

## HIGH POWERED SURGE PROTECTION TVS ARRAY



### DESCRIPTION

The PSDxx61 Series are transient voltage suppressor arrays, designed to protect sensitive electronics from damage or latch-up due to EOS, lightning, CDE and ESD. These devices offer board level protection with its fast response time, low operating voltage and clamping voltage. The PSDxx61 Series protects against a wide array of applications including industrial equipment, battery protection and USB interfaces.

The PSDxx61 Series meets IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT) and IEC 61000-4-5 (Surge) requirements. These devices offer 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
- ADAS

### MECHANICAL CHARACTERISTICS

- Molded JEDEC DFN-2 Package
- Approximate Weight: 3mg
- 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**

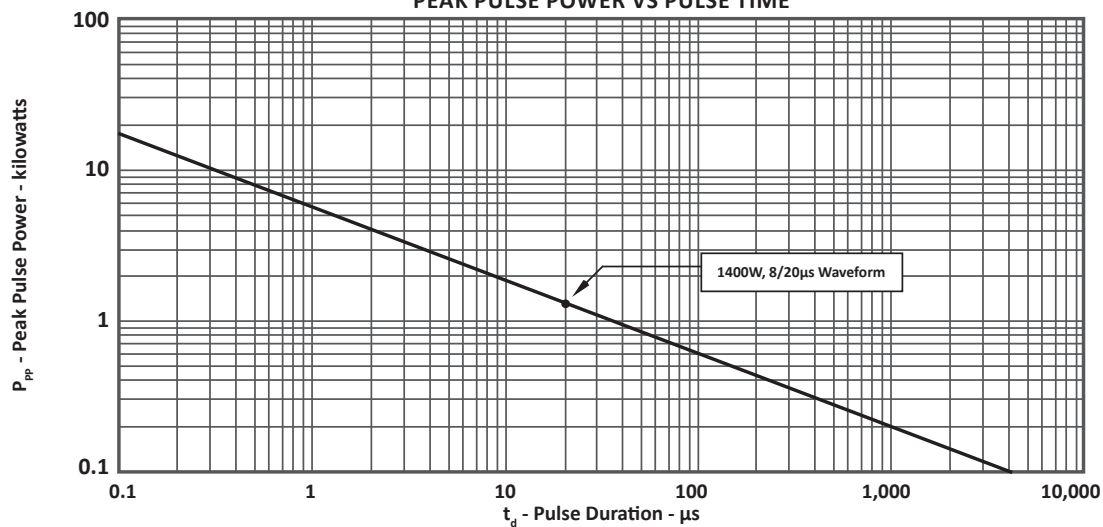
PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power ( $t_p = 8/20\mu s$ ) - See Figure 1	$P_{PP}$	1400	Watts
Peak Pulse Current ( $t_p = 8/20\mu s$ )	$I_{PP}$	90	Amps
Operating Temperature	$T_A$	-40 to 125	°C
Storage Temperature	$T_{STG}$	-55 to 150	°C
Dynamic Resistance ( $t_p = 0.2/100ns$ )	$R_{DYN}$	0.05	Ohms
ESD Voltage Level per IEC 61000-4-2 (Air and Contact)	$V_{ESD}$	±30	kV
Peak Surge Voltage Level per IEC 61000-4-5, RCC = 500 Ohms	$V_{PP}$	1	kV

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

PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE  $V_{WM}$ VOLTS	MINIMUM BREAKDOWN VOLTAGE	MAXIMUM CLAMPING VOLTAGE (Fig. 2)	MAXIMUM LEAKAGE CURRENT (Note 1)	TYPICAL CAPACITANCE
			@ 1mA $V_{(BR)}$ VOLTS	@ 8/20 $\mu s$ $V_C @ I_{PP}$	@ $V_{WM}$ $I_D$ nA	@ 0V, 1MHz $C_j$ pF
PSD0561	561	5	6.0	16.0V @ 90.0A	300	800
PSD3261	32L	32	34.0	60.0V @ 25.0A	200	300

