

200 WATT ASYMMETRICAL LINE PROTECTION TVS ARRAY



SOD-323 PACKAGE

DESCRIPTION

The PAM1LIN is an asymmetrical line protection transient voltage suppressor array, designed for local interconnect network (LIN) bus protection. This device is available in a bidirectional configuration and is rated at 200 Watts for an 8/20 μ s waveshape.

The PAM1LIN meets IEC 61000-4-2 (ESD) and IEC 61000-4-4 (EFT) requirements.

FEATURES

- AEC-Q101 Qualified
- IEC Compatibility IEC 61000-4-2 (ESD): Air \pm 30kV, Contact \pm 30kV
- IEC Compatibility IEC 61000-4-4 (EFT): 40A - 5/50ns
- IEC Compatibility IEC 61000-4-5 (Surge): 24A, 8/20 μ s - Level 2(Line-Gnd) & Level 3(Line-Line)
- 200 Watts Peak Pulse Power per Line ($t_p = 8/20\mu$ s)
- Replacement for MLV (0805)
- Bidirectional Configuration
- Protects One Power or I/O Port
- Low Clamping Voltage
- Asymmetrical Line Protection: Pin 1 to 2 - 15V, Pin 2 to 1 - 24V
- RoHS Compliant
- REACH Compliant

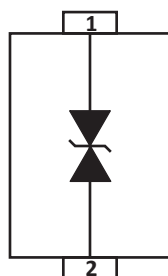
APPLICATIONS

- Automotive Applications
- Local Interconnect Network (LIN) Bus Protection
- Bus Protection

MECHANICAL CHARACTERISTICS

- Molded JEDEC SOD-323 Package
- Approximate Weight: 5 milligrams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
Pure-Tin - Sn, 100: 260-270°C
- 8mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

PIN CONFIGURATION



← Polarity band denotes the cathode of the 15V side.

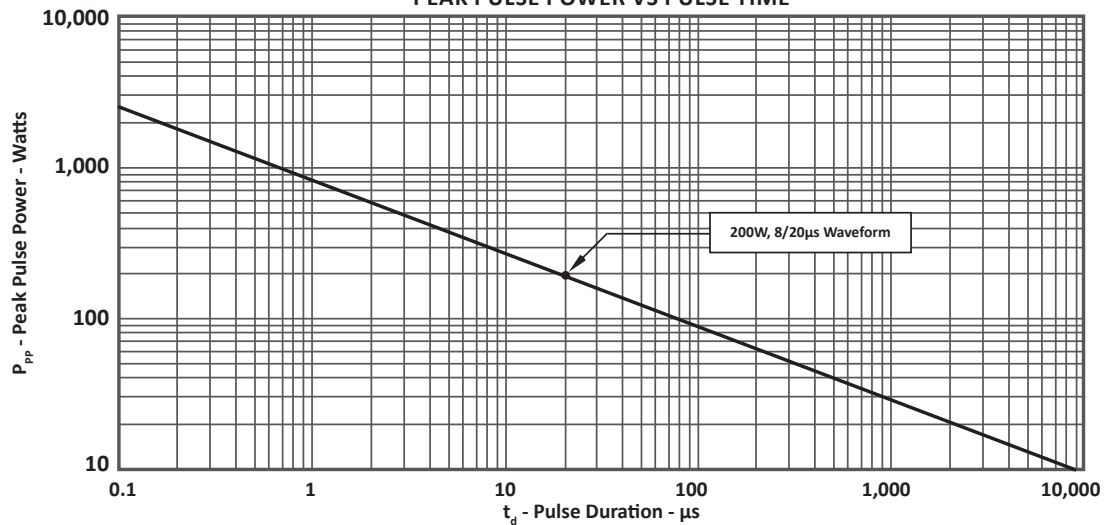
TYPICAL DEVICE CHARACTERISTICS
MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power ($t_p = 8/20\mu s$) - See Figure 1	P_{PP}	200	Watts
Operating Temperature	T_A	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C
ESD Voltage Level per IEC 61000-4-2 (Air and Contact)	V_{ESD}	± 30	kV

