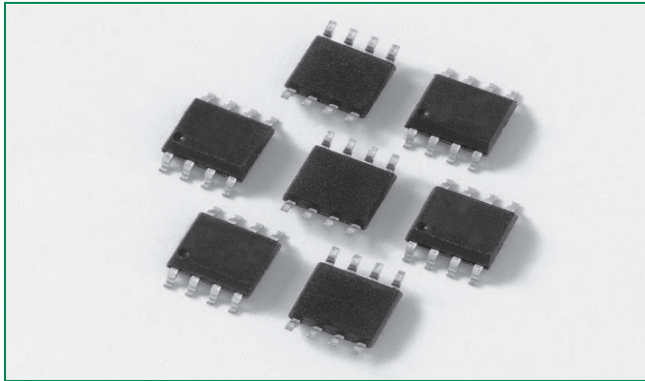
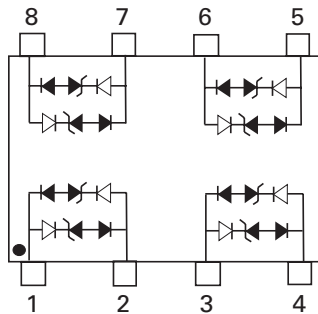


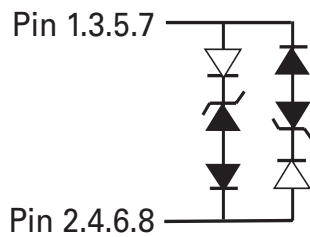
SLVU2.8-8 Series 2.8V 30A TVS Array



Pinout



Functional Block Diagram



Description

The SLVU2.8-8 was designed to protect low voltage, CMOS devices from ESD and lightning induced transients. There is a compensating diode in series with each low voltage TVS to present a low loading capacitance to the line being protected. These robust structures can safely absorb repetitive ESD strikes at $\pm 30\text{kV}$ (contact discharge) per IEC 61000-4-2 standard and can safely dissipate up to 30A (IEC 61000-4-5 2nd Edition, $t_p=8/20\mu\text{s}$) with very low clamping voltages.

Features

- ESD, IEC 61000-4-2, $\pm 30\text{kV}$ contact, $\pm 30\text{kV}$ air
- EFT, IEC 61000-4-4, 40A (5/50ns)
- Lightning, IEC 61000-4-5 2nd Edition, 30A (8/20 μs)
- Low capacitance of 2.6pF per line
- Low leakage current of 0.1 μA (MAX) at 2.8V
- SOIC-8 (JEDEC MO-012) pin configuration allows for protection of all 4 differential pair for 1GbE
- RoHS Compliant and Lead Free
- Moisture Sensitivity Level (MSL-1)

Applications

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

Additional Information



Datasheet



Resources



Samples

Absolute Maximum Ratings

| Parameter | Rating | Units |
|--|------------|-------|
| Peak Pulse Power ($t_p=8/20\mu s$) | 750 | W |
| Peak Pulse Current ($t_p=8/20\mu s$) | 30 | A |
| Operating Temperature | -40 to 125 | °C |
| Storage Temperature | -55 to 150 | °C |

Thermal Information

| Parameter | Rating | Units |
|---|------------|-------|
| Storage Temperature Range | -55 to 150 | °C |
| Maximum Junction Temperature | 150 | °C |
| Maximum Lead Temperature (Soldering 20-40s) | 260 | °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.

