05143

PROTEK DEVICES
. . . engineered solutions for the transient environment™

SLVDA2.8LC

SUBMINATURE LOW CAPACITANCE TVS ARRAY

APPLICATIONS

✔ Ethernet 10/100 Base T
✔ Cellular Phone Base Stations
✔ Switching Stations
✔ Audio/Video Inputs
✔ Handheld Devices

SO-8

IEC COMPATIBILITY (EN61000-4)

✔ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
✔ 61000-4-4 (EFT): 40A - 5/50ns
✔ 61000-4-5 (Surge): 24A, 8/20µs - Level 2(Line-Gnd) & Level 3(Line-Line)

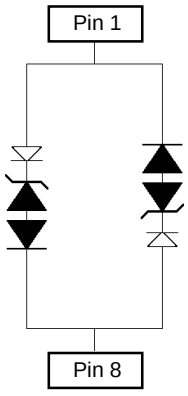
FEATURES

✔ 600 Watt Peak Pulse Power per Line(t_p=8/20µs)
✔ Provides Protection For Four Line Pairs
✔ ***LOW STANDBY CURRENT < 1.0µA***
✔ ***LOW CAPACITANCE 5pF PER DIODE***

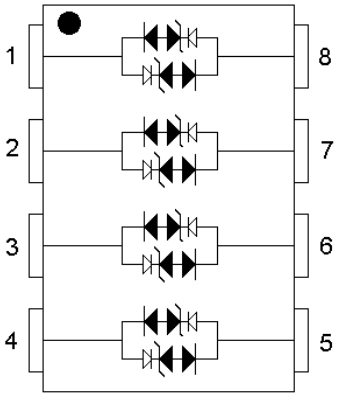
MECHANICAL CHARACTERISTICS

✔ Molded JEDEC SO-8 Package
✔ Weight 0.1 grams (Approximate)
✔ Flammability Rating UL 94V-0
✔ 12mm Tape and Reel Per EIA Standard 481-1-A
✔ Device Marking: Logo, Marking Code & Pin 1 Marked with DOT & Date Code

CIRCUIT DIAGRAM



PIN CONFIGURATION



DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified			
PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power (t_p = 8/20µs) - See Figure 3	P_{PP}	600	Watts
Peak Pulse Current (t_p = 8/20µs)	I_{PP}	30	A
Lead Soldering Temperature	T_{ll}	260°C (10 Sec)	°C
Operating Temperature	T_J	-55°C to 150°C	°C
Storage Temperature	T_{STG}	-55°C to 150°C	°C

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified									
PART NUMBER	DEVICE MARKING CODE	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM PUNCH THROUGH VOLTAGE @ I_{PT} = 2µA V_{PT} VOLTS	MINIMUM SNAP BACK VOLTAGE @ I_{SB} = 50mA V_{SB} VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 4) @I_P = 1A V_C VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 4) @I_P = 5A V_C VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 4) @8/20µs V_C @ I_{PP}	MAXIMUM LEAKAGE CURRENT @V_{WM} = 2.8w I_D µA	TYPICAL CAPACITANCE 0V @ 1MHz C pF
SLVDA2.8LC	LVU2.8	2.8	3.0	2.8	4.6	6.2	21.0V@30.0A	1.0	5

FIGURE 1
POWER DERATING CURVE

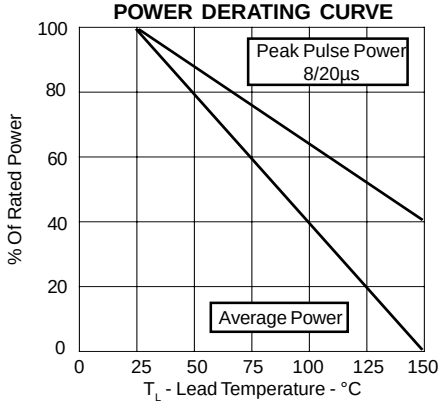
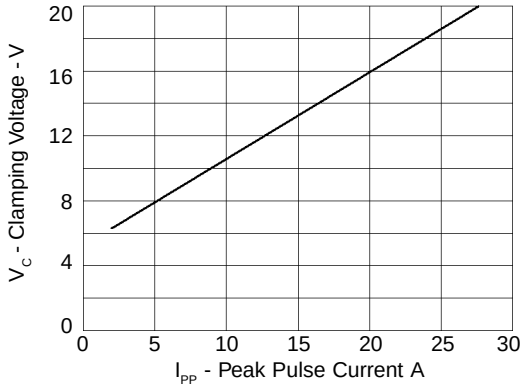