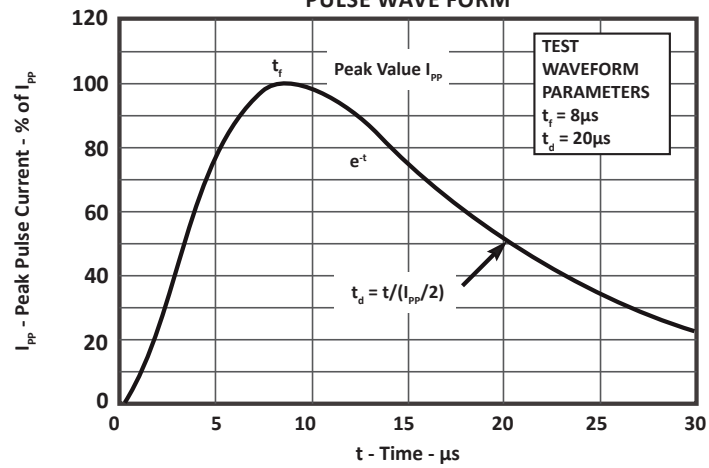
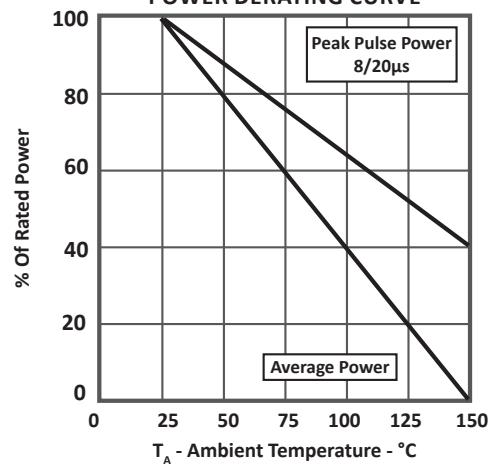
ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

	DEVICE MARKING	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	BREAKDOWN VOLTAGE @ 5mA $V_{(BR)}$ VOLTS			CLAMPING VOLTAGE (Fig. 2) @ $I_p = 1A$ V_C VOLTS		CLAMPING VOLTAGE (Fig. 2) @ 8/20 μs $V_C @ I_{PP}$		MAXIMUM LEAKAGE CURRENT ($T_J = 25^\circ C$) @ V_{WM} I_D μA		MAXIMUM DIFFERENTIAL RESISTANCE @ $I_R = 1mA$ OHMS	OFF-STATE CAPACITANCE @ 0Vdc, 1MHz C pF	
			MIN	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX			
			Pin 1 to 2	54	15.0	17.2	19	22	20.5	25	30		44 @ 5A	0.001
Pin 2 to 1	24.0	25.5	31		36	37	40	55	70 @ 3A	0.001	0.045	300	14	17

