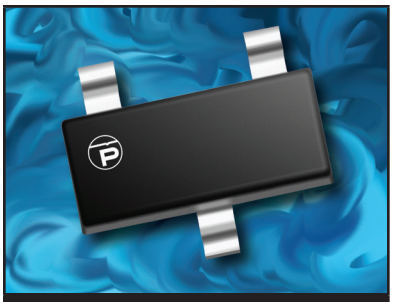
CAN BUS ESD PROTECTION DIODE



SOT-23 PACKAGE

DESCRIPTION

The PAM1CAN is designed to protect two automotive Controller Area Network (CAN) bus lines from the damaging effects of Electrostatic Discharge (ESD) and other transients. This device is available in a SOT-23 package configuration and meets IEC 61000-4-2 and IEC 61000-4-4 requirements.

FEATURES

- ***AEC-Q101 Qualified***
- Compatible with IEC 61000-4-2 (ESD): Air 15kV, Contact 8kV
- Compatible with IEC61000-4-4 (EFT): 40A, 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 3A, 8/20µs
- 200 Watts Peak Pulse Power per Line(tp = 8/20µs)
- Two Lines of Protection
- ESD Protection > 25 kilovolts
- Low Clamping Voltage
- Low Capacitance
- Low Leakage Current
- RoHS Compliant
- REACh Compliant

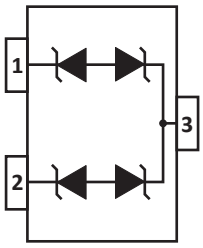
APPLICATIONS

- CAN Bus Protection
- Automotive Applications

MECHANICAL CHARACTERISTICS

- Molded JEDEC SOT-23 Package
- Approximate Weight: 8 milligrams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
  Pure-Tin - Sn, 100: 260-270°C
- Flammability Rating UL 94V-0
- 8mm Tape and Reel per EIA Standard 481

PIN CONFIGURATION



TYPICAL DEVICE CHARACTERISTICS

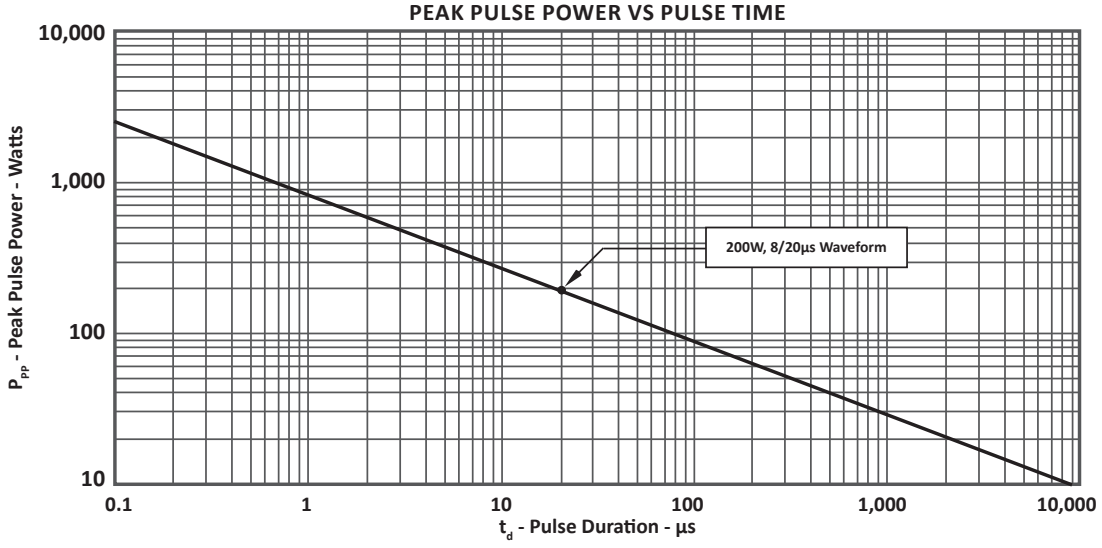
MAXIMUM RATINGS @ 25°C Unless Otherwise Specified			
PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power (tp = 8/20µs) - See Figure 1	P_{PP}	200	Watts
Operating Temperature	T_L	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C
Peak Pulse Current - 8/20µs	I_{PP}	3	Amps

