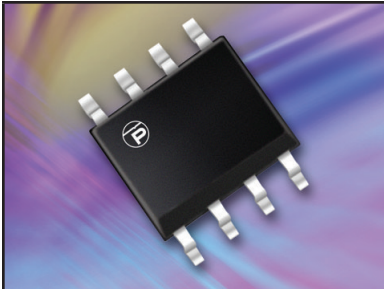


600 WATT MULTI-LINE ULTRA LOW CAPACITANCE TVS ARRAY



SO-8 PACKAGE

DESCRIPTION

The SLVU2.8-4LC is an ultra low capacitance TVS array that provides two line pairs of protection. This device protects high-frequency applications such as voice, video and data related systems and is designed to minimize the effects of high overshoot voltage experienced during and ESD event. This device has an in-line design, which reduces lead inductance thus providing lower overshoot voltage.

The SLVU2.8-4LC meets IEC 61000-4-2, IEC 61000-4-4 and IEC 61000-4-5 requirements. Packaged in an SO-8 configuration, this device is rated for 600 Watts Peak Pulse Power, for an 8/20 μ s waveform.

FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- Compatible with IEC 61000-4-4 (EFT): 40A - 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 24A, 8/20 μ s - Level 2(Line-Gnd) & Level 3(Line-Line)
- 600 Watts Peak Pulse Power per Line (tp = 8/20 μ s)
- Protects up to Two Line Pairs
- ESD Protection > 40 kilovolts
- Low Leakage Current < 10nA @ V_{wm} (Typical)
- Ultra Low Capacitance: 2pF (Maximum)
- RoHS Compliant
- REACH Compliant

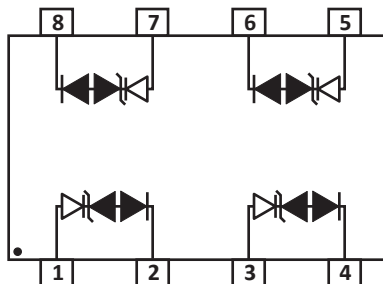
APPLICATIONS

- Ethernet - 10/100/1000 Base T
- SMART Phones
- Audio/Video Inputs
- Portable Electronics

MECHANICAL CHARACTERISTICS

- Molded JEDEC SO-8 Package
- Approximate Weight: 70 milligrams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
Pure-Tin - Sn, 100: 260-270°C
- 12mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

PIN CONFIGURATION



TYPICAL DEVICE CHARACTERISTICS
MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power (tp = 8/20μs) - See Figure 1	P_{PP}	600	Watts
Peak Pulse Current (tp = 8/20μs)	I_{PP}	30	Amps
Lead Soldering Temperature @ 10s	T_{II}	260	°C
Operating Temperature	T_L	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (Note 1)	DEVICE MARKING	RATED STAND-OFF VOLTAGE (Note 1) V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE (Note 1) @1mA $V_{(BR)}$ VOLTS	MINIMUM SNAPBACK VOLTAGE (Note 1) @ $I_{SB} = 50mA$ V_{SB} VOLTS	MAXIMUM CLAMPING VOLTAGE (Note 1) (Fig. 2) @ $I_{PP} = 10A$ V_C VOLTS	MAXIMUM CLAMPING VOLTAGE (Note 1) (Fig. 2) @ $I_{PP} = 24A$ V_C VOLTS	TYPICAL LEAKAGE CURRENT (Note 1) @ V_{WM} I_D μA	MAXIMUM LEAKAGE CURRENT (Note 1) @ V_{WM} I_D μA	TYPICAL CAPACITANCE (Note 1) @3V, 1MHz C pF	MAXIMUM CAPACITANCE (Note 1) @3V, 1MHz C pF
SLVU2.8-4LC	850QLC	2.8	3.0	2.8	12.0	18.0	0.01	0.1	1.5	2.0

