

## CAN BUS ESD PROTECTION DIODE



DFN-3

### DESCRIPTION

The PESD2CANDFN is designed to protect Controller Area Network (CAN) bus lines and other industrial applications from the damaging effects of Electrostatic Discharge (ESD) and other transients. This device is available in a 3 lead DFN package configuration and meets IEC 61000-4-2 and IEC 61000-4-4 requirements.

### FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air  $\pm 30\text{kV}$ , Contact  $\pm 30\text{kV}$
- Compatible with IEC 61000-4-5 (Surge): 1A, 8/20 $\mu\text{s}$
- 50 Watts Peak Pulse Power per Line (tp = 8/20 $\mu\text{s}$ )
- Two Lines of Protection
- ESD Protection > 25 kilovolts
- Low Clamping Voltage
- Low Capacitance
- Low Leakage Current
- RoHS Compliant
- REACh Compliant

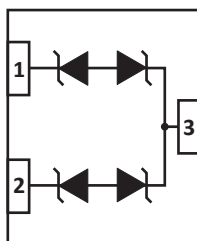
### APPLICATIONS

- CAN Bus Protection
- DeviceNet Bus Lines

### MECHANICAL CHARACTERISTICS

- Molded DFN-3 Package
- Lead-Free Plating: 100% Matte Sn(Tin)
- Solder Reflow Temperature - 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**

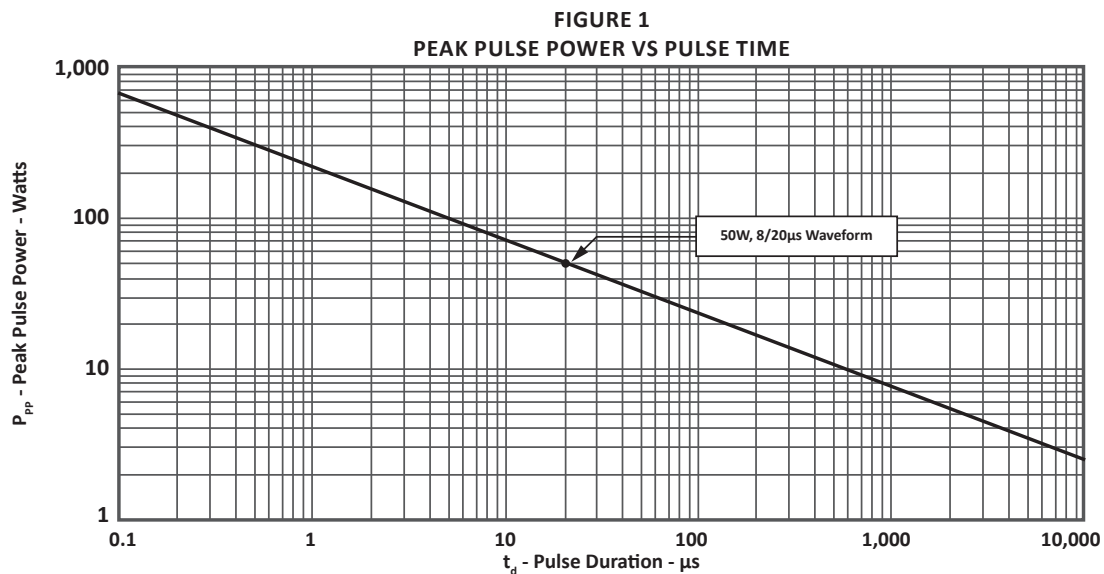
PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power (tp = 8/20μs) - See Figure 1	P <sub>PP</sub>	50	Watts
Operating Temperature	T <sub>L</sub>	-55 to 150	°C
Storage Temperature	T <sub>STG</sub>	-55 to 150	°C
Peak Pulse Current - 8/20μs	I <sub>PP</sub>	1	Amps

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

PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE  V <sub>WM</sub> VOLTS	BREAKDOWN VOLTAGE @ 5mA V <sub>(BR)</sub> VOLTS			CLAMPING VOLTAGE (Fig. 2) @ I <sub>P</sub> = 1A V <sub>C</sub> VOLTS		LEAKAGE CURRENT (T <sub>J</sub> = 25°C) @ V <sub>WM</sub> I <sub>D</sub> μA		MAXIMUM LEAKAGE CURRENT (T <sub>J</sub> = 125°C) (Note 1) @ V <sub>WM</sub> I <sub>D</sub> nA	OFF-STATE CAPACITANCE @ 0Vdc, 250KHz/1MHz C pF		CAPACITANCE @ 5Vdc, 250KHz/1MHz C pF	
			MIN	TYP	MAX	TYP	MAX	TYP	MAX		TYP	MAX	TYP	MAX
PESD2CANDFN	24B	24	25.4	28	32	45	50	0.002	0.05	100	4	6	3	4

