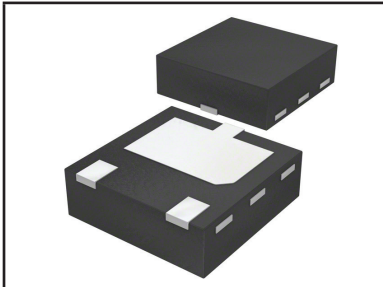


## AUTOMATION SENSOR TRANSIENT AND OVERVOLTAGE PROTECTION



**DFN2020-3 PACKAGE**

### DESCRIPTION

The PDFN2-32 is designed to protect 24 Volt proximity sensors for factory automation sensory applications. This device provides switch and reverse blocking protection and is compliant with IEC 61000-4-2, IEC 61000-4-4 and IEC 61000-4-5 standards. Available in a DFN2020-3 package configuration, the PDFN2-32 is an excellent solution where board space is at a premium.

### FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air  $\pm 15\text{kV}$ , Contact  $\pm 8\text{kV}$
- Compatible with IEC 61000-4-4 (EFT)
- Compatible with IEC 61000-4-5 (SURGE)
- Compliant for Interface with Logic Input Type 1, 2, 3 IEC 61131-2
- Double Diode Array for Switch Protection and Reverse Blocking Protection
- Minimum Breakdown Voltage ( $V_{BR}$ ): 34V
- Maximum Clamping Voltage: 55V @ 25A, 8/20 $\mu\text{s}$
- Blocking Diode Drop Forward Voltage ( $V_f$ ): 1.1V @ 300mA
- Blocking Diode Maximum 10ms Square Pulse Current ( $I_{FSM}$ ): 3A
- Ambient Operating Temperature: -40°C to 100°C
- RoHS Compliant
- REACH Compliant

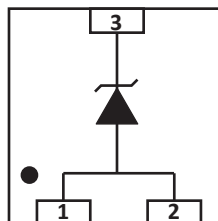
### APPLICATIONS

- Factory Automation Sensors
- Proximity Sensor Interfaces

### MECHANICAL CHARACTERISTICS

- Molded DFN2020-3 Package
- Lead-Free Plating
- Solder Reflow Temperature - 260-270°C
- 8mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

### PIN CONFIGURATION



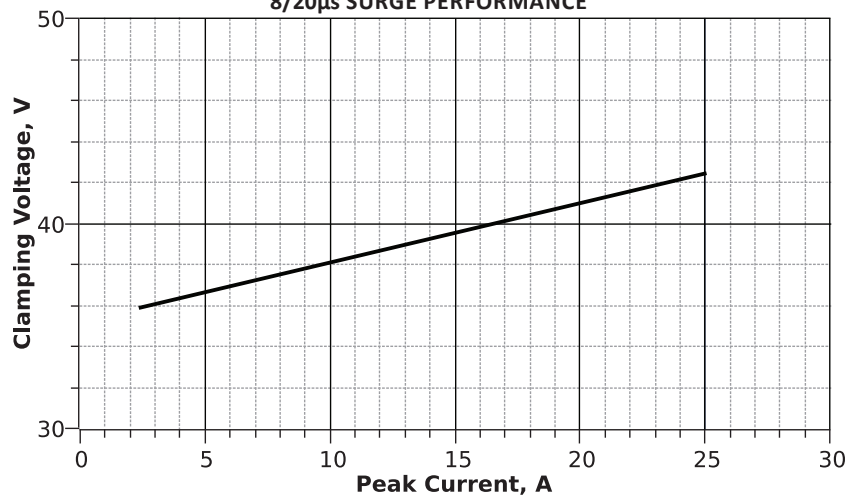
**TYPICAL DEVICE CHARACTERISTICS**
**MAXIMUM RATINGS @ 25°C Unless Otherwise Specified**

PARAMETER	SYMBOL	VALUE	UNITS
ESD Voltage Level per IEC 61000-4-2 (Air & Contact)	$V_{ESD}$	±30	kV
Peak Surge Voltage Level per IEC 61000-4-5, $R_{CC} = 500\Omega$	$V_{PP}$	1	kV
Peak Pulse Power ( $t_p = 8/20\mu s$ ) - See Figure 1	$P_{PP}$	1400	Watts
Peak Pulse Power Dissipation	$I_{PP}$	25	Amps
Storage Junction Temperature Range	$T_J$	-40 to 150	°C