NOTES

1. Device measured between pin 1 to pin 2, pin 3 to pin 4, pin 5 to pin 6 and pin 7 to pin 8.

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

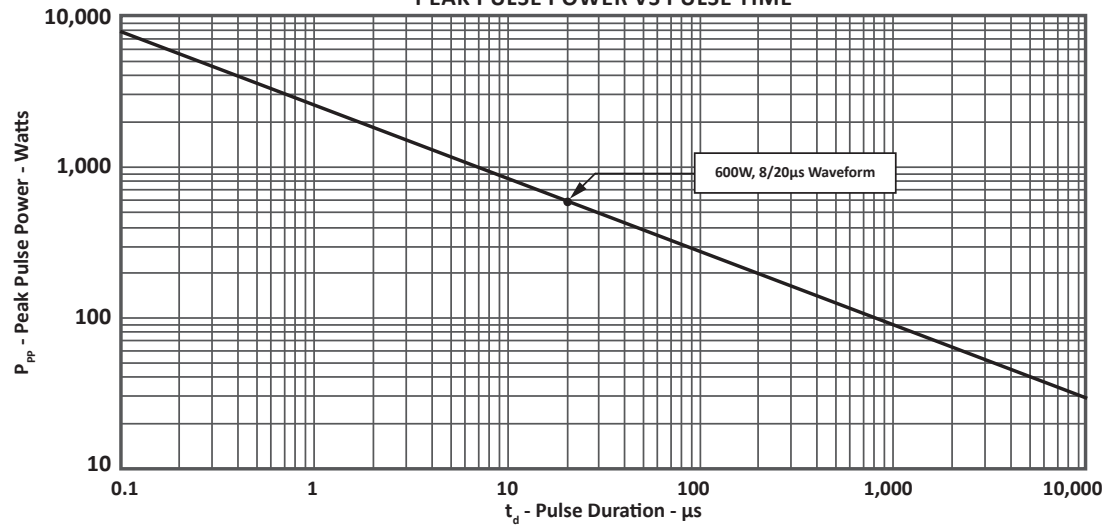
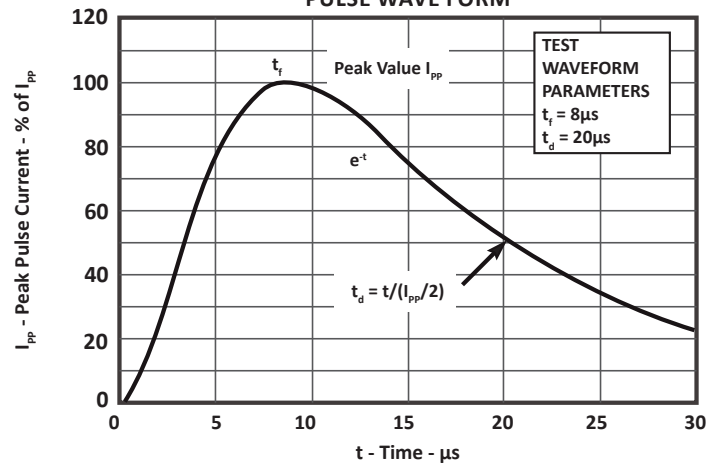
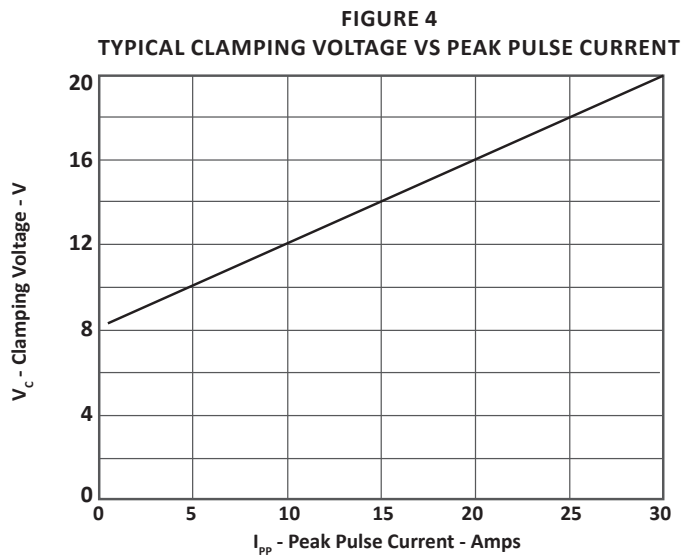
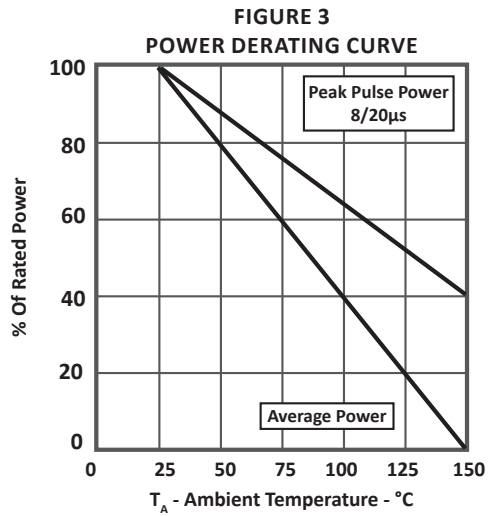


