



# THE DATASHEET OF SLVU2.8-4



## SLVU2.8-4 Low Voltage TVS Diode Array

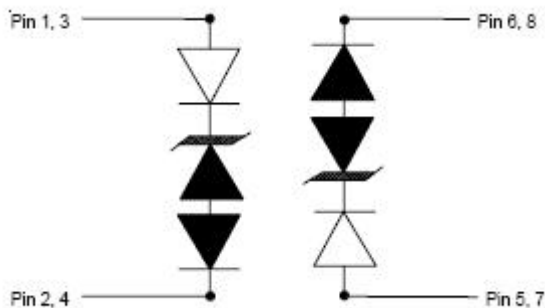


### Description

The SLVU2.8-4 TVS diode is a low capacitance TVS(Transient Voltage Suppressor) device designed to protect low voltage components such as Ethernet transceivers, laser diodes, ASICs, and high-speed RAM from transients caused by electrostatic discharge(ESD), cable discharge events(CDE), lightning and other induced voltage surges.

The SLVU2.8-4 is in an SO-8 package and can be used to protect two high-speed line pair. 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.

### Circuit Diagram



### Mechanical Characteristics

- SO-8 package
- Marking: Part number, date code
- Packaging: Tape and Reel
- Molding compound flammability rating: UL 94V-0

### Features

- 600 Watts peak pulse power( $t_p=8/20\mu s$ )
- Transient protection for high speed data lines  
IEC 61000-4-2(ESD) $\pm 15KV$ (air), $\pm 8KV$ (contact)  
IEC 61000-4-4(EFT) 40A (5/50ns)  
IEC 61000-4-5(Lightning) 30A (8/20us)
- Low capacitance
- Low leakage current
- Low operating and clamping voltages
- Protects two line pairs(four lines)

### Applications

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

### Ordering Information:

| Device    | Package       | Shipping      |
|-----------|---------------|---------------|
| SLVU2.8-4 | SO-8(Pb-Free) | 3000pcs/ reel |

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

### Maximum Ratings

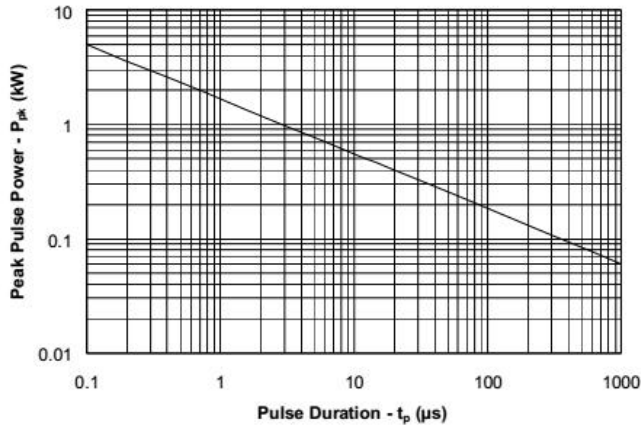
| Characteristics                | Symbol           | Max.            | Units |
|--------------------------------|------------------|-----------------|-------|
| Peak Pulse Power (tp=8/20us)   | P <sub>PK</sub>  | 600             | Watts |
| Peak Pulse Current (tp=8/20us) | I <sub>PP</sub>  | 30              | A     |
| ESD per IEC61000-4-2 (air)     | V <sub>ESD</sub> | 25              | KV    |
| ESD per IEC61000-4-2 (contact) |                  | 15              |       |
| Lead Soldering Temperature     | T <sub>L</sub>   | 260(10 seconds) | °C    |
| Operating Temperature          | T <sub>J</sub>   | -55 to +125     | °C    |
| Storage Temperature            | T <sub>STG</sub> | -55 to +150     | °C    |