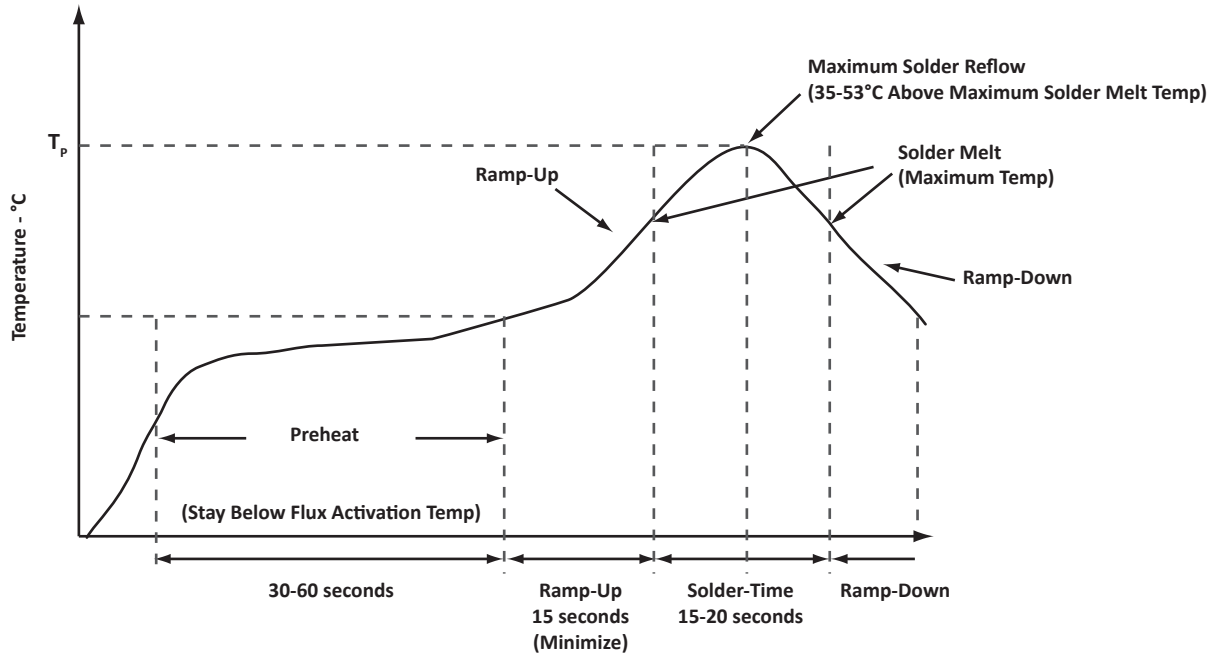
**ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified**

PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE  $V_{WM}$ VOLTS	MINIMUM BREAKDOWN VOLTAGE  @ 1mA $V_{(BR)}$ VOLTS	MAXIMUM BREAKDOWN VOLTAGE  @ 1mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2)  @ $I_P = 25A$ $V_C$ VOLTS	MAXIMUM LEAKAGE CURRENT  @ 32V $I_D$ nA	MAXIMUM LEAKAGE CURRENT  @ 32V, $T_J = 150^\circ C$ $I_D$ $\mu A$
PDFN2-32	232	32	34	37.8	55	200	5

**FIGURE 1**  
**8/20 $\mu s$  SURGE PERFORMANCE**



## PACKAGE INFORMATION

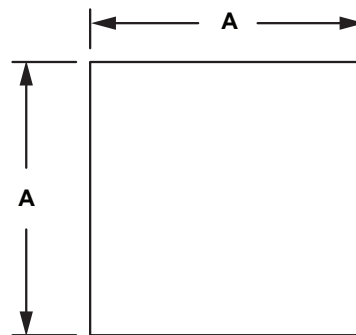
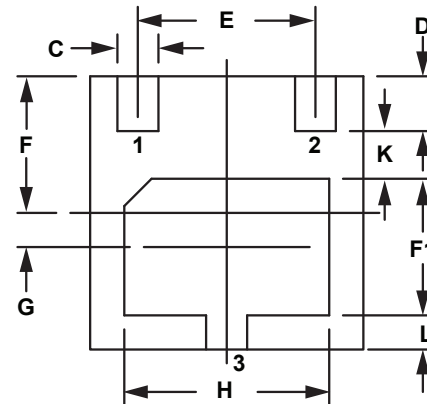
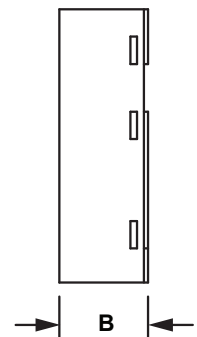