FIGURE 2
PULSE WAVE FORM



TYPICAL DEVICE CHARACTERISTICS



APPLICATION INFORMATION

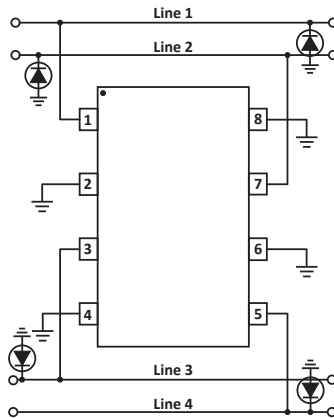


FIGURE 1 - BIDIRECTIONAL COMMON-MODE PROTECTION

The SLVU2.8-4LC provides 4 lines of protection in a common mode configuration. Circuit connectivity is as follows:

- Line 1 connected to Pin 1.
- Line 2 connected to Pin 7.
- Line 3 connected to Pin 3.
- Line 4 connected to Pin 5.
- Pins 2, 4, 6 and 8 are connected to ground.
- External diode to ground is a low capacitance diode of less than 10pF.

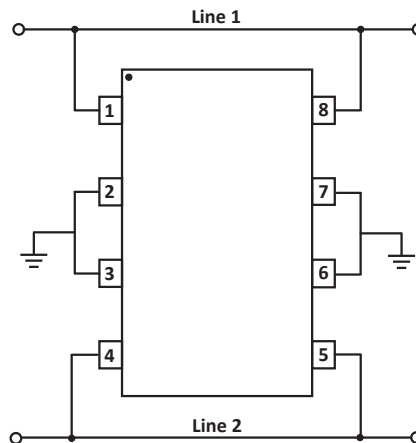


FIGURE 2 - BIDIRECTIONAL COMMON-MODE PROTECTION

The SLVU2.8-4LC provides two line pairs in a common mode configuration. Circuit connectivity is as follows:

- Line 1 connected to Pins 1 and 8.
- Line 2 connected to Pins 4 and 5.
- Pins 2, 3, 6 and 7 connected to ground.

APPLICATION INFORMATION

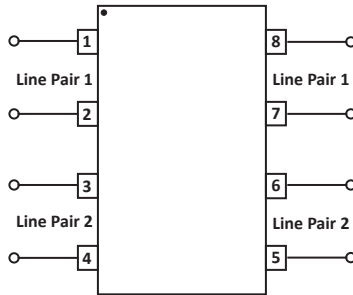


FIGURE 3 - BIDIRECTIONAL DIFFERENTIAL-MODE PROTECTION

The SLVU2.8-4LC provides two line pairs in a differential mode configuration. Circuit connectivity is as follows:

- Line Pair 1 connected to Pins 1, 2, 7 and 8.
- Line Pair 2 connected to Pins 3, 4, 5 and 6.

