

CAN BUS ESD PROTECTION DIODE


SOT-23 PACKAGE

DESCRIPTION

The PAM3CAN36 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): $\pm 8\text{kV}$ Contact, $\pm 15\text{kV}$ Air
- Compatible with IEC 61000-4-4 (EFT): 40A, 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 1.5A, 8/20 μs
- 80 Watts Peak Pulse Power per Line($t_p = 8/20\mu\text{s}$)
- Two Lines of Protection
- Low Clamping Voltage
- Low Capacitance
- Low Leakage Current
- RoHS Compliant
- REACH Compliant

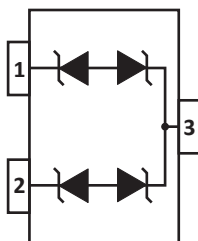
APPLICATIONS

- 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}	80	Watts
Operating Temperature	T _L	-55 to 150	°C
Storage Temperature	T _{STG}	-55 to 150	°C
Peak Pulse Current - 8/20μs	I _{PP}	1.5	Amps
ESD Voltage Level per IEC 61000-4-2 - Air	V _{ESD}	±8	kV
ESD Voltage Level per IEC 61000-4-2 - Contact	V _{ESD}	±15	kV

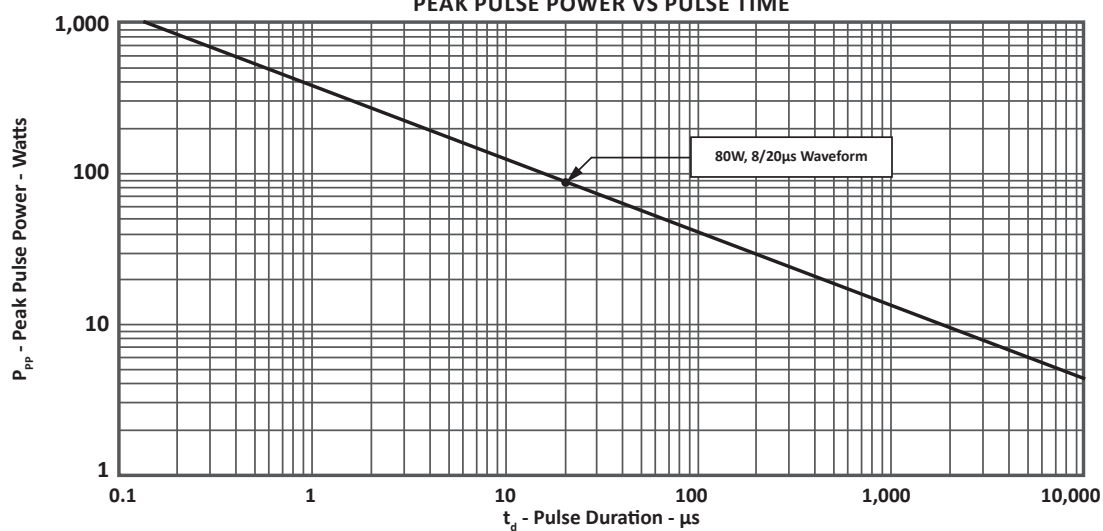
ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE V _{WM} VOLTS	BREAKDOWN VOLTAGE @ 5mA V _(BR) VOLTS			CLAMPING VOLTAGE (Fig. 2) @ I _p = 1.0A V _c VOLTS		LEAKAGE CURRENT (T _j = 25°C) @ V _{WM} I _D μA		OFF-STATE CAPACITANCE (Note 1-2) @ 0Vdc 250KHz/1MHz C pF		OFF-STATE CAPACITANCE (Note 1-2) @ 2.5V 1MHz C pF	
			MIN	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX
PAM3CAN36	P6C	36	37	42	47	52	56	0.01	0.05	4.5	6	4	5

