

## 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 $\mu$ 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 $\mu$ 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

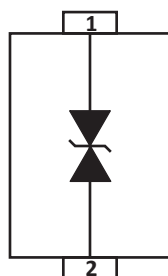
### APPLICATIONS

- 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



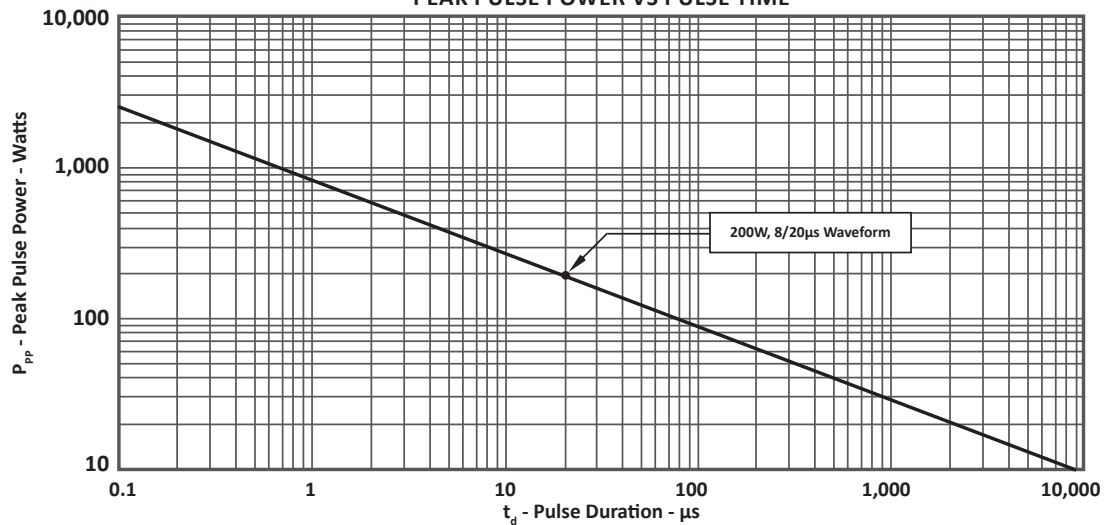
← Polarity band denotes the cathode of the 15V side.

**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)	$V_{ESD}$	$\pm 30$	kV

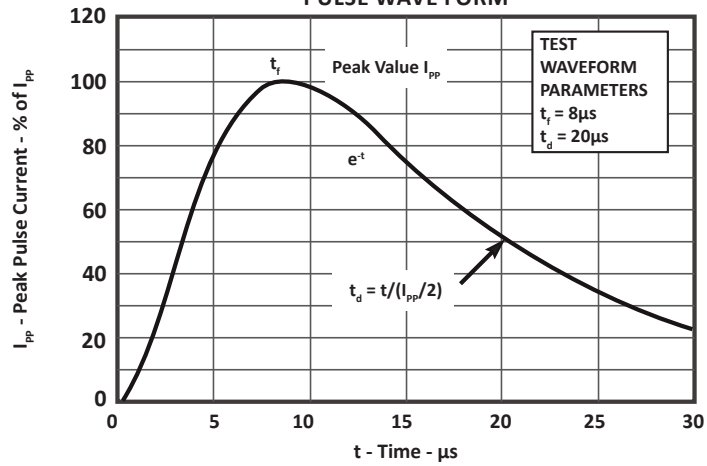
**ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified**

	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 $\mu s$ $V_C @ I_{PP}$		MAXIMUM LEAKAGE CURRENT ( $T_J = 25^\circ C$ )  @ $V_{WM}$ $I_D$ $\mu A$		MAXIMUM DIFFERENTIAL RESISTANCE  @ $I_R = 1mA$ OHMS	OFF-STATE CAPACITANCE  @ 0Vdc, 1MHz C pF	
			MIN	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX			
														TYP
Pin 1 to 2	54	15.0	17.2	19	22	20.5	25	30	44 @ 5A	0.001	0.045	225	14	17
Pin 2 to 1		24.0	25.5	31	36	37	40	55	70 @ 3A	0.001	0.045	300	14	17