### Electrical Characteristics

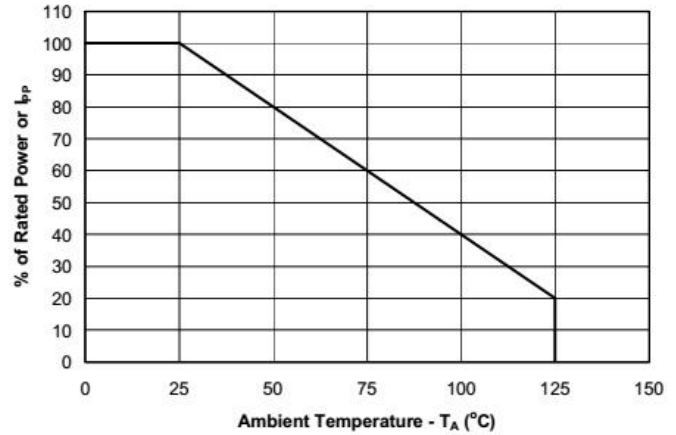
| Characteristics           | Symbol           | Condition                                      | Min. | Typ. | Max. | Units |
|---------------------------|------------------|--|------|------|------|-------|
| Reverse Stand-Off Voltage | V <sub>RWM</sub> |  |      |      | 2.8  | V     |
| Punch-Through Voltage     | V <sub>PT</sub>  | I <sub>PT</sub> =2uA                           | 3.0  |      |      | V     |
| Snap-Back Voltage         | V <sub>SB</sub>  | I <sub>SB</sub> =50mA                          | 2.8  |      |      | V     |
| Reverse Leakage Current   | I <sub>R</sub>   | V <sub>RWM</sub> =2.8V, T=25°C<br>(Each Line)  |      | 0.01 | 1    | uA    |
| Clamping Voltage          | V <sub>C</sub>   | I <sub>PP</sub> =5A, tp=8/20us<br>(Each Line)  |      |      | 8.5  | V     |
| Clamping Voltage          | V <sub>C</sub>   | I <sub>PP</sub> =10A, tp=8/20us<br>(Each Line) |      |      | 12   | V     |
| Clamping Voltage          | V <sub>C</sub>   | I <sub>PP</sub> =30A, tp=8/20us<br>(Each Line) |      |      | 20   | V     |
| Junction Capacitance      | C <sub>J</sub>   | V <sub>R</sub> =0V, f=1MHz<br>(Each Line)      |      | 5    |      | pF    |

**Ratings and Characteristics Curves**

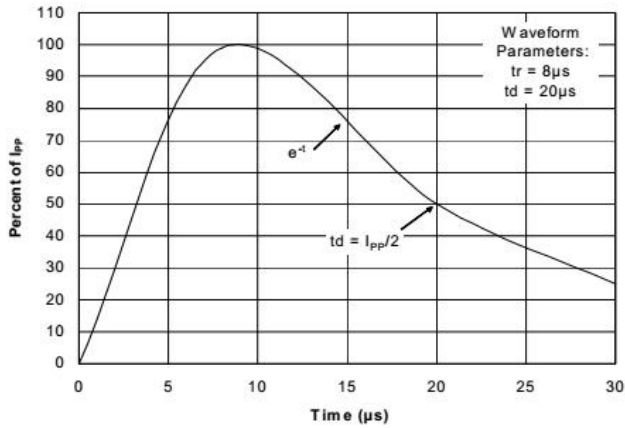
**Non-Repetitive Peak Pulse Power vs. Pulse Time**