**NOTE:**

1. Measured between pins 1 and 3 and pins 2 and 3.



## TYPICAL DEVICE CHARACTERISTICS

FIGURE 2  
PULSE WAVE FORM

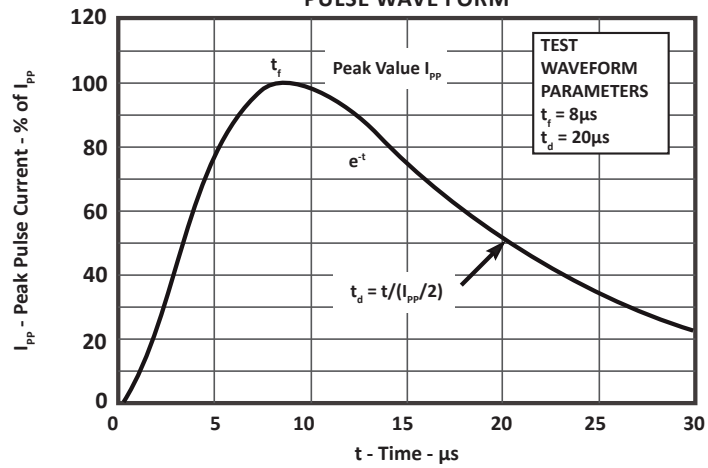
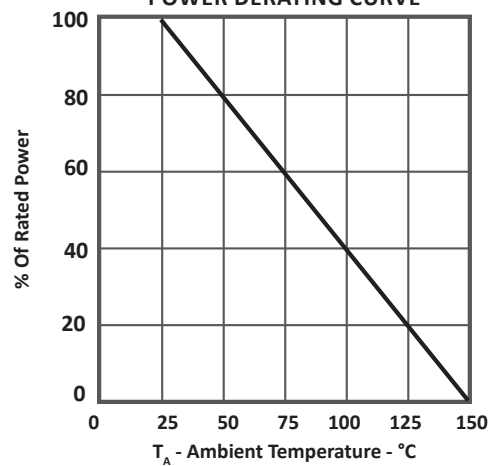


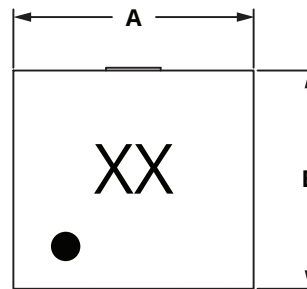
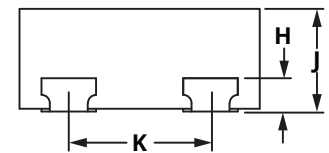
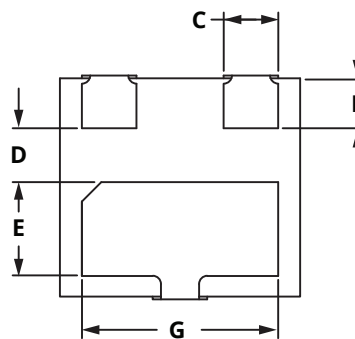
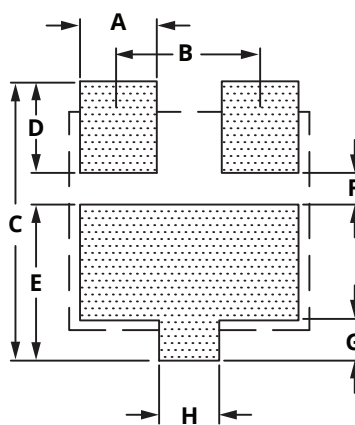
FIGURE 3  
POWER DERATING CURVE



**PACKAGE INFORMATION**
**OUTLINE DIMENSIONS**

DIM	MILLIMETERS	INCHES
A	1.10	0.043
B	1.00	0.039
C	0.25	0.010
D	0.25	0.010
E	0.43	0.017
F	0.23	0.009
G	0.90	0.035
H	0.15	0.006
J	0.47	0.019
K	0.65	0.026

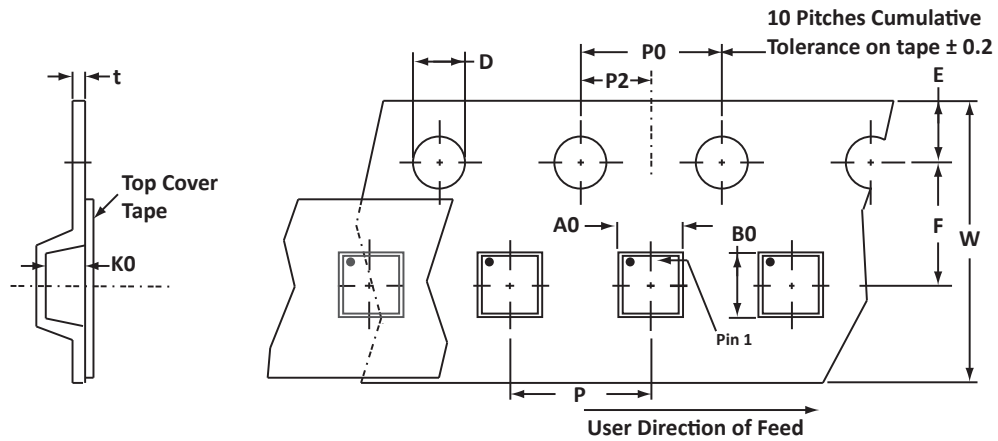
 1. Decimal tolerances, unless otherwise specified:  $\pm 0.01''$ .

**Top View**

**Side View**

**Bottom View**

**Footprint**

**PAD LAYOUT DIMENSIONS**

DIM	MILLIMETERS	INCHES
A	0.35	0.014
B	0.65	0.026
C	1.28	0.050
D	0.42	0.017
E	0.72	0.028
F	0.14	0.006
G	0.18	0.007
H	0.28	0.011

 1. Decimal tolerances, unless otherwise specified:  $\pm 0.01''$ .

## TAPE AND REEL



## SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	8mm	1.1 ± 0.10	1.2 ± 0.10	0.6 ± 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	0.228

## 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 date code.

## ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PESD2CANDFN	n/a	-T73	3000	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 an ISO 9001 certified company.

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