FIGURE 2
TYPICAL CLAMPING VOLTAGE VS PEAK PULSE CURRENT



GRAPHS

FIGURE 3
Peak Pulse Power vs Pulse Time

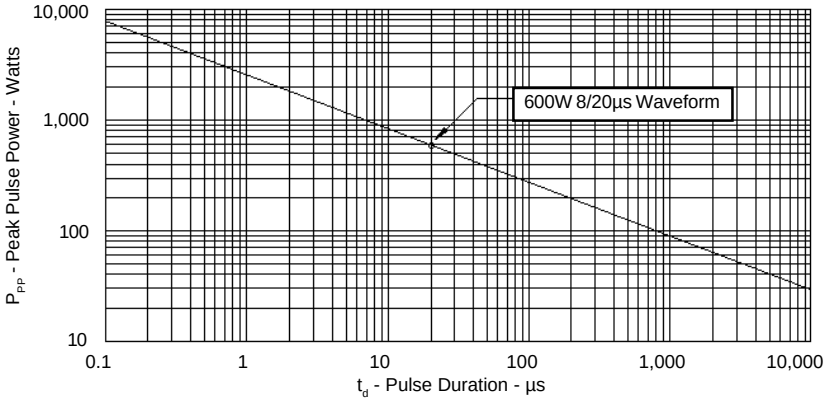
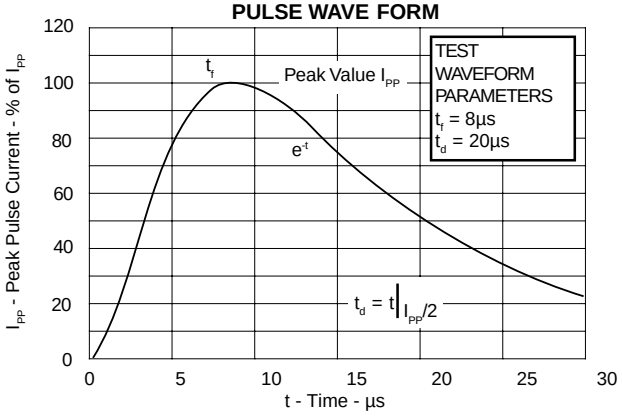


FIGURE 4
PULSE WAVE FORM



APPLICATION NOTES

Electronic equipment is susceptible to damage caused by Electrostatic Discharge (ESD), Electrical Fast Transients (EFT), and tertiary lightning effects. Knowing that equipment can be damaged, the SLVDA2.8LC was designed to provide the level of protection required to safe guard sensitive high speed data circuits. This product can be used to provide a level of protection to meet bidirectional requirements either in a common mode or differential mode configuration.

BIDIRECTIONAL COMMON MODE CONFIGURATION (Figure 1)

The SLVDA2.8LC can provide up to four (4) lines of protection in a common mode configuration as depicted in Figure 1. Circuit connectivity is as follows:

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

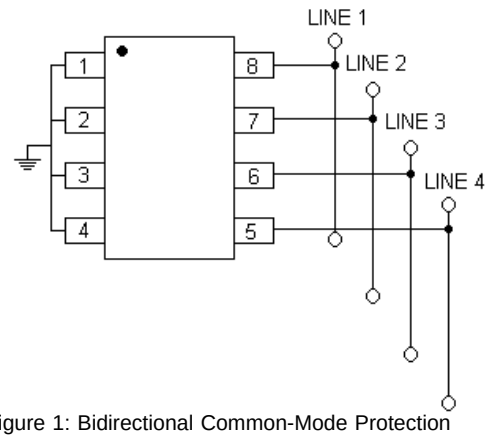


Figure 1: Bidirectional Common-Mode Protection

BIDIRECTIONAL DIFFERENTIAL MODE CONFIGURATION (Figure 2)

The SLVDA2.8LC can provide up to four line pairs (4) of protection in a differential mode configuration as depicted in Figure 2.