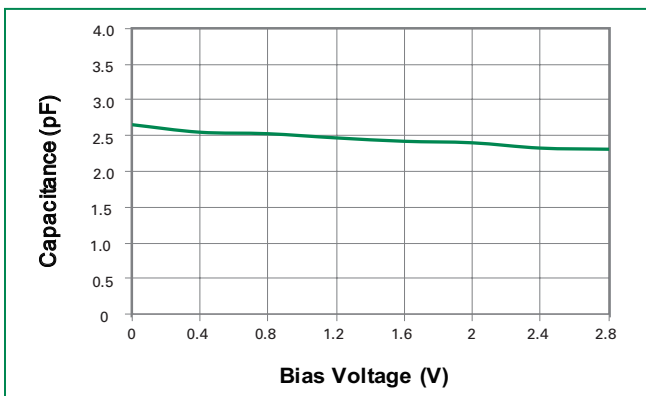
Electrical Characteristics ($T_{op} = 25^\circ C$)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Units |
|------------------------------------|------------|---|----------|-----|-----|----------|
| Reverse Standoff Voltage | V_{RWM} | $I_r \leq 1\mu A$ (Each Line) | | | 2.8 | V |
| Reverse Breakdown Voltage | V_{BR} | $I_r = 2\mu A$ (Each Line) | 3.0 | | | V |
| Snapback Voltage | V_{SB} | $I_{SB} = 50mA$ | 2.8 | | | V |
| Reverse Leakage Current | I_{LEAK} | $V_r = 2.8V$ (Each Line) | | | 0.1 | μA |
| Clamping Voltage ¹ | V_C | $I_{PP} = 5A, t_p = 8/20\mu s$ (Each Line) | | | 8.5 | V |
| | | $I_{PP} = 24A, t_p = 8/20\mu s$ (Each Line) | | | 17 | |
| ESD Withstand Voltage ¹ | V_{ESD} | IEC61000-4-2 (Contact) | ± 30 | | | kV |
| | | IEC61000-4-2 (Air) | ± 30 | | | |
| Dynamic Resistance ² | R_{DYN} | TLP $t_p = 100ns$, (Each Line) | | 0.3 | | Ω |
| Diode Capacitance ¹ | C_D | $V_r = 0V, f = 1MHz$ (Each Line) | | 2.6 | 3.0 | pF |

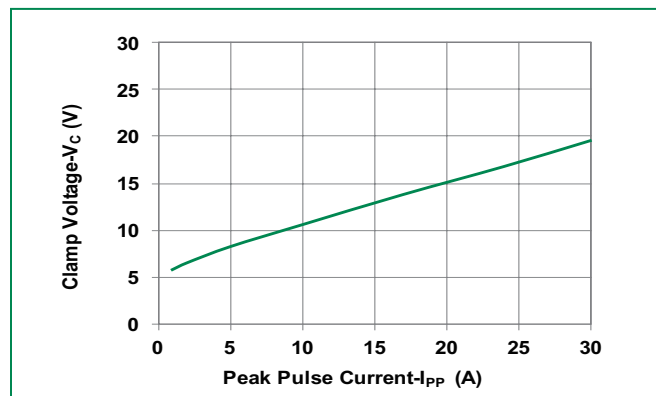
Note: 1 Parameter is guaranteed by design and/or device characterization.

2 Transmission Line Pulse (TLP) test setting : Std.TDR(50 Ω), $t_p = 100ns$, $t_r = 0.2ns$ ITLP and VTLP averaging window: star $t_1 = 70ns$ to end $t_2 = 80ns$

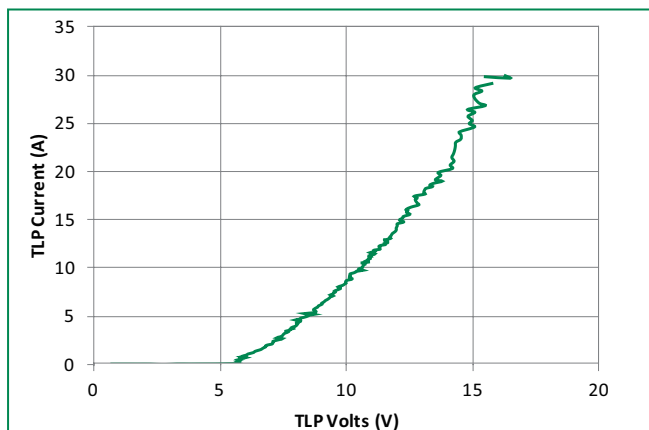
Capacitance vs. Reverse Bias (Each line)



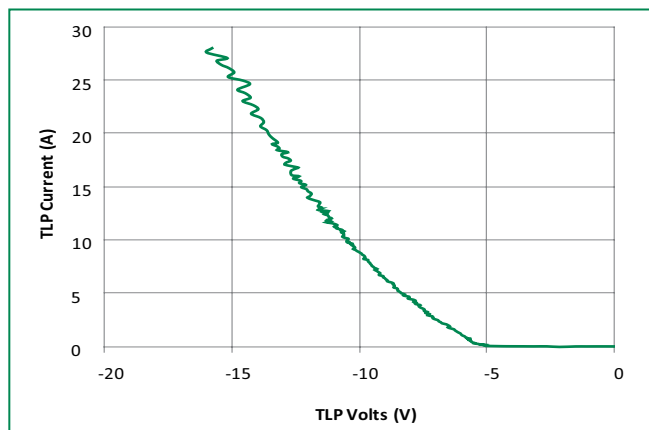
Clamping Voltage vs. Peak Pulse Current (Each line)