CIRCUIT BOARD RECOMMENDATIONS

Circuit board layout is critical for electromagnetic compatibility protection. The following guidelines are recommended:

- The protection device should be placed near the input terminals or connectors, the device will divert the transient current immediately before it can be coupled into the nearby traces.
- The path length between the TVS device and the protected line should be minimized.
- All conductive loops including power and ground loops should be minimized.
- The transient current return path to ground should be kept as short as possible to reduce parasitic inductance.
- Ground planes should be used whenever possible. For multilayer PCBs, use ground vias.

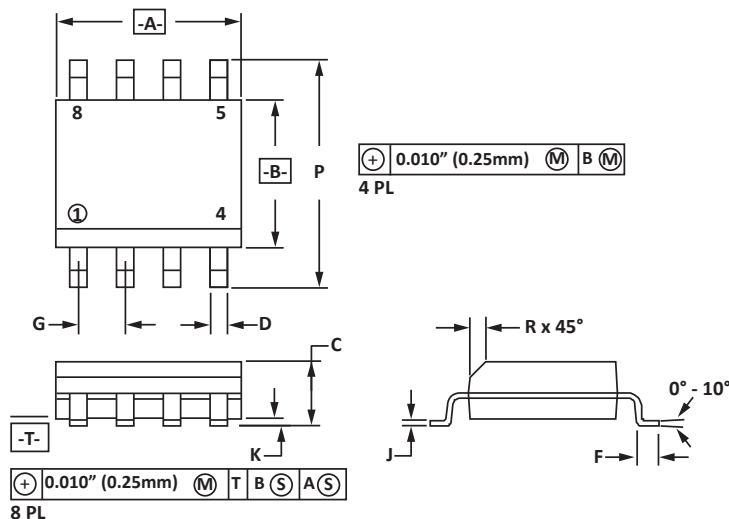
PACKAGE INFORMATION

OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.80	5.00	0.189	0.196
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.25	0.016	0.049
G	1.27 BSC		0.05 BSC	
J	0.18	0.25	0.007	0.009
K	0.10	0.25	0.004	0.008
P	5.80	6.20	0.229	0.244
R	0.25	0.50	0.010	0.019

NOTES

- T = Seating plane and datum surface.
- Dimensions "A" and "B" are datum.
- Dimensions "A" and "B" do not include mold protrusion.
- Maximum mold protrusion is 0.015" (0.380mm) per side.
- Dimensioning and tolerances per ANSI Y14.5M, 1982.
- Dimensions are exclusive of mold flash and metal burrs.

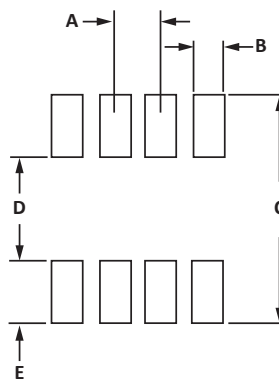


PAD LAYOUT DIMENSIONS

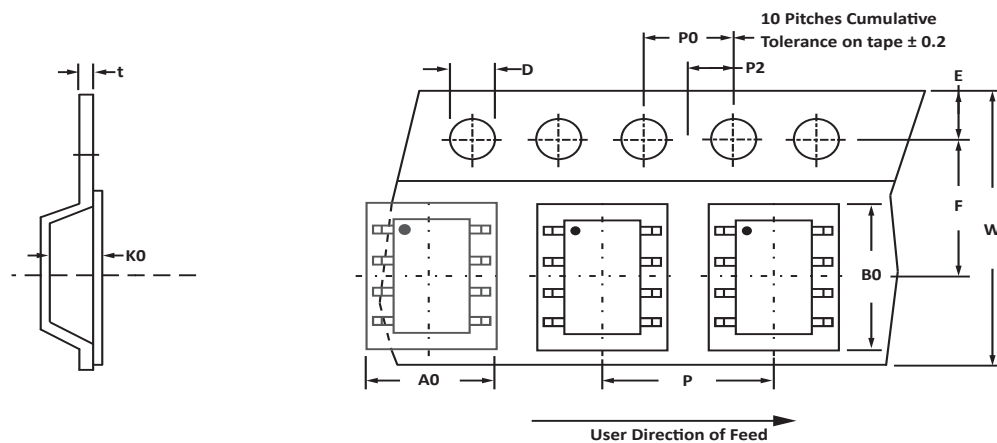
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.14	1.40	0.045	0.055
B	0.64	0.89	0.025	0.035
C	6.22	-	0.245	-
D	3.94	4.17	0.155	0.165
E	1.02	1.27	0.040	0.050