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	BREAKDOWN VOLTAGE @ 5mA $V_{(BR)}$ VOLTS			CLAMPING VOLTAGE (Fig. 2) @ I_P = 3A V_C VOLTS		LEAKAGE CURRENT (T_J = 25°C) @V_{WM} I_D µA		MAXIMUM LEAKAGE CURRENT (T_J = 125°C) @V_{WM} I_D nA	OFF-STATE CAPACITANCE (NOTE 1-2) @0Vdc, 250KHz/1MHz C pF	
			MIN	TYP	MAX	TYP	MAX	TYP	MAX		TYP	MAX
PAM1CAN	P2C	24	25.4	28	30	46	70	0.002	0.05	300	11	17

NOTE
1. Measured between pin 1 and pin 3 or pin 2 and pin 3.
2. Capacitance difference between two channels is under 5%.

FIGURE 1
PEAK PULSE POWER VS PULSE TIME



TYPICAL DEVICE CHARACTERISTICS

FIGURE 2
PULSE WAVE FORM

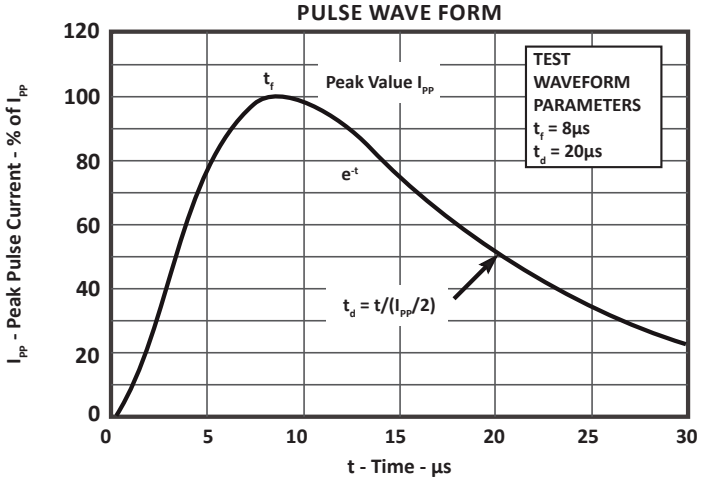


FIGURE 3
POWER DERATING CURVE

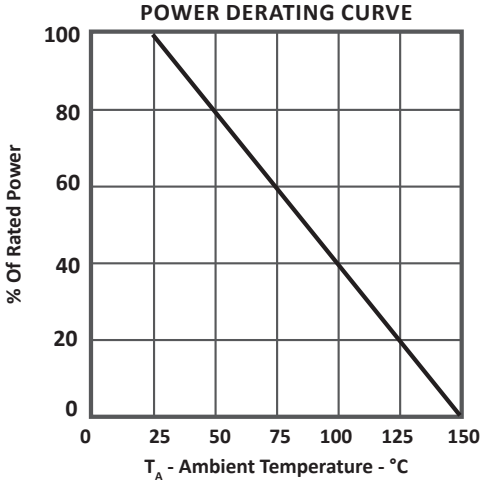
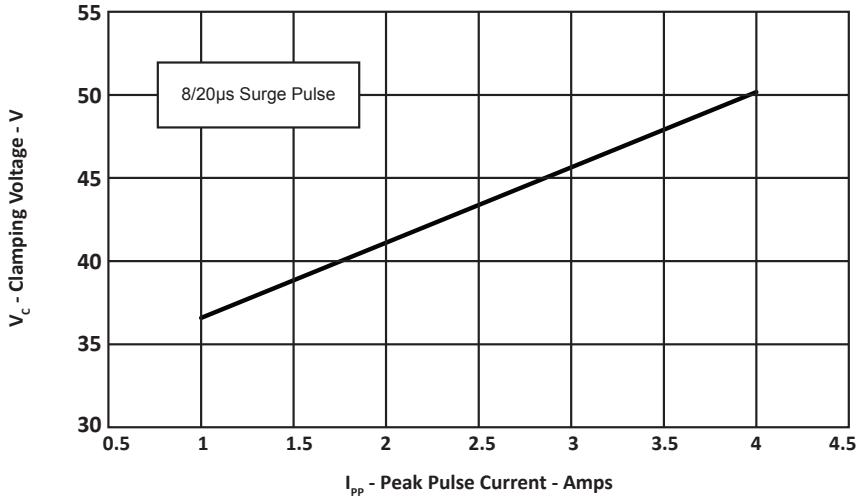