Circuit connectivity is as follows;

- ✔ Line Pair # 1 is connected to pin 8 and 1,
- ✔ Line Pair # 2 is connected to pin 7 and 2,
- ✔ Line Pair # 3 is connected to pin 5 and 4,
- ✔ Line Pair # 4 is connected to pin 6 and 3.

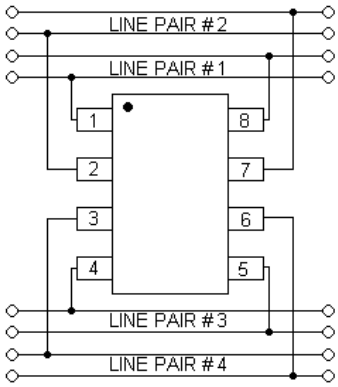
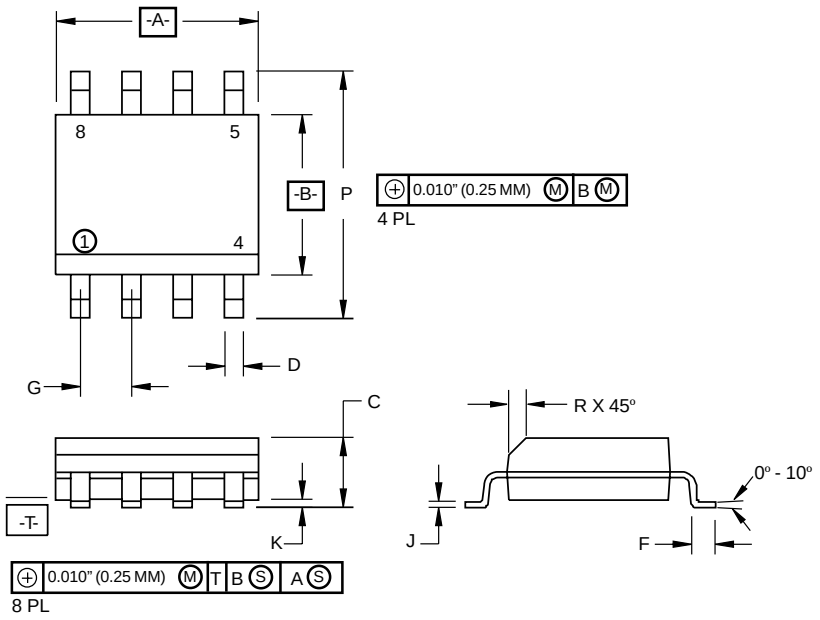


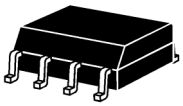
Figure 2: Bidirectional Differential-Mode Protection

PACKAGE OUTLINE & DIMENSIONS

PACKAGE OUTLINE



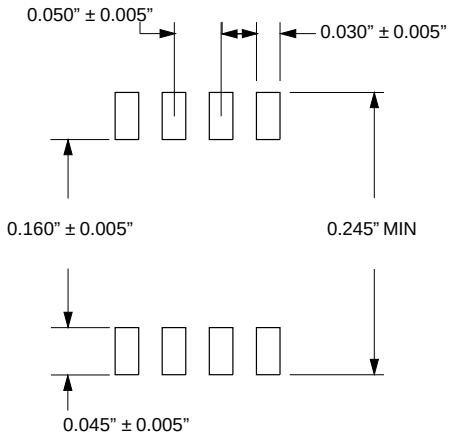
SO-8



PACKAGE DIMENSIONS

DIM	MILLIMETERS MIN	MILLIMETERS MAX	INCHES MIN	INCHES 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	1.250	0.016	0.049
G	1.27 BSC	1.27 BSC	0.05 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

MOUNTING PAD



NOTES:
1. - T - = Seating Plane and Datum Surface.
2. Dimensions "A" and "B" are Datum.
3. Dimensions "A" and "B" do not include mold protrusion.
4. Maximum mold protrusion is 0.015" (0.380 mm) per side.
5. Dimensioning and tolerances per ANSI Y14.5M, 1982.
6. Dimensions are exclusive of mold flash and metal burrs.

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TAPE & REEL PACKAGING:
Surface mount product is taped and reeled in accordance with EIA-481, reel quantites and sizes are as follows:
7 Inch Reel - 1,000 pieces per reel; 13 Inch Reel - 2,500 pieces per reel

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