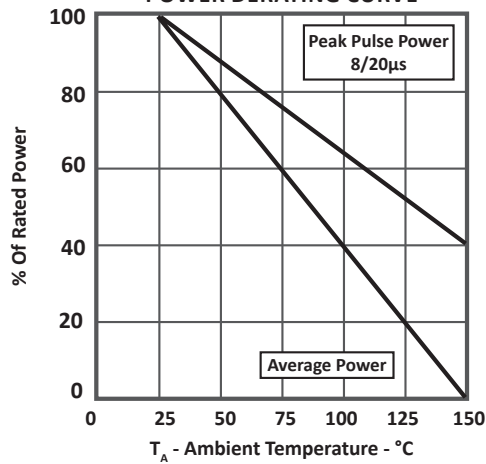
**FIGURE 1  
PEAK PULSE POWER VS PULSE TIME**


TYPICAL DEVICE CHARACTERISTICS

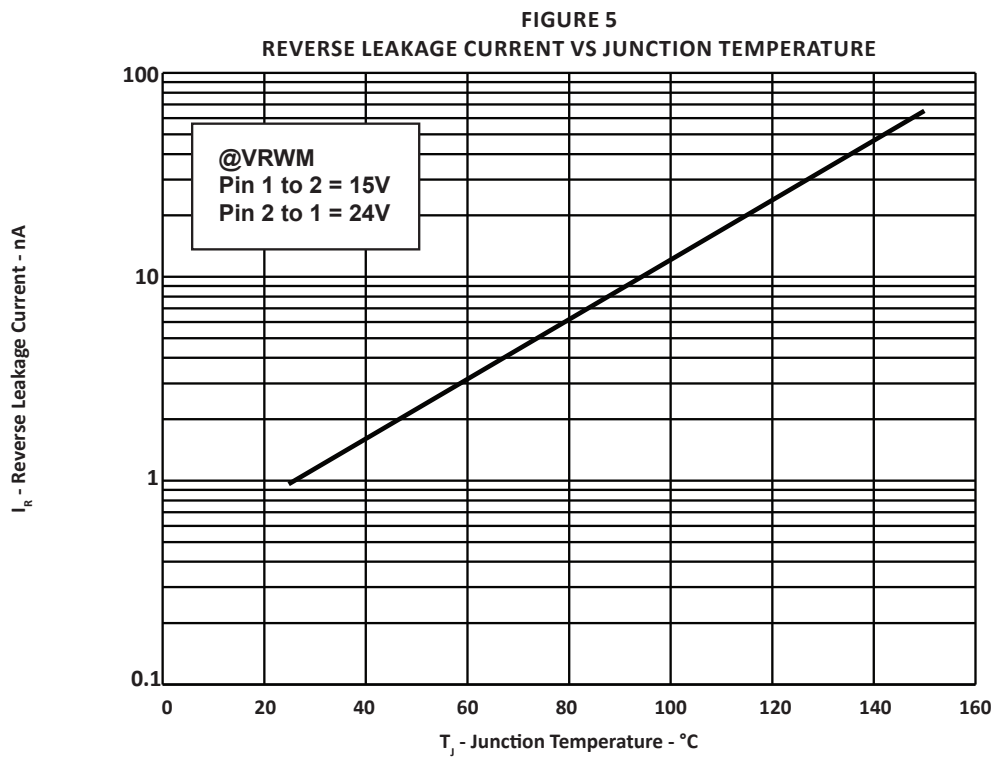
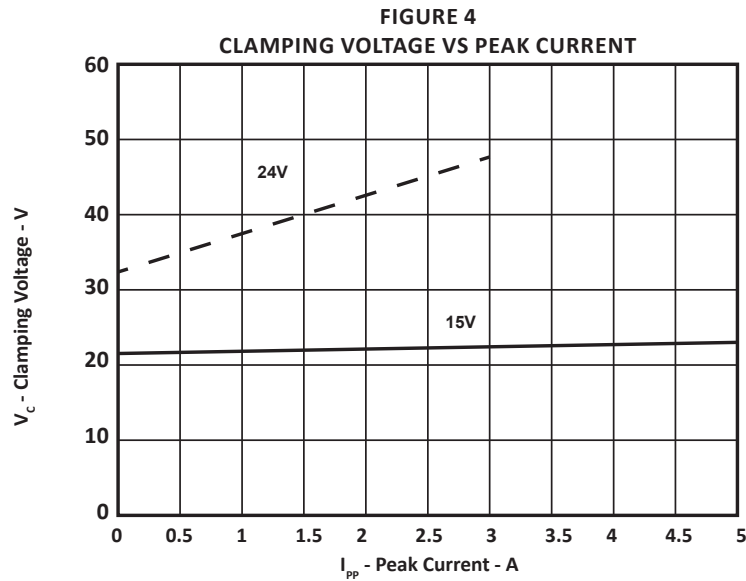
**FIGURE 2**  
**PULSE WAVE FORM**