**PACKAGE INFORMATION**
**OUTLINE DIMENSIONS**

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.90	2.10	0.075	0.083
B		0.65		0.026
C	0.25	0.35	0.010	0.014
D	0.35	0.45	0.014	0.018
E	1.30		0.051	
F	0.95	1.05	0.037	0.041
F1	0.90	1.10	0.035	0.043
G	0.20	0.30	0.008	0.012
H	1.40	1.60	0.056	0.063
K	0.30	0.35	0.012	0.014
L	0.15	0.20	0.006	0.008

**NOTES**

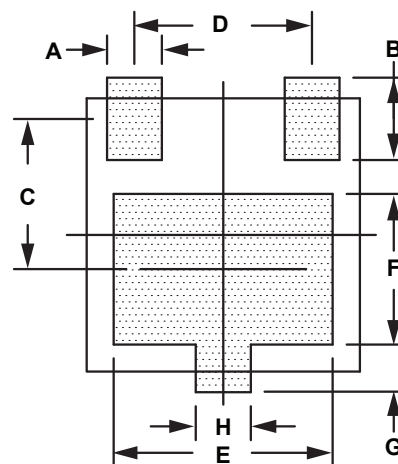
1. Dimensioning and tolerances per ANSI Y14.M, 1985.
2. Controlling dimension: inches.

**TOP VIEW**

**BOTTOM VIEW**

**SIDE VIEW**

**PAD LAYOUT DIMENSIONS**

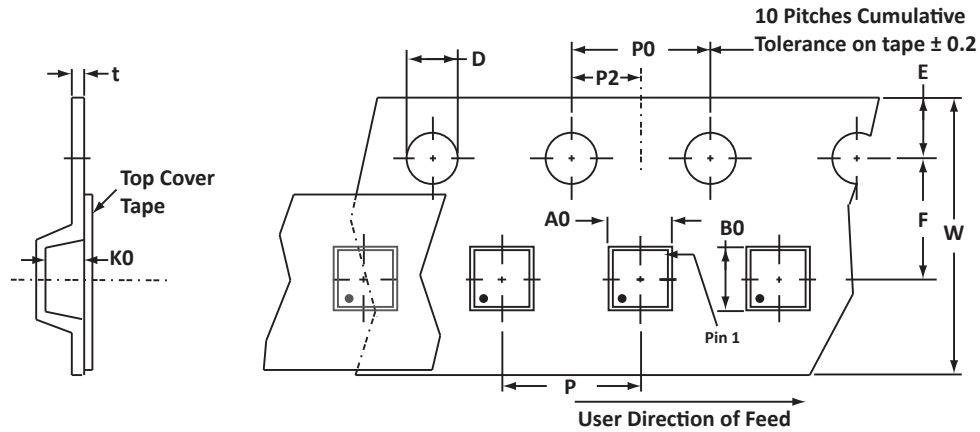
DIM	MILLIMETERS	INCHES
	NOM	NOM
A	0.40	0.016
B	0.50	0.020
C	1.05	0.041
D	1.30	0.051
E	1.60	0.063
F	1.10	0.043
G	0.25	0.010
H	0.40	0.016

**NOTES**

1. Decimal tolerances for mounting pad:  $\pm 0.003''$  ( $\pm 0.08$  mm).



## TAPE AND REEL



## SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	8mm	2.20 ± 0.05	2.20 ± 0.05	0.8 ± 0.05	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 ± 0.05	0.25

## NOTES

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- Suffix - T73 = 7" Reel - 3000 pieces per 8mm tape.
- Marking on Part - marking code and dot on package (see page 2).

## ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PDFN2-32	N/A	-T73	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 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.

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