

## HIGH POWERED SURGE PROTECTION TVS ARRAY



### DESCRIPTION

The PSD0561 is a transient voltage suppressor array, designed to protect sensitive electronics from damage or latch-up due to EOS, lightning, CDE and ESD. This device offers board level protection with its fast response time, low operating voltage and clamping voltage. The PSD0561 protects against a wide array of applications including industrial equipment, battery protection and USB interfaces.

The PSD0561 meets IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT) and IEC 61000-4-5 (Surge) requirements. The device offers low leakage current in a miniature DFN-2 package.

### FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air 30kV, Contact 30kV
- Compatible with IEC 61000-4-4 (EFT): 4kV (5/50ns)
- Compatible with IEC 61000-4-5 (Surge): 90A (8/20 $\mu$ s)
- 1400 Watts Peak Pulse Power per Line (tp = 8/20 $\mu$ s)
- Protects One Line
- Low Leakage Current
- High Peak Pulse Current Capability
- RoHS Compliant
- REACH Compliant

### APPLICATIONS

- Industrial Equipment
- Battery Protection
- USB Voltage Bus
- Tablet and Cellular Devices
- CCTV Cameras
- Instrumentation
- Microcontroller RESET and IRQ Pins

### MECHANICAL CHARACTERISTICS

- Molded JEDEC DFN-2 Package
- Approximate Weight: TBD
- Lead-Free Plating
- Solder Reflow Temperature:  
Pure-Tin - Sn, 100: 260-270°C
- 8mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

### PIN CONFIGURATION



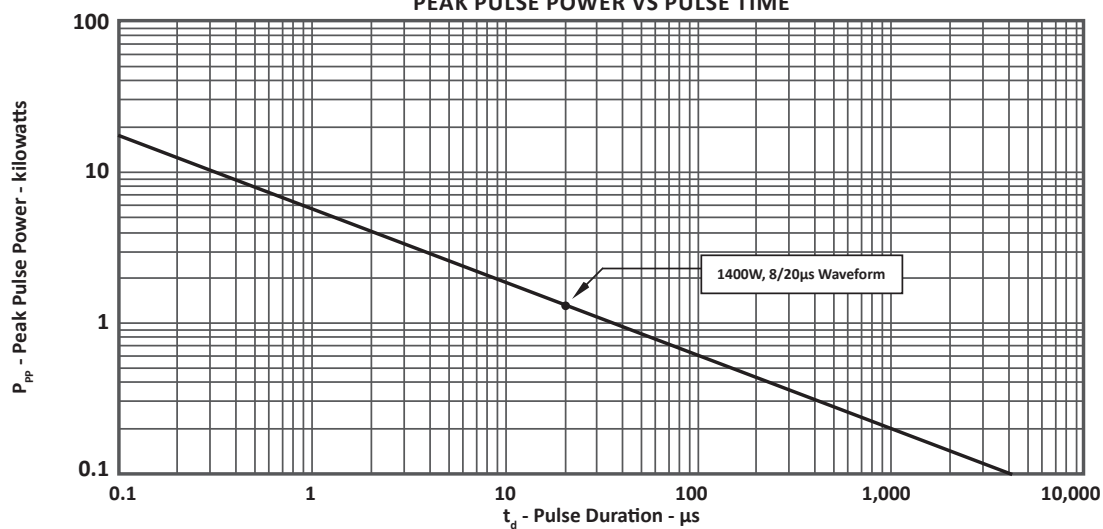
**TYPICAL DEVICE CHARACTERISTICS**
**MAXIMUM RATINGS @ 25°C Unless Otherwise Specified**

PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power ( $t_p = 8/20\mu s$ ) - See Figure 1	$P_{PP}$	1400	Watts
Peak Pulse Current ( $t_p = 8/20\mu s$ )	$I_{PP}$	90	Amps
Operating Temperature	$T_A$	-40 to 125	°C
Storage Temperature	$T_{STG}$	-55 to 150	°C
Dynamic Resistance ( $t_p = 0.2/100ns$ )	$R_{DYN}$	0.05	Ohms

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

PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE	MINIMUM BREAKDOWN VOLTAGE	MAXIMUM CLAMPING VOLTAGE (Fig. 2)	MAXIMUM CLAMPING VOLTAGE (Fig. 2)	MAXIMUM LEAKAGE CURRENT	TYPICAL CAPACITANCE
				@ 1mA $V_{(BR)}$ VOLTS	@ $I_p = 40A$ $V_c$ VOLTS		
PSD0561	561	$V_{WM}$ VOLTS	6.0	12.0	16.0	@ $V_{WM}$ $I_D$ nA	@ 0V, 1MHz $C_J$ pF
		5				300	800