**NOTE**

 1. Max Leakage Current for PSD3261 @ 5 $\mu A$  at 150°C.

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


## TYPICAL DEVICE CHARACTERISTICS

FIGURE 2  
PULSE WAVE FORM

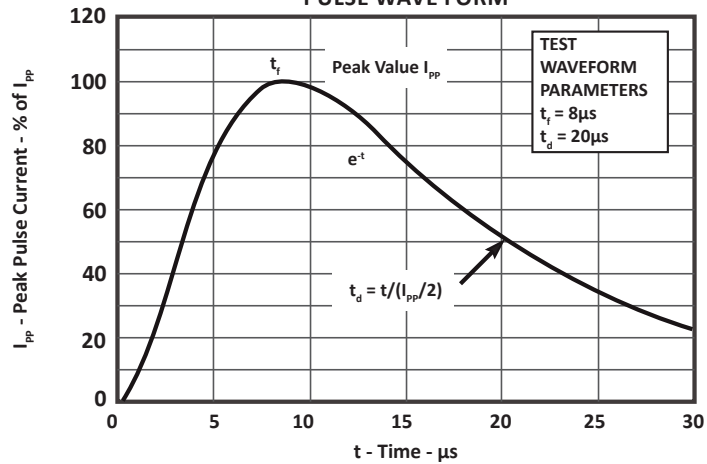


FIGURE 3  
8/20μs SURGE PERFORMANCE - PSD0561

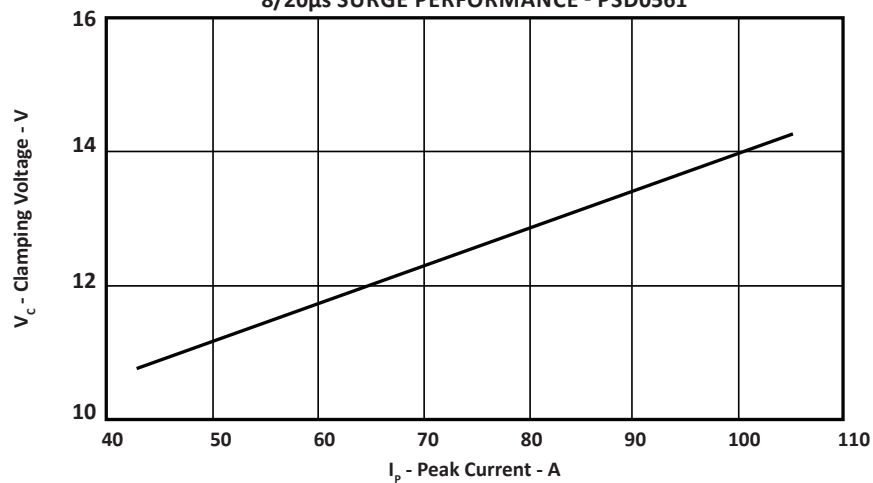
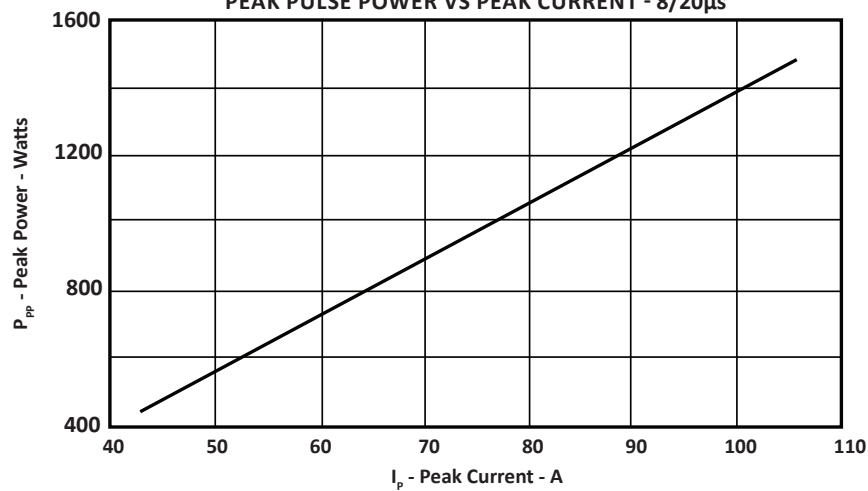
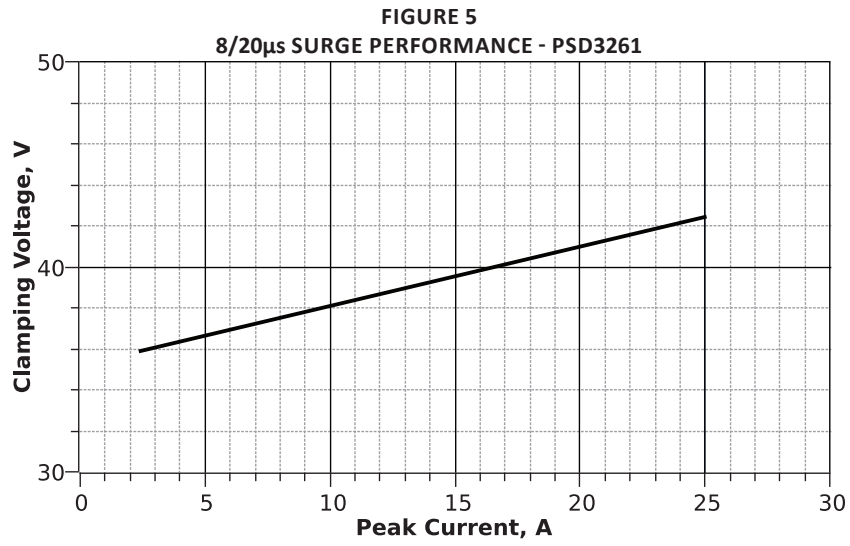