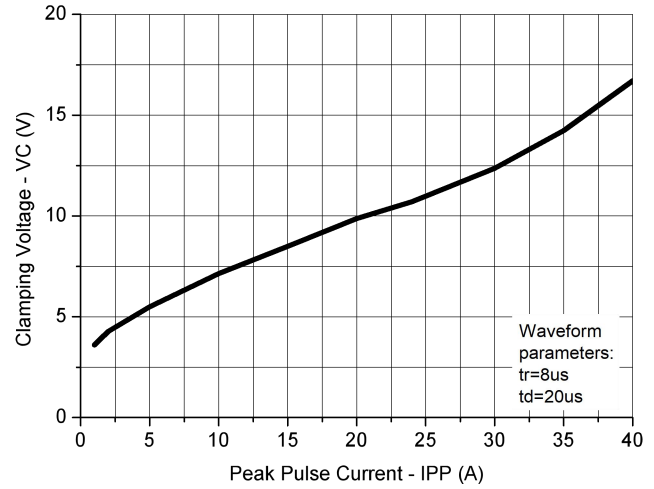
**Power Derating Curve**



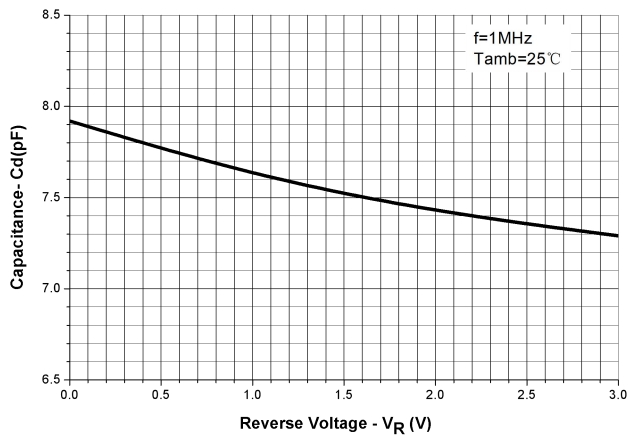
**Pulse Waveform**



**Clamping Voltage vs. Peak Pulse Current**

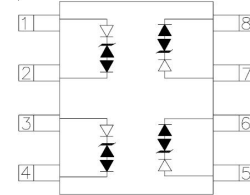


**Capacitance vs. Reverse Voltage**

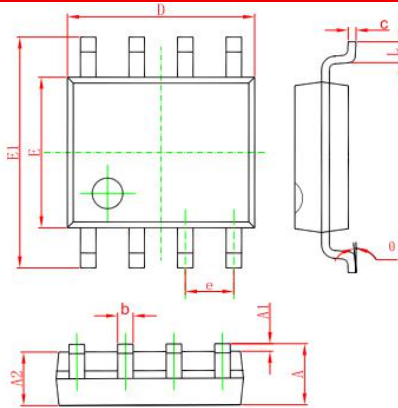


**Circuit Diagram**

The SLVU2.8-4 is designed to protect four data lines of sensitive components from damage and latch-up which may result from transients. Data line I/Os are connected at pin 1 and 2, 3 and 4, 5 and 6, 7 and 8.  
The SLVU2.8-4 is also designed to protect two high-speed line pair. The line pairs enter at pins 1 and 2, pin 3 and 4, and exit at pin 8 and 7, pin 6 and 5.

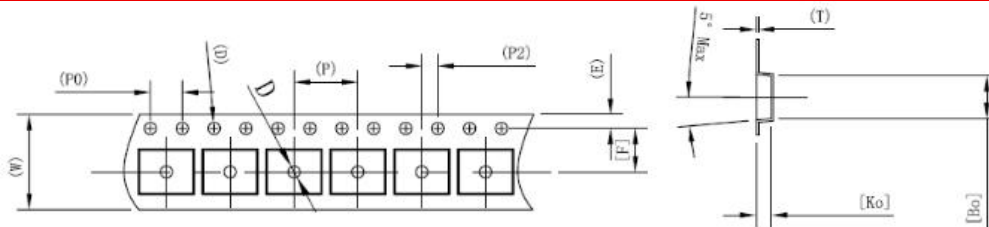


**Mechanical Dimensions**



| 字符 | Dimension In Millimeters |       |
|----|--------------------------|-------|
|    | Min                      | Max   |
| A  | 1.500                    | 1.700 |
| A1 | 0.040                    | 0.120 |
| A2 | 1.350                    | 1.550 |
| b  | 0.300                    | 0.500 |
| c  | 0.190                    | 0.250 |
| D  | 4.800                    | 5.000 |
| E  | 3.840                    | 4.040 |
| E1 | 5.900                    | 6.100 |
| e  | 1.27 (BSC)               |       |
| L  | 0.520                    | 0.720 |
| θ  | 0°                       | 8°    |

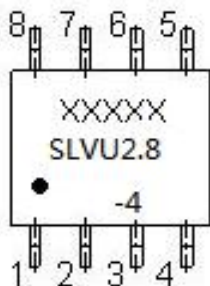
**Carrier Tape Specification**



| ITEM | W              | A0    | A1    | B0    | B1    | K0    | K1    | E     | F     | P     | P0    | P2    | D0             | D1             | T     |
|------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|----------------|-------|
| DIM  | 12.0           | 6.55  | 0.00  | 5.40  | 0.00  | 1.90  | 0.00  | 1.75  | 5.50  | 8.0   | 4.0   | 2.0   | 1.50           | 1.50           | 0.25  |
| TOLE | +0.30<br>-0.30 | ±0.10 | ±0.10 | ±0.10 | ±0.10 | ±0.10 | ±0.10 | ±0.10 | ±0.10 | ±0.10 | ±0.10 | ±0.10 | +0.10<br>-0.00 | +0.10<br>-0.00 | ±0.05 |

unit: mm

**Marking Diagram**



Where XXXXX is YYWWL

SLVU2.8-4 = Part Number  
YY = Year  
WW = Week  
L = Lot Number

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