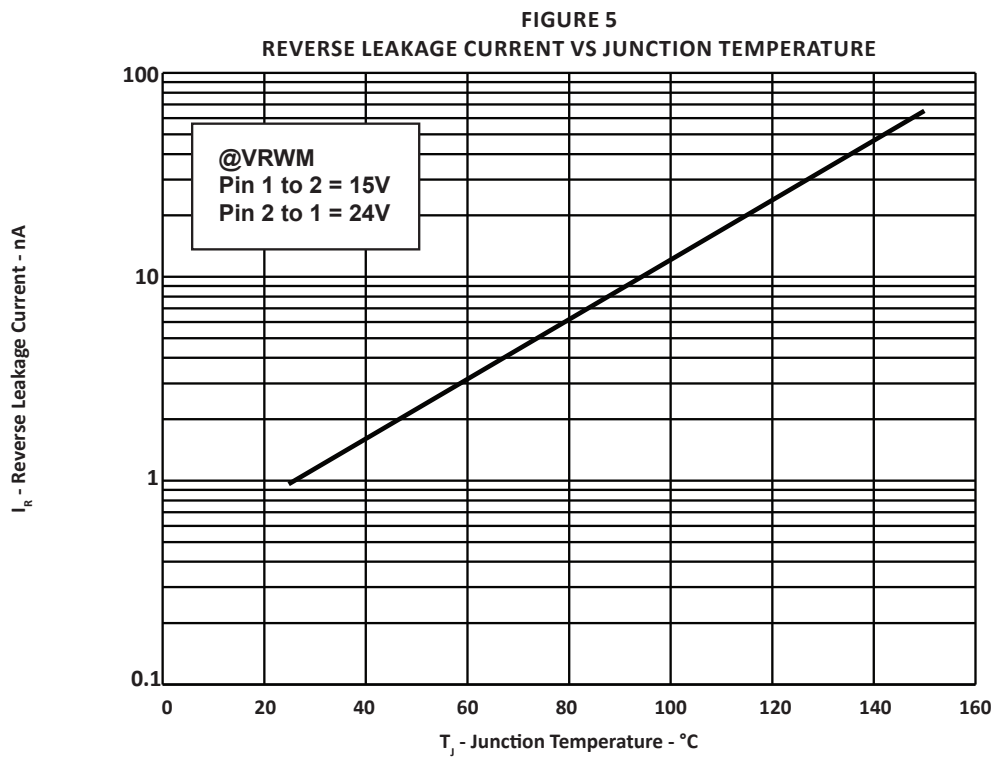
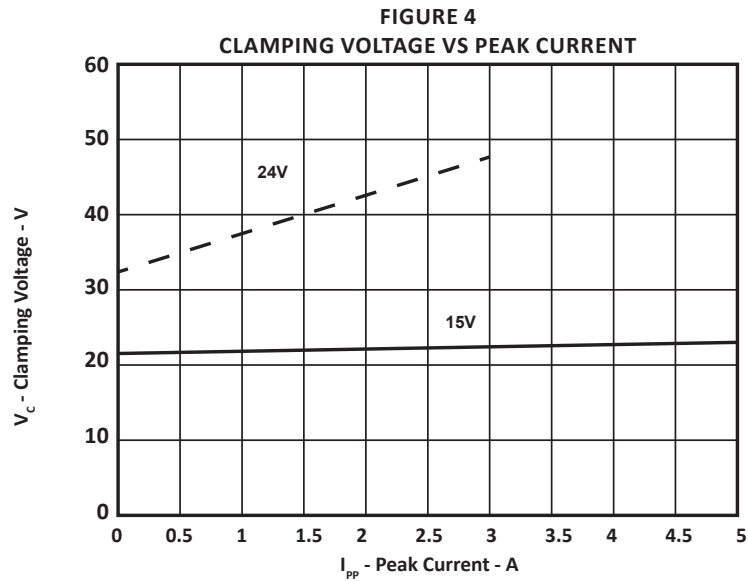
FIGURE 1
PEAK PULSE POWER VS PULSE TIME