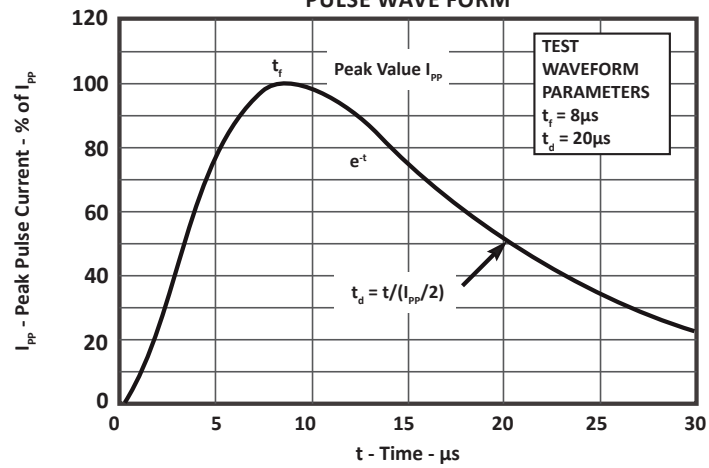
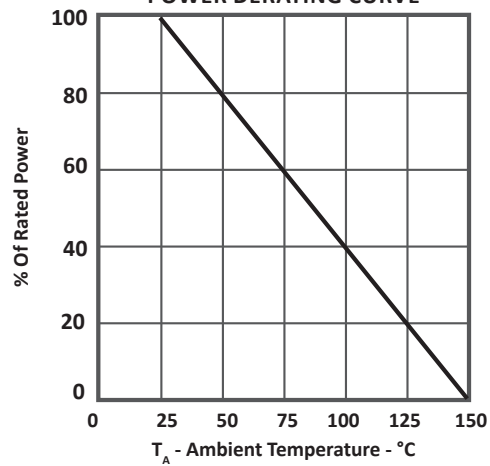
NOTE

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

FIGURE 1
PEAK PULSE POWER VS PULSE TIME



TYPICAL DEVICE CHARACTERISTICS

FIGURE 2
PULSE WAVE FORM

FIGURE 3
POWER DERATING CURVE


TYPICAL DEVICE CHARACTERISTICS

FIGURE 4
CLAMPING VOLTAGE 8/20 μ s

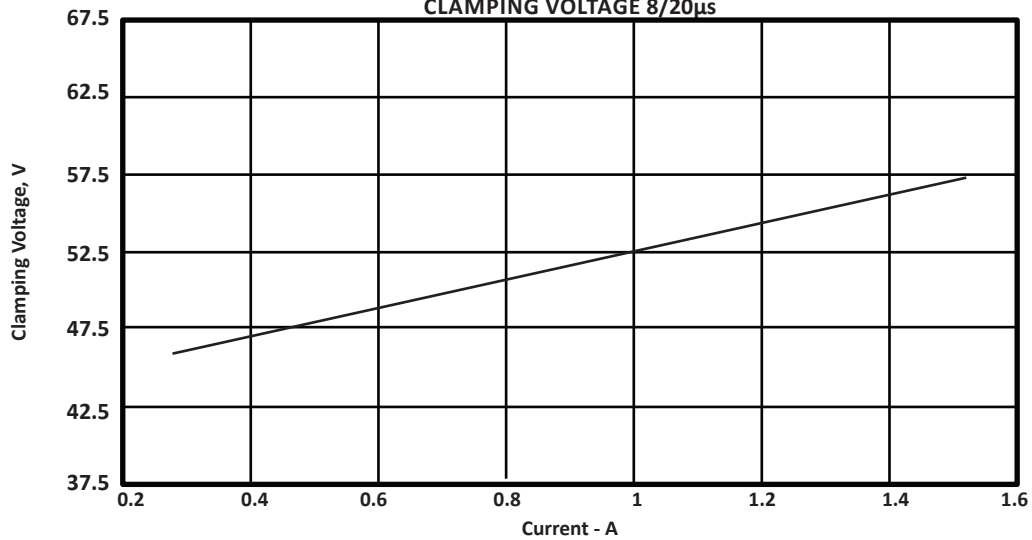
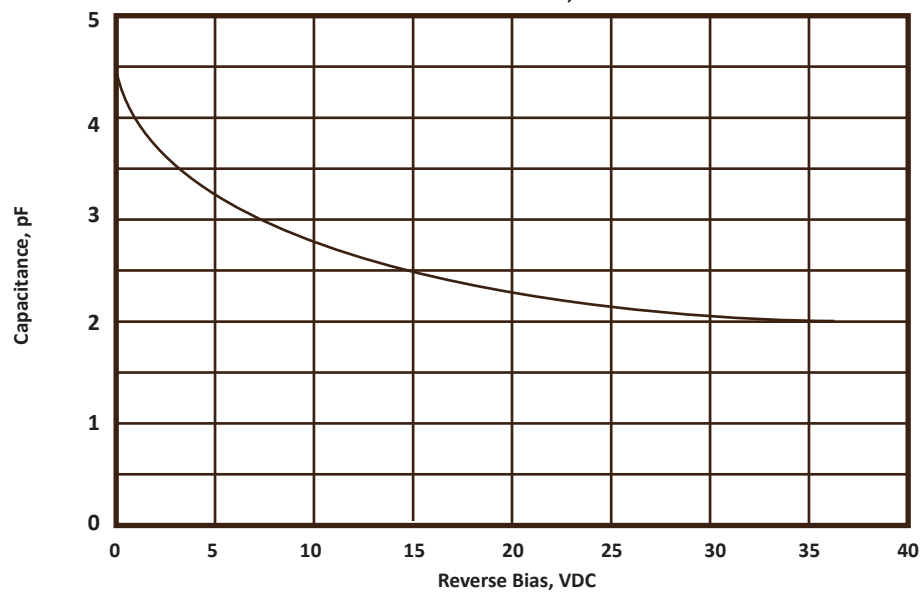