**FIGURE 1**  
**PEAK PULSE POWER VS PULSE TIME**



## TYPICAL DEVICE CHARACTERISTICS

FIGURE 2  
PULSE WAVE FORM

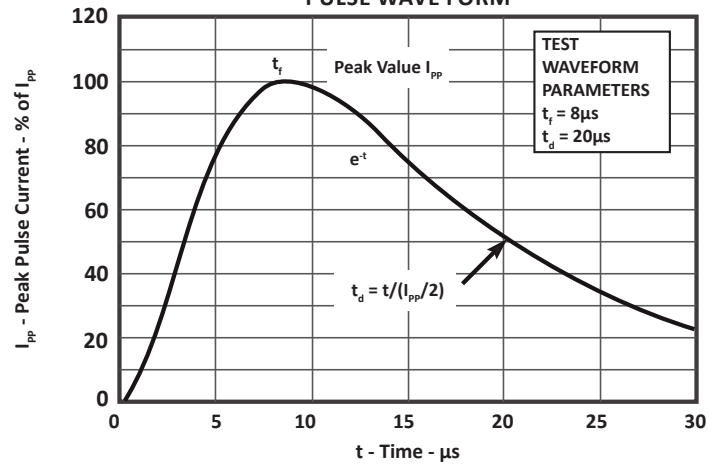
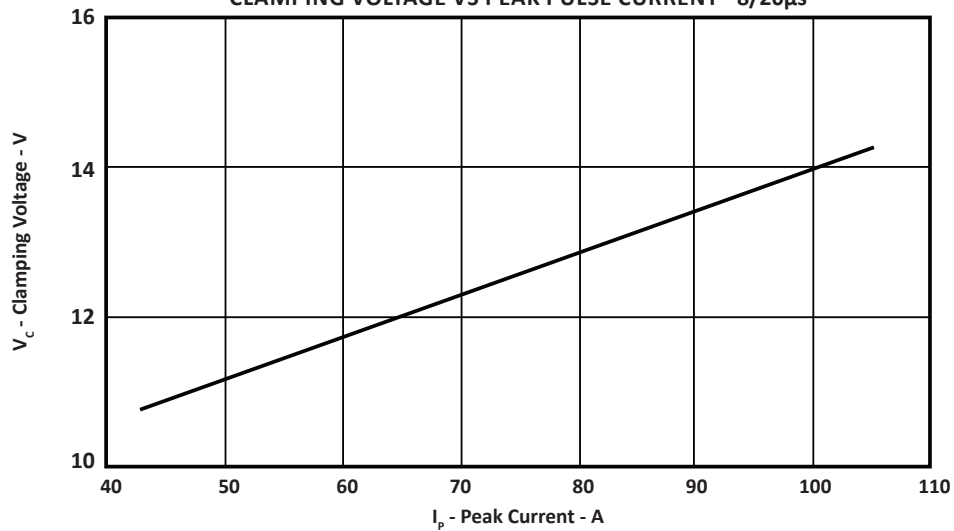
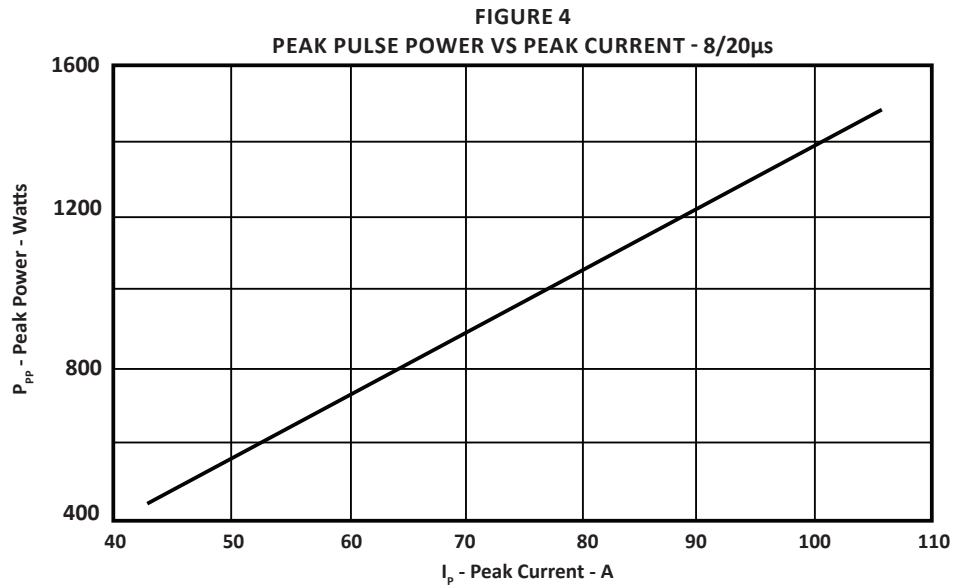


