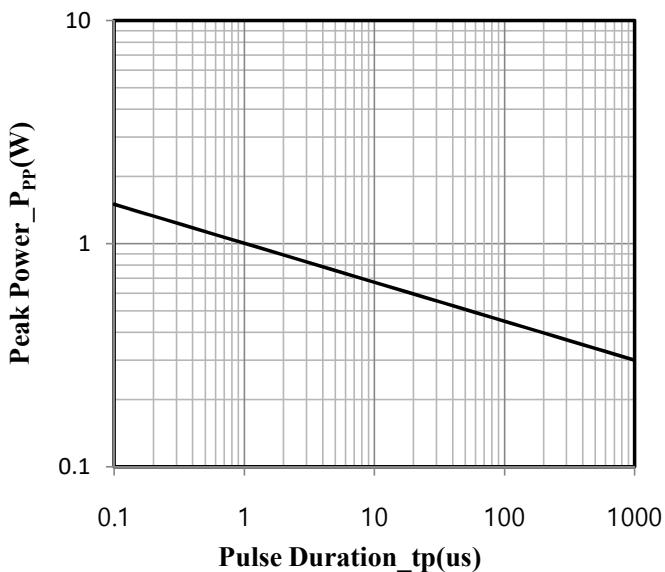


Fig.3 Clamping Voltage vs. Peak Pulse Current ( $t_p=8/20\mu s$ )