TYPICAL DEVICE CHARACTERISTICS

FIGURE 2
PULSE WAVE FORM

FIGURE 3
POWER DERATING CURVE


TYPICAL DEVICE CHARACTERISTICS

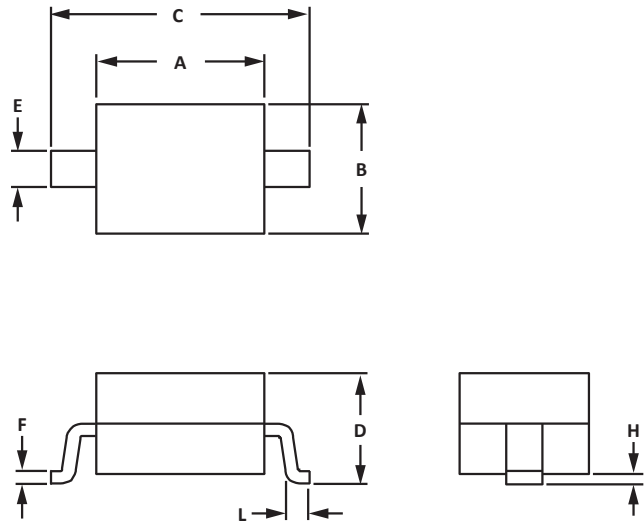


SOD-323 PACKAGE INFORMATION
OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.60	1.90	0.063	0.075
B	1.15	1.45	0.045	0.057
C	2.39	2.70	0.094	0.106
D	0.80	1.10	0.031	0.043
E	0.25	0.40	0.010	0.016
F	0.10	0.20	0.004	0.008
H	-	0.10	-	0.004
L	0.20	-	0.008	-

NOTES

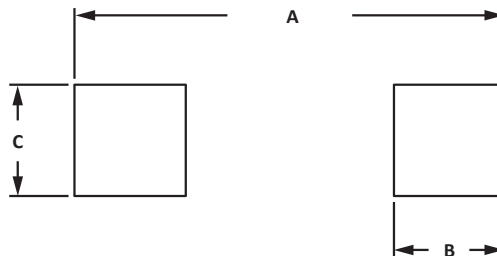
- Controlling dimension: millimeters.
- Dimensioning and tolerances per ANSI Y14.5M, 1985.
- Dimensions are exclusive of mold flash and metal burrs.


PAD LAYOUT DIMENSIONS

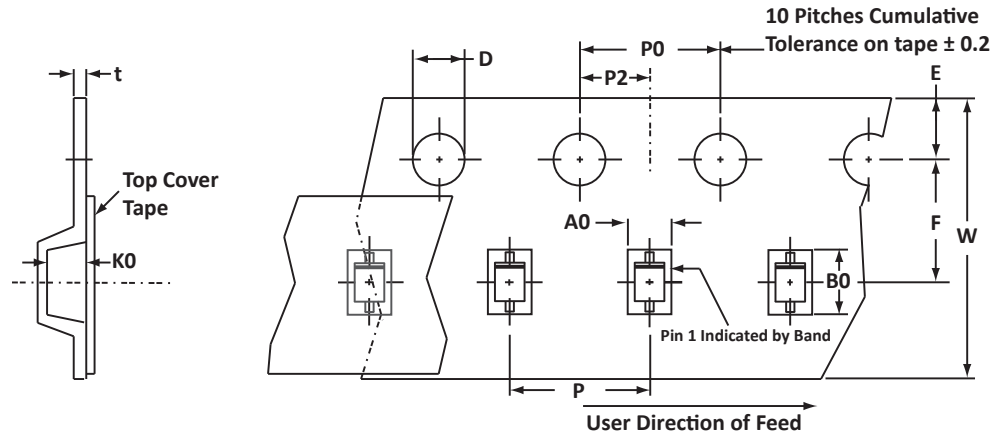
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.87	3.12	0.113	0.123
B	0.66	0.91	0.026	0.036
C	0.66	0.91	0.026	0.036

NOTES

- Controlling dimension: millimeters.



TAPE AND REEL



SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	8mm	1.55 ± 0.10	2.90 ± 0.10	1.35 ± 0.10	1.50 ± 0.10	1.75 ± 0.10	3.50 ± 0.05	8.00 ± 0.30	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 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 - 3,000 pieces per 8mm tape.
- Marking on Part - marking code (see page 2) and band.

ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PAM1LIN	n/a	-T7	3,000	7"	n/a

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

COMPANY INFORMATION

COMPANY PROFILE

In business more than 20 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.

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