

ULTRA LOW CAPACITANCE STEERING DIODE/TVS ARRAY



DESCRIPTION

The PAM251033 is an ultra low capacitance steering diode/TVS array. This device is designed to protect automotive equipment and systems from the damaging effects of ESD, EFT and other transient surges. The PAM251033 is available in the space-saving DFN-10 package configuration and is rated at 30 Watts peak pulse power per line for a 8/20 μ s waveshape.

This device meets the IEC 61000-4-2 (ESD), 61000-4-2 (EFT) and 61000-4-4 (Surge) requirements. At higher operating frequencies or faster edge rates, insertion loss and signal integrity are a major concern. This device in conjunction with passive components integrated into a TVS/filter network can be used for EMI/RFI protection.

FEATURES

- AEC-Q101 Qualified
- 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 (Lightning): 3A - 8/20 μ s
- 30 Watts Peak Pulse Power per Line (tp=8/20 μ s)
- Protects 4 Lines
- Ultra Low Capacitance : 0.33pF Typical(I/O to I/O)
- RoHS Compliant

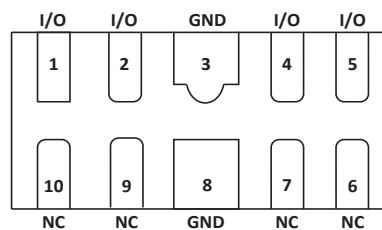
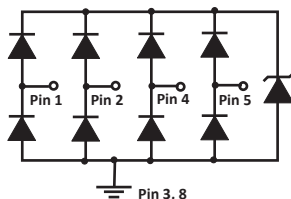
APPLICATIONS

- HDMI
- USB 2.0
- USB 3.x

MECHANICAL CHARACTERISTICS

- Molded JEDEC DFN-10 Package
- Approximate Weight: 7 milligrams
- Lead Finish: Lead-free
- Solder Reflow Temperature:
Pure-Tin - Sn, 100: 260-270°C
- 8mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

CIRCUIT DIAGRAM & PIN CONFIGURATION



TYPICAL DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

PARAMETER	SYMBOL	VALUE	UNITS
Operating Temperature	T_L	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C
Peak Pulse Power ($t_p = 8/20\mu s$) - See Figure 1	P_{PP}	30	Watts

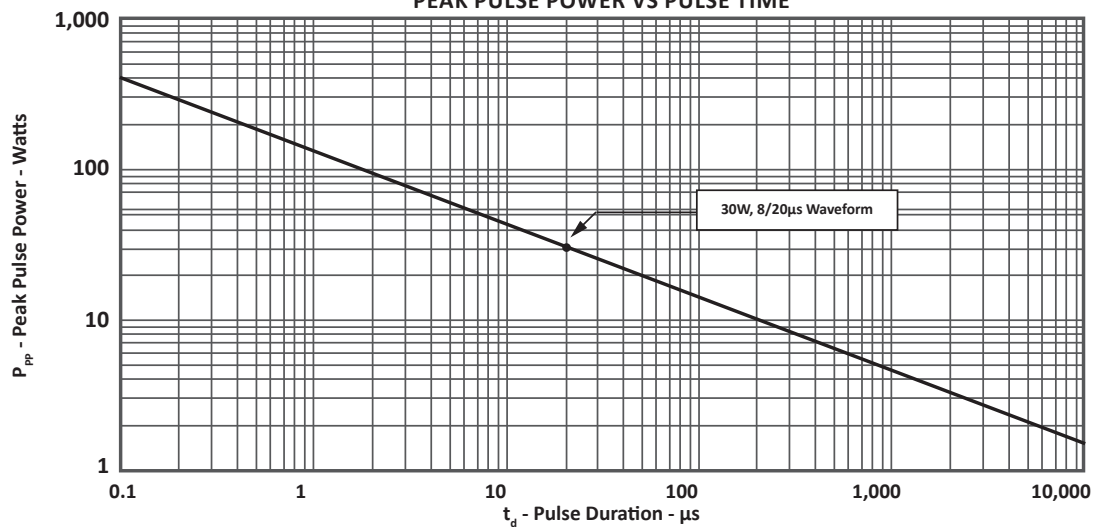
ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM REVERSE TRIGGER VOLTAGE $@ I_{T1} = 1\mu A$ $V_{(T1)}$ VOLTS	MINIMUM REVERSE HOLDING VOLTAGE $@ I_{H1} = 50mA$ $V_{(H1)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) (Note 1) $@ I_p = 1A$ V_c VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) (Note 1) $@ I_p = 3A$ V_c VOLTS	MAXIMUM LEAKAGE CURRENT $@ V_{WM}$ I_D μA	TYPICAL CAPACITANCE (Note 1) $@ 0V, 1MHz$ C pF
PAM251033	3R2P	3.3	3.8	3.5	9.0	10.0	1.0	0.33