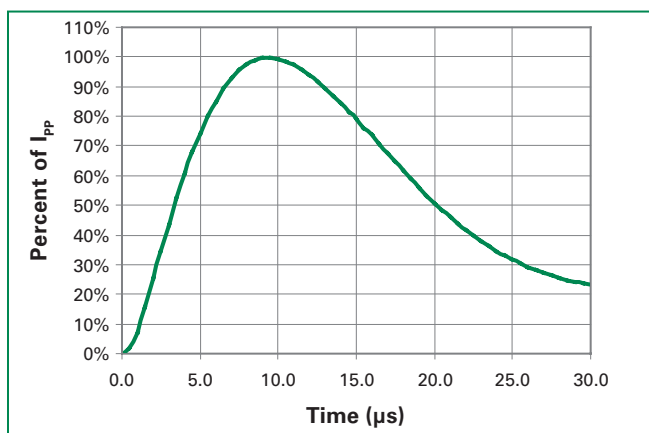
Positive Transmission Line Pulsing (TLP) Plot (Each line)



Negative Transmission Line Pulsing (TLP) Plot (Each line)



8/20 μs Pulse Waveform



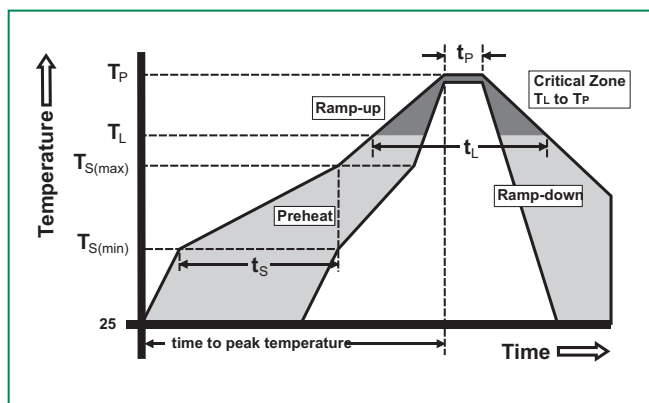
Product Characteristics

| | |
|---------------------------|----------------------------|
| Lead Plating | Matte Tin |
| Lead Material | Copper Alloy |
| Lead Coplanarity | 0.0004 inches (0.102mm) |
| Substrate material | Silicon |
| Body Material | V-0 per UL 94 Molded Epoxy |

- Notes :
1. All dimensions are in millimeters
 2. Dimensions include solder plating.
 3. Dimensions are exclusive of mold flash & metal burr.
 4. All specifications comply to JEDEC SPEC MO-203 Issue A
 5. Blo is facing up for mold and facing down for trim/form, i.e. reverse trim/form.
 6. Package surface matte finish VDI 11-13.

Soldering Parameters

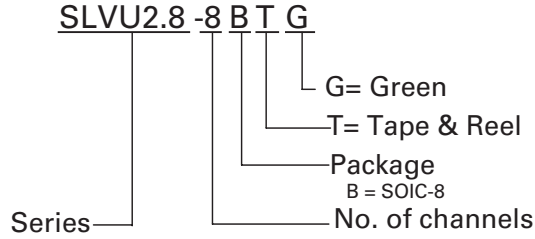
| | | |
|--|------------------------------------|-------------------------|
| Reflow Condition | | Pb – Free assembly |
| Pre Heat | - Temperature Min ($T_{s(min)}$) | 150°C |
| | - Temperature Max ($T_{s(max)}$) | 200°C |
| | - Time (min to max) (t_s) | 60 – 180 secs |
| Average ramp up rate (Liquidus) Temp (T_L) to peak | | 5°C/second max |
| $T_{s(max)}$ to T_L - Ramp-up Rate | | 5°C/second max |
| Reflow | - Temperature (T_L) (Liquidus) | 217°C |
| | - Temperature (t_L) | 60 – 150 seconds |
| Peak Temperature (T_p) | | 260 ^{+0/-5} °C |
| Time within 5°C of actual peak Temperature (t_p) | | 20 – 40 seconds |
| Ramp-down Rate | | 5°C/second max |
| Time 25°C to peak Temperature (T_p) | | 8 minutes Max. |
| Do not exceed | | 260°C |



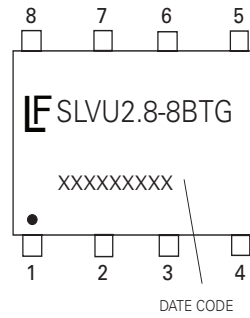
Ordering Information

| Part Number | Package | Min. Order Qty. |
|--------------|---------|-----------------|
| SLVU2.8-8BTG | SOIC-8 | 2500 |