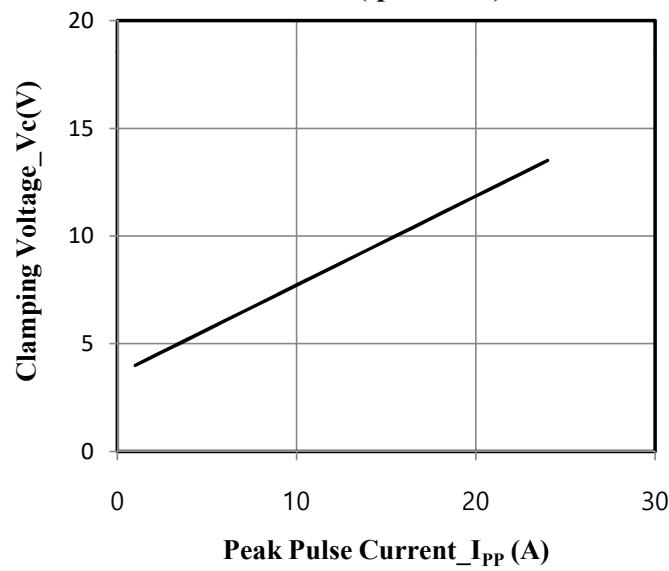


Fig.4 Junction Capacitance vs. Reverse Voltage

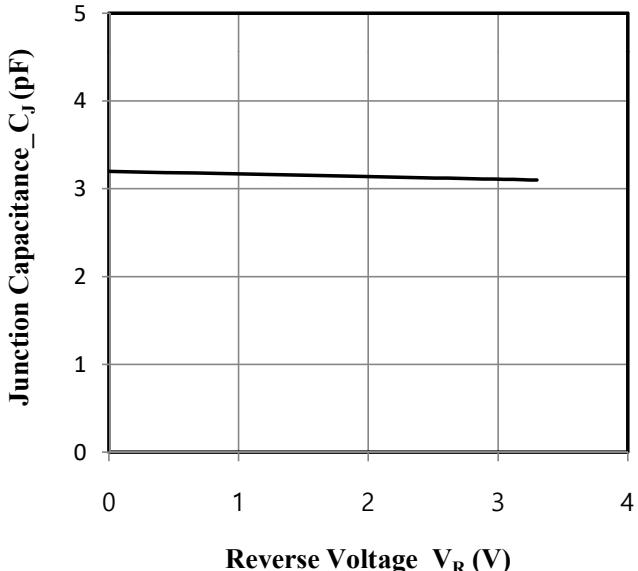


Fig.5 8 × 20μs Pulse Waveform

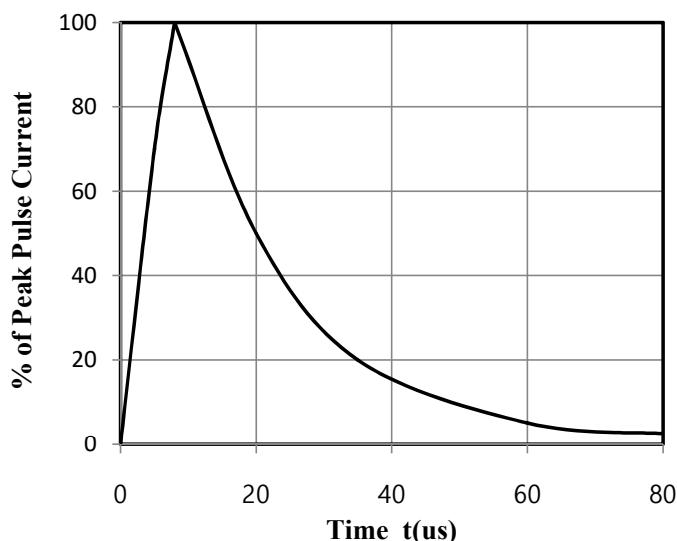
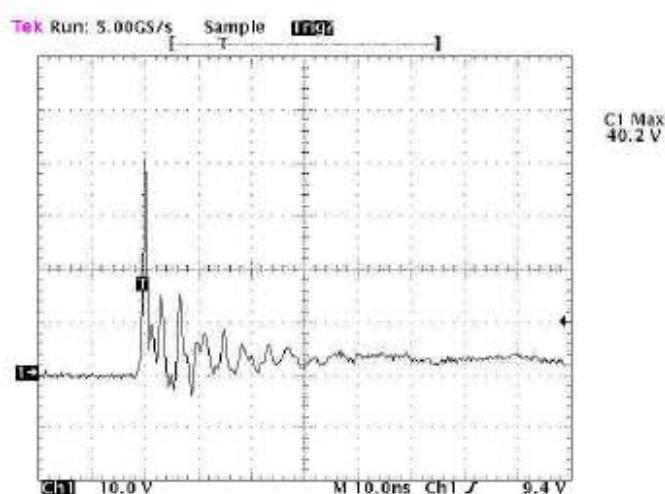


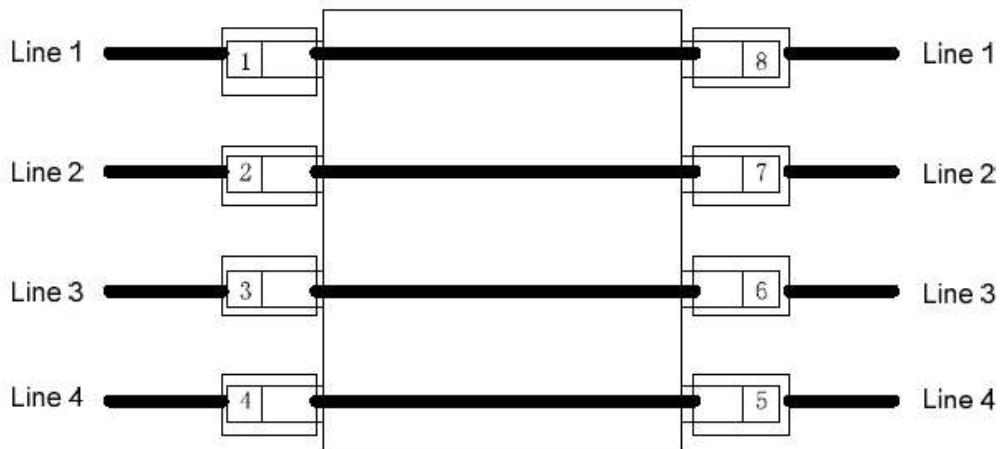
Fig. 6 ESD Clamping Voltage 8kV Contact per IEC61000-4-2