**FIGURE 3**  
**POWER DERATING CURVE**



## TYPICAL DEVICE CHARACTERISTICS



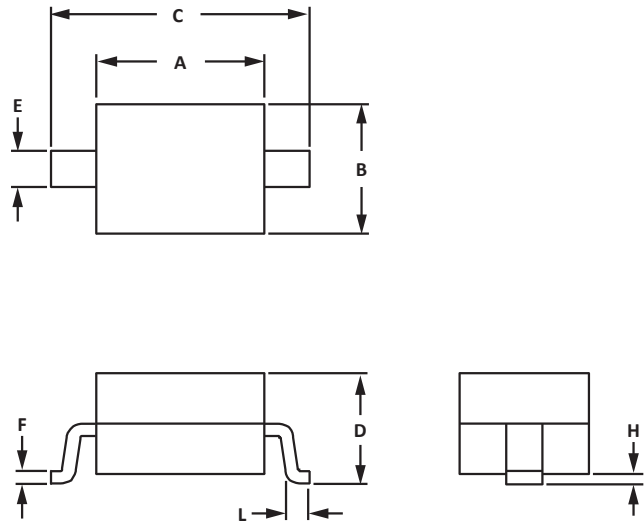
## SOD-323 PACKAGE INFORMATION

### 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.

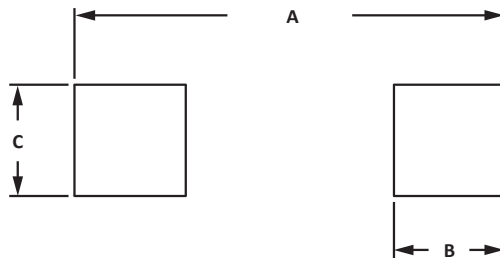


### PAD LAYOUT DIMENSIONS

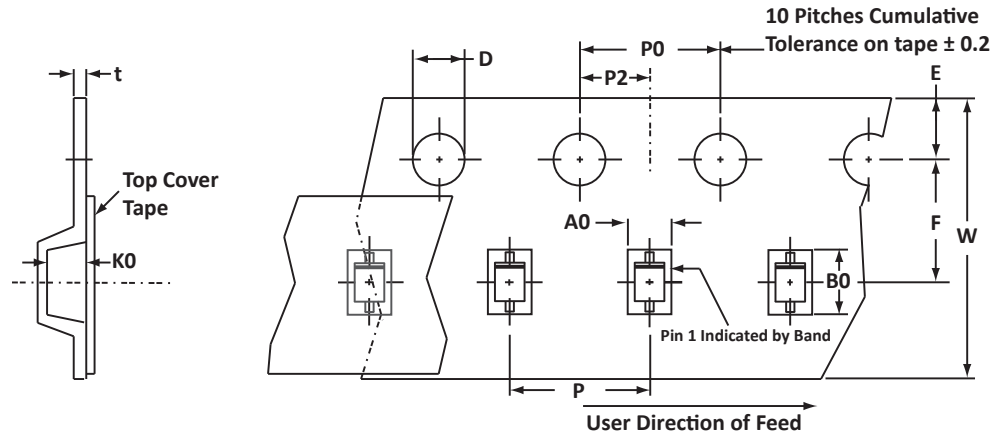
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.87	3.12	0.113	0.123
B	0.66	0.91	0.026	0.036
C	0.66	0.91	0.026	0.036

#### 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

1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Suffix - T7 = 7" Reel - 3,000 pieces per 8mm tape.
4. 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

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### 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.

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