FIGURE 5
CAPACITANCE, PF

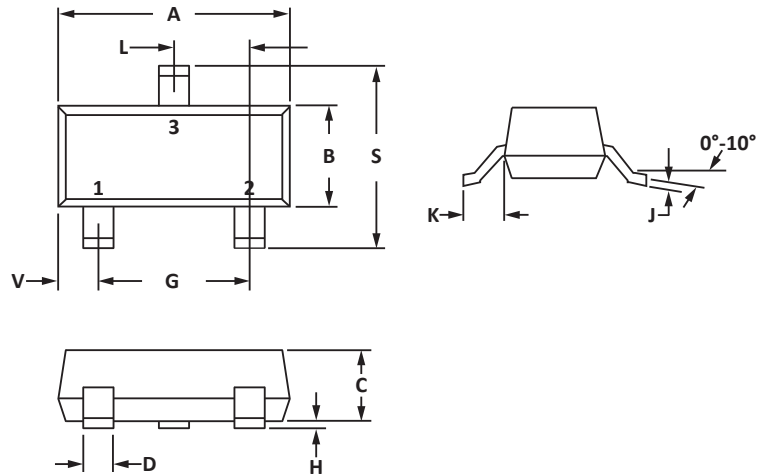


SOT-23 PACKAGE INFORMATION
OUTLINE DIMENSIONS

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

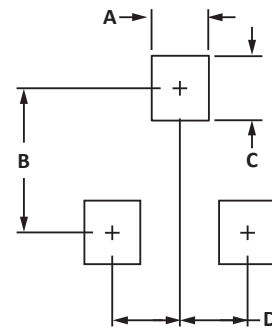
1. Controlling dimension: inches.
2. Pin 3 is the cathode (Unidirectional Only)
3. Dimensions are exclusive of mold flash and metal burrs.


PAD LAYOUT DIMENSIONS

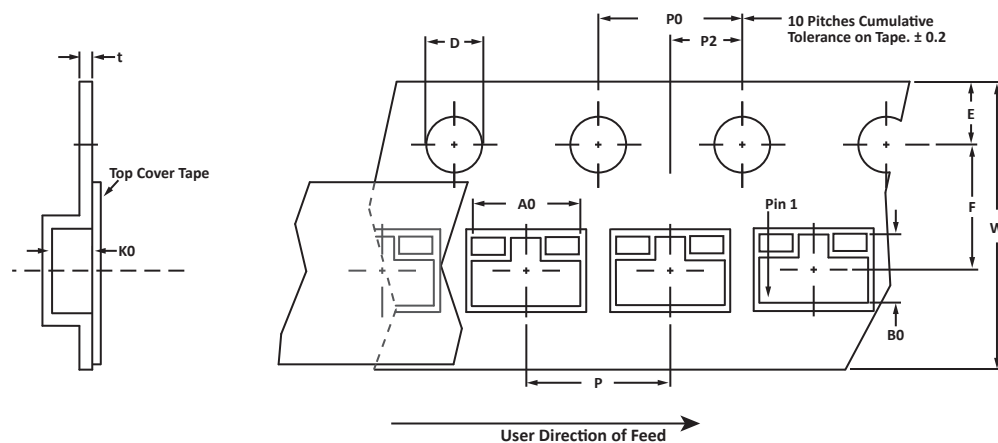
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.71	0.97	0.028	0.038
B	1.88	2.13	0.074	0.084
C	0.71	0.97	0.028	0.038
D	0.81	1.07	0.032	0.042

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. 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
PAM3CAN36	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.

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

Web

www.protekdevices.com

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