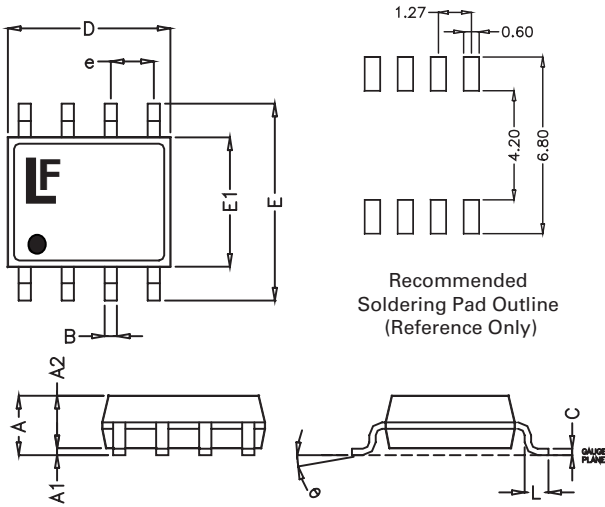
Part Numbering System



Part Marking System

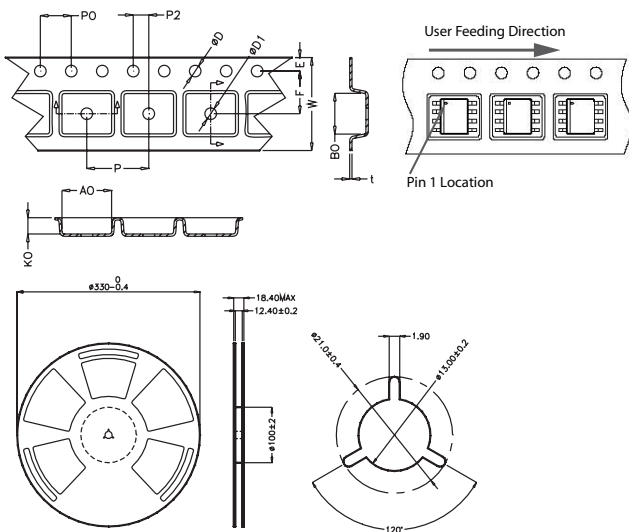


Package Dimensions – Mechanical Drawings and Recommended Solder Pad Outline



| Package | SOIC-8 | | | |
|-----------|-------------|------|-----------|-------|
| Pins | 8 | | | |
| JEDEC | MS-012 | | | |
| | Millimetres | | Inches | |
| | Min | Max | Min | Max |
| A | 1.35 | 1.75 | 0.053 | 0.069 |
| A1 | 0.10 | 0.25 | 0.004 | 0.010 |
| A2 | 1.25 | 1.65 | 0.050 | 0.065 |
| B | 0.31 | 0.51 | 0.012 | 0.020 |
| c | 0.17 | 0.25 | 0.007 | 0.010 |
| D | 4.80 | 5.00 | 0.189 | 0.197 |
| E | 5.80 | 6.20 | 0.228 | 0.244 |
| E1 | 3.80 | 4.00 | 0.150 | 0.157 |
| e | 1.27 BSC | | 0.050 BSC | |
| L | 0.40 | 1.27 | 0.016 | 0.050 |

Embossed Carrier Tape & Reel Specification – SOIC Package



| Symbol | Millimetres | | Inches | |
|-------------|---------------|------|-----------------|-------|
| | Min | Max | Min | Max |
| E | 1.65 | 1.85 | 0.065 | 0.073 |
| F | 5.4 | 5.6 | 0.213 | 0.22 |
| P2 | 1.9 | 2.1 | 0.075 | 0.083 |
| D | 1.5 | 1.6 | 0.059 | 0.063 |
| D1 | 1.50 Min | | 0.059 Min | |
| P0 | 3.9 | 4.1 | 0.154 | 0.161 |
| 10P0 | 40.0 +/- 0.20 | | 1.574 +/- 0.008 | |
| W | 11.9 | 12.1 | 0.468 | 0.476 |
| P | 7.9 | 8.1 | 0.311 | 0.319 |
| A0 | 6.3 | 6.5 | 0.248 | 0.256 |
| B0 | 5.1 | 5.3 | 0.2 | 0.209 |
| K0 | 2 | 2.2 | 0.079 | 0.087 |
| t | 0.30 +/- 0.05 | | 0.012 +/- 0.002 | |