FIGURE 4
CLAMPING VOLTAGE VS SURGE CURRENT



TYPICAL DEVICE CHARACTERISTICS

FIGURE 5
NORMALIZED OFF-STATE CAPACITANCE

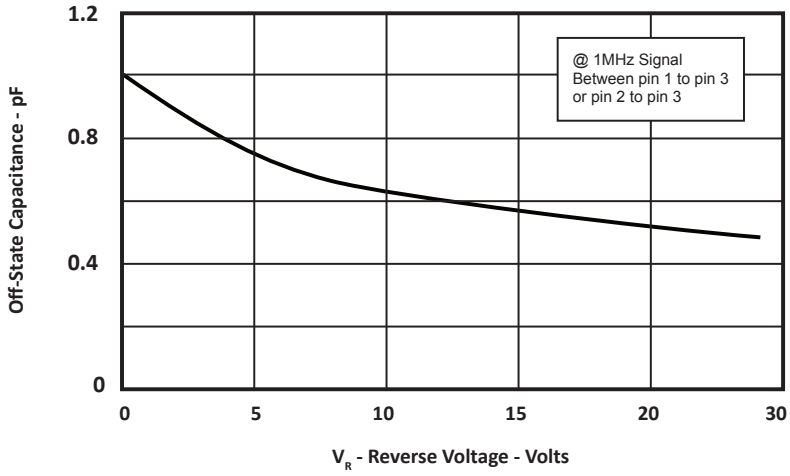
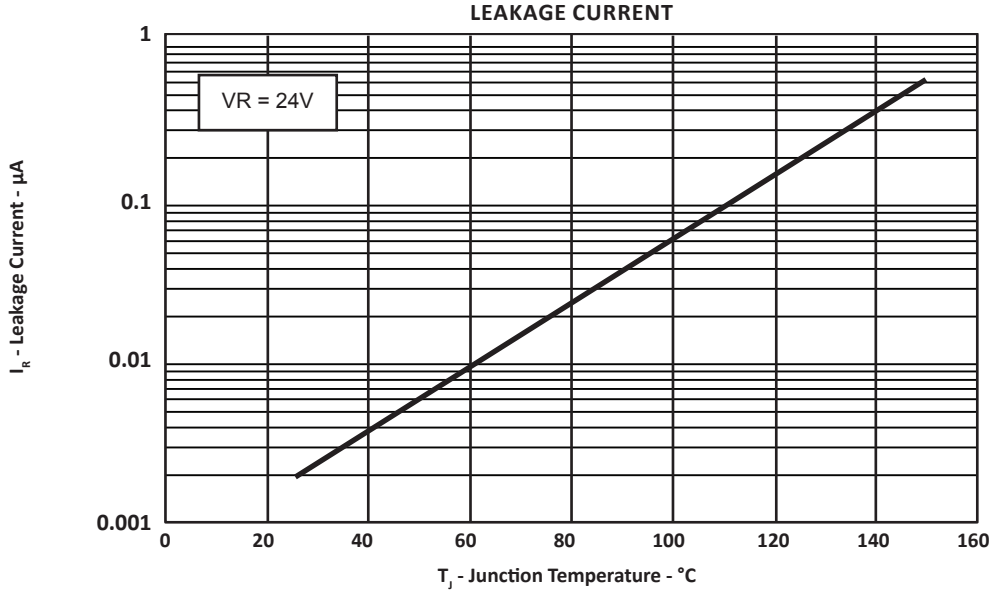