FIGURE 3  
CLAMPING VOLTAGE VS PEAK PULSE CURRENT - 8/20 $\mu s$



## TYPICAL DEVICE CHARACTERISTICS

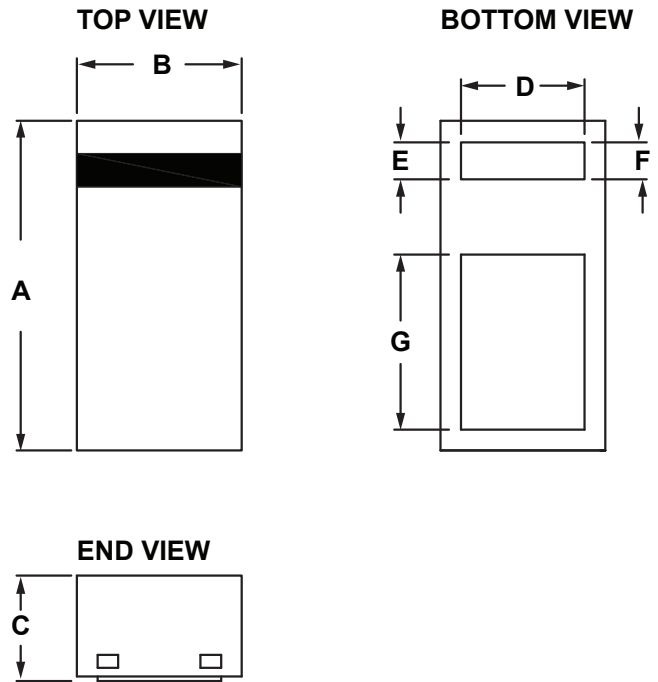


**PACKAGE INFORMATION**

OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.50	1.70	0.058	0.068
B	0.72	0.88	0.027	0.035
C	0.47	0.56	0.017	0.023
D	0.55	0.65	0.022	0.026
E	0.15	0.22	0.005	0.009
F	0.33	0.40	0.012	0.016
G	0.81	0.89	0.030	0.036

**NOTES**

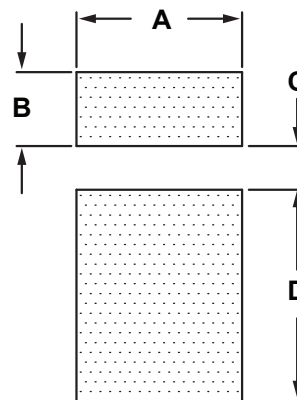
1. Dimensioning and tolerances per ANSI Y14.M, 1985.
2. Dimensions are exclusive of mold flash and metal burrs.



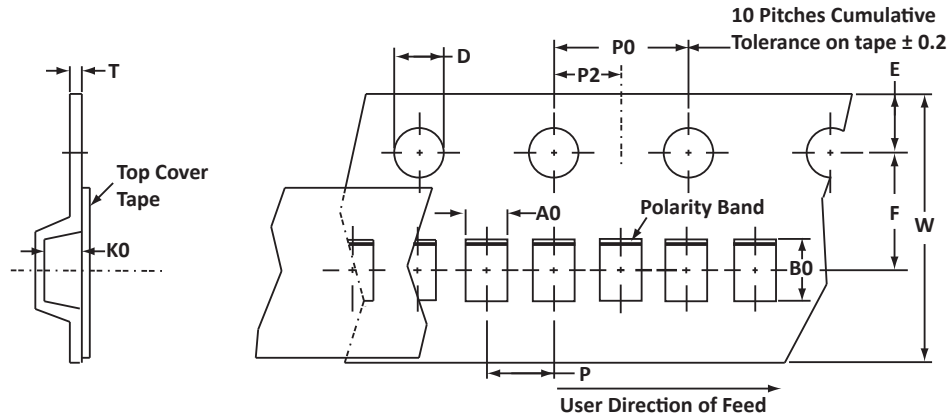
PAD LAYOUT DIMENSIONS		
DIM	MILLIMETERS	INCHES
	NOMINAL	NOMINAL
A	0.80	0.032
B	0.36	0.014
C	0.21	0.008
D	1.03	0.040

**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	0.93 ± 0.05	1.78 ± 0.10	0.63 ± 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	2.00 ± 0.05	0.25

## NOTES

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- Suffix - T710 = 7" Reel - 10,000 pieces per 8mm tape.
- Marking on Part - marking code (see page 2) and polarity band.

## ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PSD0561	n/a	-T710	10,000	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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