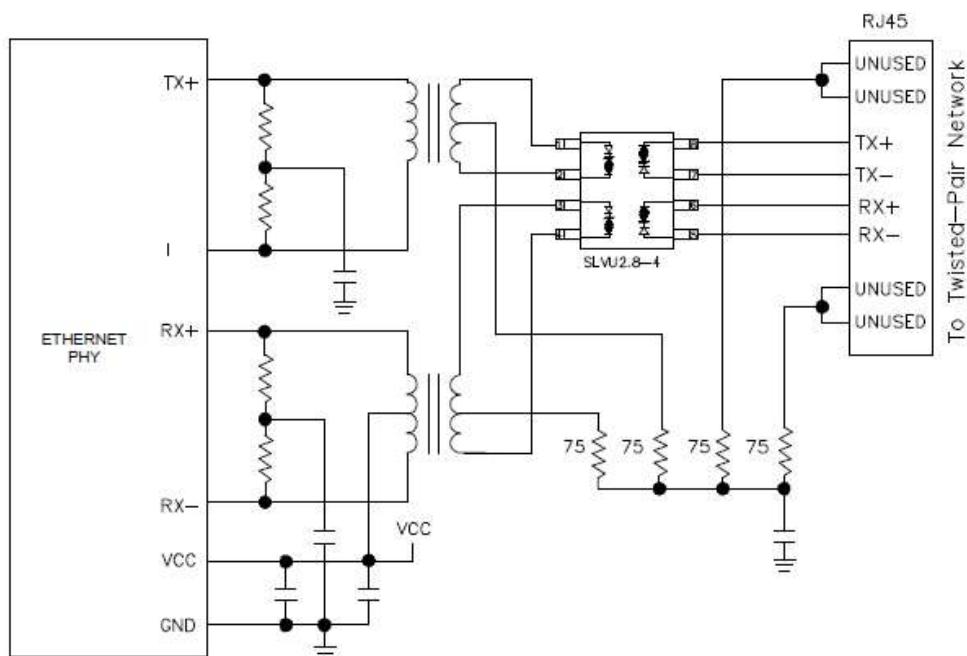
## Typical Application

The SLVU2.8-4 is designed such that the data lines are routed through the device. The first line pair enters at pins 1 and 2 and exit at pins 8 and 7 respectively. The second line pair enters at pins 3 and 4 and exits at pins 6 and 5. The traces must be connected at the bottom of the device as shown.



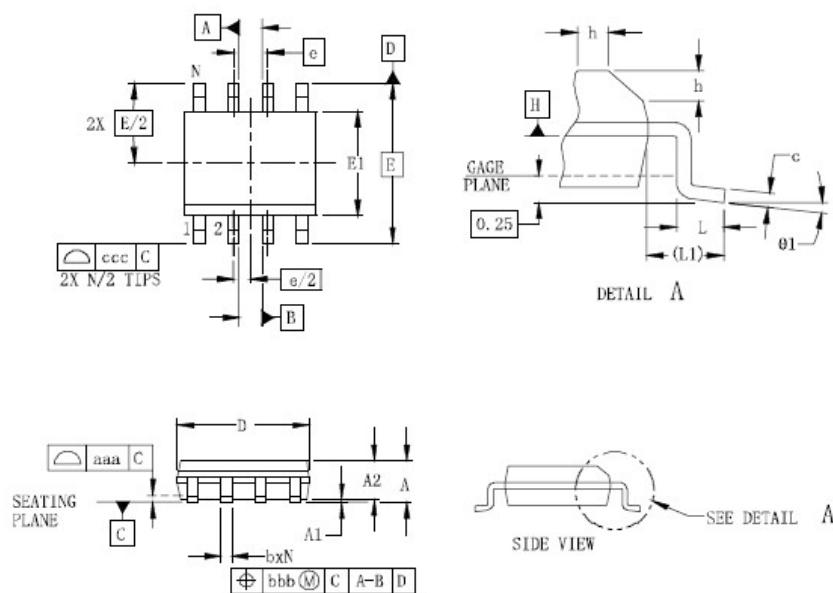
Low capacitance protection of two differential line pairs

## SLVU2.8-4 on Ethernet Application



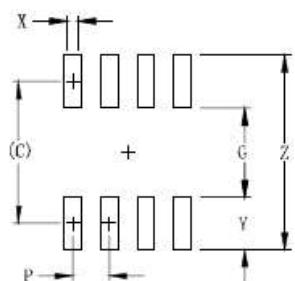


### SO-8 Package Outline Drawing



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	6.00 BSC			0.236 BSC		
e	1.27 BSC			0.050 BSC		
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		
θ1	0°		8°	0°		8°
aaa	0.10			0.004		
bbb	0.25			0.010		
ccc	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