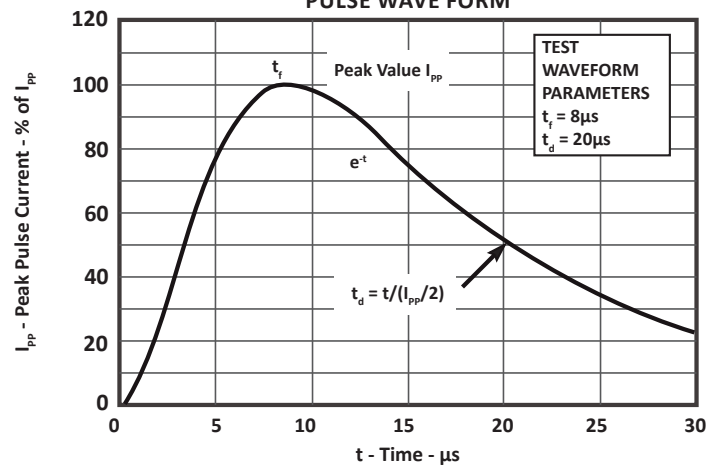
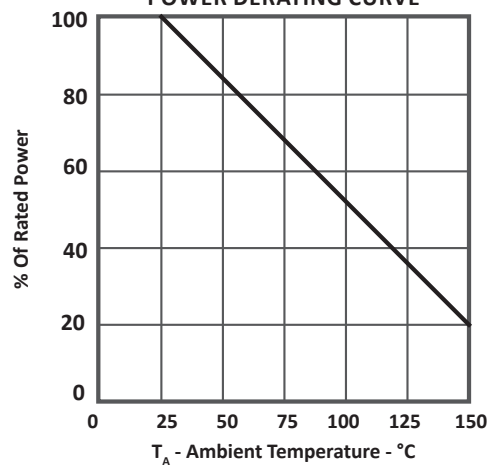
NOTES

1. I/O to Ground.

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

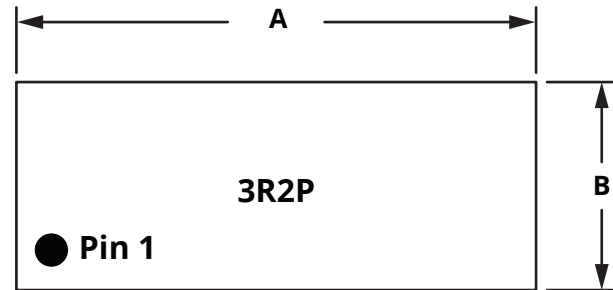
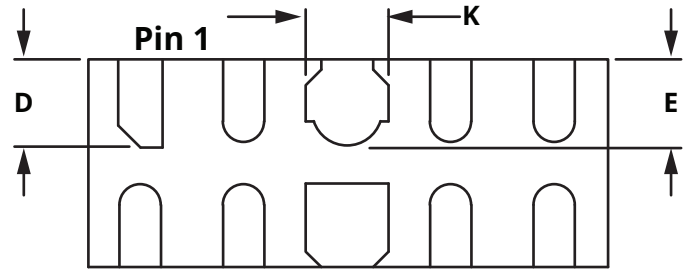
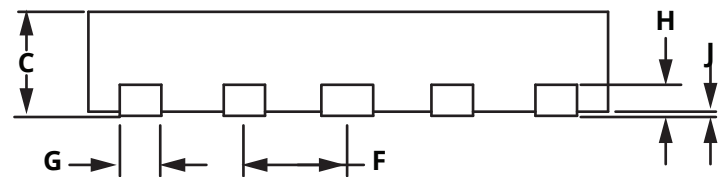