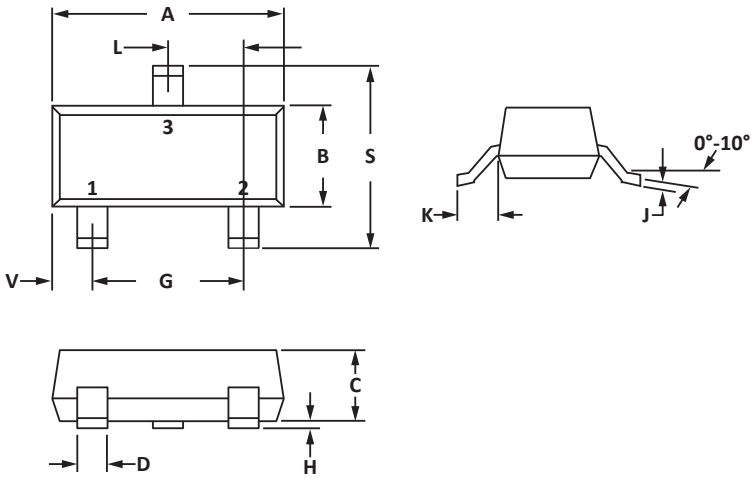
FIGURE 6
LEAKAGE CURRENT



SOT-23 PACKAGE INFORMATION

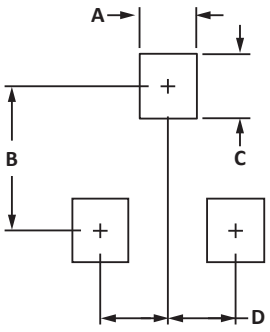
OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.80	3.04	0.110	0.120
B	1.20	1.40	0.047	0.055
C	0.89	1.11	0.035	0.044
D	0.37	0.50	0.015	0.020
G	1.78	2.04	0.070	0.081
H	0.013	0.100	0.001	0.004
J	0.085	0.177	0.003	0.007
K	0.45	0.60	0.018	0.024
L	0.89	1.02	0.035	0.040
S	2.10	2.50	0.083	0.098
V	0.45	0.60	0.018	0.024

NOTES
1. Controlling dimension: inches.
2. Dimensioning and tolerances per ANSI Y14.5M, 1985.
3. Pin 3 is the cathode (Unidirectional Only)
4. Dimensions are exclusive of mold flash and metal burrs.

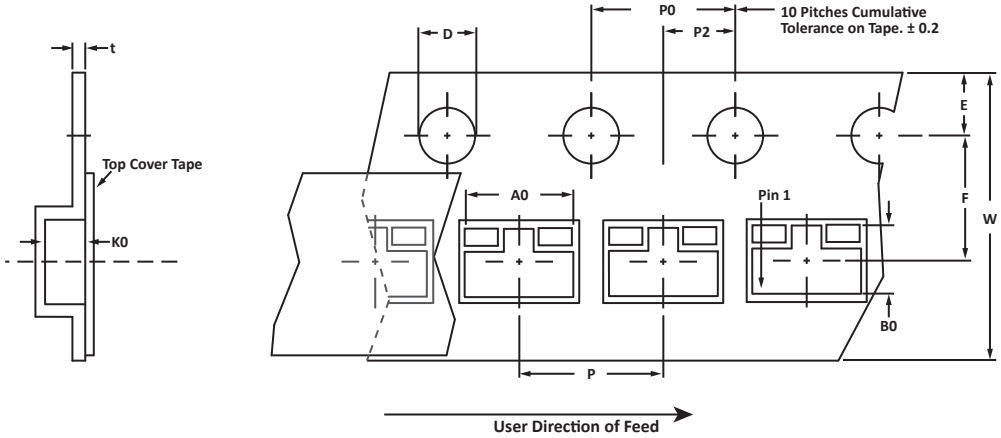


PAD LAYOUT DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.71	0.97	0.028	0.038
B	1.88	2.13	0.074	0.084
C	0.71	0.97	0.028	0.038
D	0.81	1.07	0.032	0.042

NOTES
1. Controlling dimension: inches.



TAPE AND REEL



SPECIFICATIONS												
REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	8mm	3.15 ± 0.10	2.77 ± 0.10	1.30 ± 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	0.228

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. Suffix - T13 = 13" Reel - 10,000 pieces per 8mm tape.
5. Marking on Part - marking code (see page 2) and date code.

ORDERING INFORMATION					
BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PAM1CAN	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.

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