NOTES

- Controlling dimension: inches.



TAPE AND REEL



SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	12mm	6.50 ± 0.10	5.40 ± 0.10	2.00 ± 0.10	1.50 ± 0.10	1.75 ± 0.10	5.50 ± 0.05	12.00 ± 0.30	4.00 ± 0.12	2.00 ± 0.10	8.00 ± 0.10	0.25

NOTES

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- Suffix - T7 = 7" Reel - 1,000 pieces per 12mm tape.
- Suffix - T13 = 13" Reel - 2,500 pieces per 12mm tape.
- Bulk product shipped in tubes of 98 pieces per tube.
- Marking on Part - marking code (see page 2), date code, logo and pin one defined by dot on top of package.

ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
SLVU2.8-4LC	N/A	-T7	1,000	7"	98
SLVU2.8-4LC	N/A	-T13	2,500	13"	98

This device is only available in a Lead-Free configuration.

COMPANY INFORMATION

COMPANY PROFILE

In business more than 25 years, ProTek Devices™ is a privately held semiconductor company. The company offers a product line of overvoltage protection and overcurrent protection components. These include transient voltage suppressor array (TVS arrays) avalanche breakdown diode, steering diode TVS array and electronics SMD chip fuses. These components deliver circuit protection in electronic systems from numerous overvoltage and overcurrent events. They include lightning; electrostatic discharge (ESD); nuclear electromagnetic pulses (NEMP); inductive switching; and electromagnetic interference (EMI) / radio frequency interference (RFI). ProTek Devices also offers LED wafer die for ESD protection and related high frequency products. ProTek Devices is ISO 9001:2015 certified.

CONTACT US

Corporate Headquarters

2929 South Fair Lane
Tempe, Arizona 85282
USA

By Telephone

General: 602-431-8101
Sales: & Marketing: 602-414-5109
Customer Service: 602-414-5114
Product Technical Support: 602-414-5107

By Fax

General: 602-431-2288

By E-mail:

Asia Sales: asiasales@protekdevices.com
Europe Sales: europesales@protekdevices.com
U.S. Sales: ussales@protekdevices.com
Distributor Sales: distysales@protekdevices.com
Customer Service: service@protekdevices.com
Technical Support: support@protekdevices.com

ProTek Devices (Asia Pacific) Pte. Ltd.

8 Ubi Road 2, #06-19
Zervex
Singapore - 408538
Tel: +65-67488312
Fax: +65-67488313

Web

www.protekdevices.com

COPYRIGHT © ProTek Devices 2021 - This literature is subject to all applicable copyright laws and is not for resale in any manner.

SPECIFICATIONS: ProTek reserves the right to change the electrical and or mechanical characteristics described herein without notice.

DESIGN CHANGES: ProTek reserves the right to discontinue product lines without notice and that the final judgement concerning selection and specifications is the buyer's and that in furnishing engineering and technical assistance. ProTek assumes no responsibility with respect to the selection or specifications of such products. ProTek makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ProTek assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability without limitation special, consequential or incidental damages.

LIFE SUPPORT POLICY: ProTek Devices products are not authorized for use in life support systems without written consent from the factory.