TYPICAL DEVICE CHARACTERISTICS

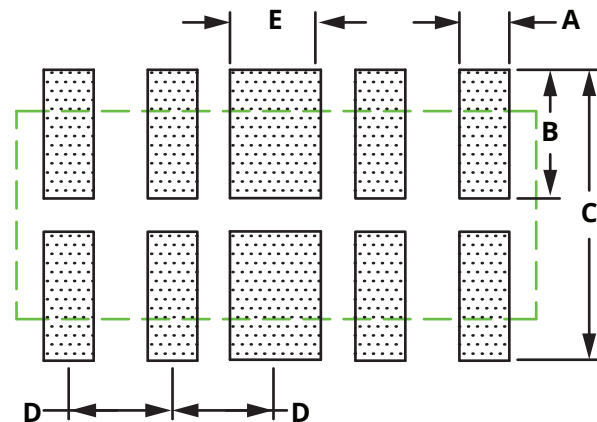
FIGURE 2
PULSE WAVE FORM

FIGURE 3
POWER DERATING CURVE


PACKAGE INFORMATION

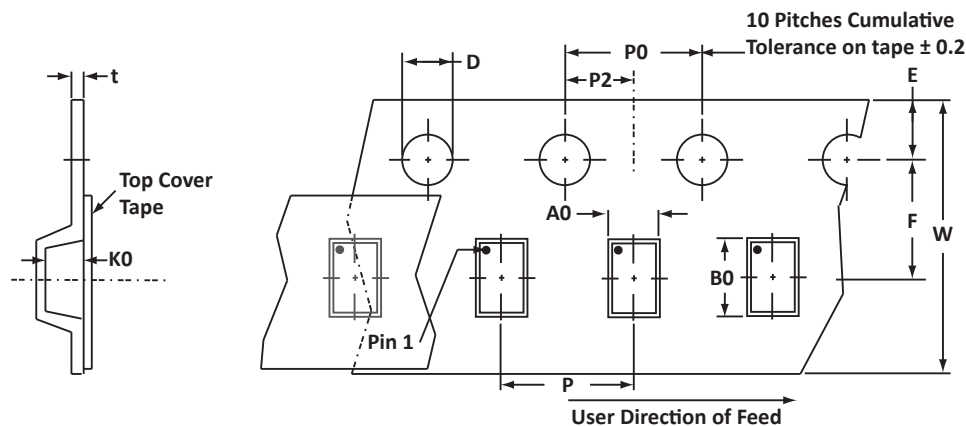
OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.40	2.60	0.094	0.102
B	0.90	1.10	0.035	0.043
C	0.46	0.60	0.018	0.024
D	0.30	0.45	0.012	0.018
E	0.30	0.56	0.012	0.022
F	0.50		0.020	
G	0.15	0.25	0.006	0.010
H	0.15		0.006	
J	0.00	0.05	0.000	0.002
K	0.35	0.45	0.014	0.018
NOTES 1. Controlling dimension: millimeters.				

TOP VIEW

BOTTOM VIEW

SIDE VIEW


PAD LAYOUT		
DIM	MILLIMETERS	INCHES
	NOMINAL	NOMINAL
A	0.24	0.009
B	0.675	0.026
C	1.55	0.061
D	0.50	0.020
E	0.44	0.017
NOTES 1. 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	1.20 ± 0.10	2.75 ± 0.10	0.70 ± 0.10	1.55 ± 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	0.20

NOTES

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- Marking on Part - marking code (see page 2) and pin 1 dot.

ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PAM251033	n/a	-T73	3,000	7"	n/a

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

COMPANY INFORMATION

COMPANY PROFILE

In business more than 30 years, ProTek Devices™ is a privately held semiconductor company. The company offers a product line of overvoltage protection that include Transient Voltage Suppressor (TVS) Arrays, Steering Diode Array Hybrids, High-power Components and Modules, as well as Steering Diodes, EMI Filter/TVS Arrays and Thyristor Surge Suppressors. These components deliver circuit protection in electronic systems from numerous overvoltage events. They include lightning; electrostatic discharge (ESD); nuclear electromagnetic pulses (NEMP); inductive switching; and electromagnetic interference (EMI) / radio frequency interference (RFI). ProTek Devices is an ISO 9001 certified company.

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