FIGURE 4  
PEAK PULSE POWER VS PEAK CURRENT - 8/20μs



**TYPICAL DEVICE CHARACTERISTICS**

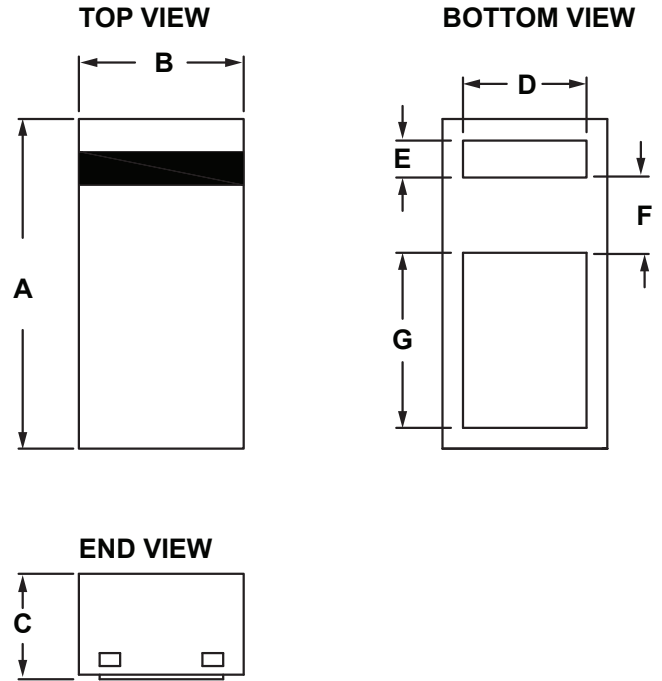


**PACKAGE INFORMATION**

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**

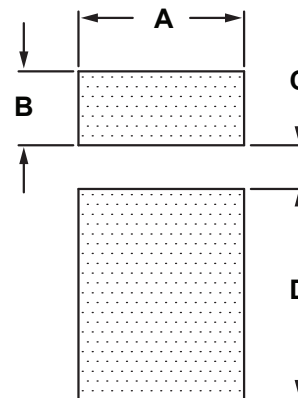
1. Dimensioning and tolerances per ANSI Y14.M, 1985.
2. Dimensions are exclusive of mold flash and metal burrs.



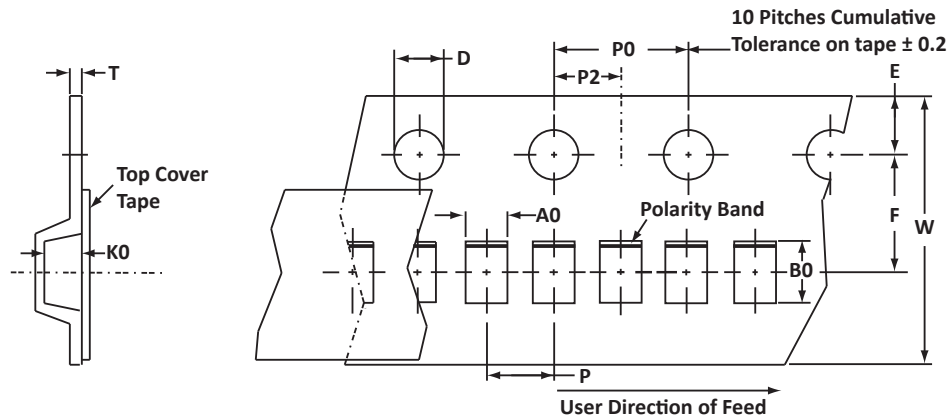
PAD LAYOUT DIMENSIONS		
DIM	MILLIMETERS	INCHES
	NOMINAL	NOMINAL
A	0.80	0.032
B	0.36	0.014
C	0.21	0.008
D	1.03	0.040

**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

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

## ORDERING INFORMATION

BASE PART NUMBER (XXXX = VOLTAGE)	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PSDxxxx	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 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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