

## 300 WATT TVS ARRAY



**SOT-23 PACKAGE**

### DESCRIPTION

The PSOT05CLP is a 5 Volt transient voltage suppressor (TVS) array, designed for power or data line applications that provide protection against ESD, tertiary lightning and switching transients. This device offers standard capacitance and low clamping voltage for protection across sensitive interfaces.

The PSOT05CLP has a peak pulse power of 300 Watts for an 8/20 $\mu$ s waveshape and can be used to protect one bidirectional line or two unidirectional lines. This device is available in SOT-23 package configuration and meets the IEC 61000-4-2, 61000-4-4 and IEC 61000-4-5 requirements.

### FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air 15kV, Contact 8kV
- Compatible with IEC61000-4-4 (EFT): 40A, 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 12A, 8/20 $\mu$ s - Level 1(Line-Ground) & Level 2 (Line-Line)
- 300 Watts Peak Pulse Power per Line(tp = 8/20 $\mu$ s)
- Low Clamping Voltage
- Bidirectional Configuration
- RoHS Compliant
- REACh Compliant

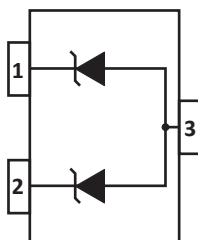
### APPLICATIONS

- RS-232, RS-422 & RS-423
- Cellular Phones
- Controlling & Monitoring Systems
- Handheld Devices
- Wireless Bus Protection

### 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



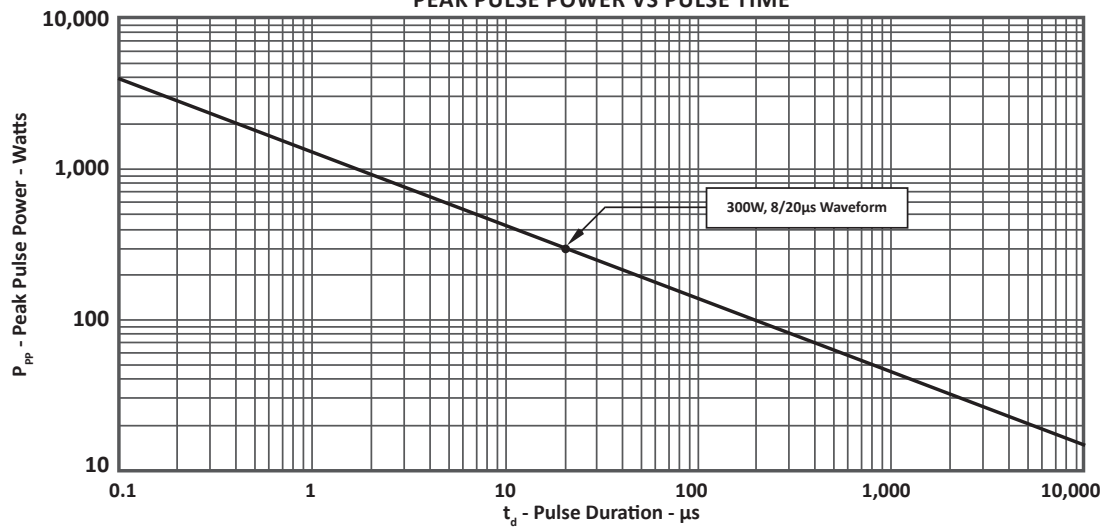
**TYPICAL DEVICE CHARACTERISTICS**
**MAXIMUM RATINGS @ 25°C Unless Otherwise Specified**

PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power (tp = 8/20μs) - See Figure 1	$P_{PP}$	300	Watts
Operating Temperature	$T_L$	-55 to 150	°C
Storage Temperature	$T_{STG}$	-55 to 150	°C
Peak Pulse Current - 8/20μs	$I_{PP(MAX)}$	20	Amps

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

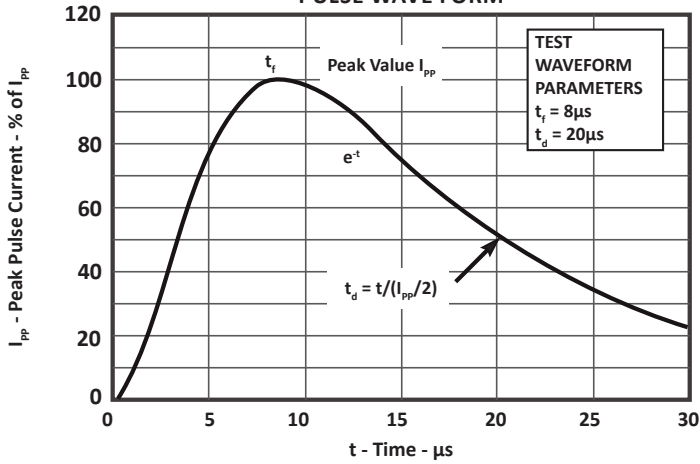
PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE  $V_{WM}$ VOLTS	MINIMUM BREAKDOWN VOLTAGE  @ 1mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ $I_p = 1A$ $V_c$ VOLTS	MAXIMUM LEAKAGE CURRENT  @ $V_{WM}$ $I_D$ μA	TYPICAL CAPACITANCE  @ 0V, 1MHz C pF
PSOT05CLP	5S	5.0	6.0	9.8	10	210

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

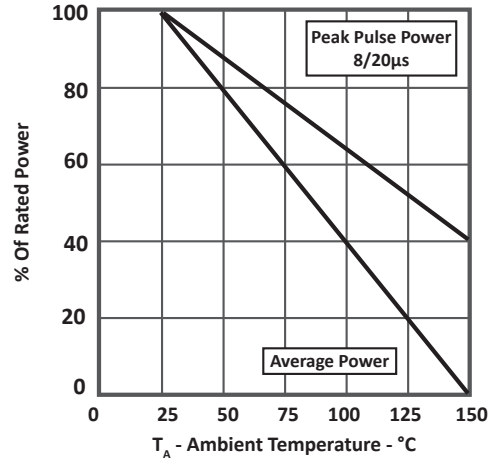


**TYPICAL DEVICE CHARACTERISTICS**

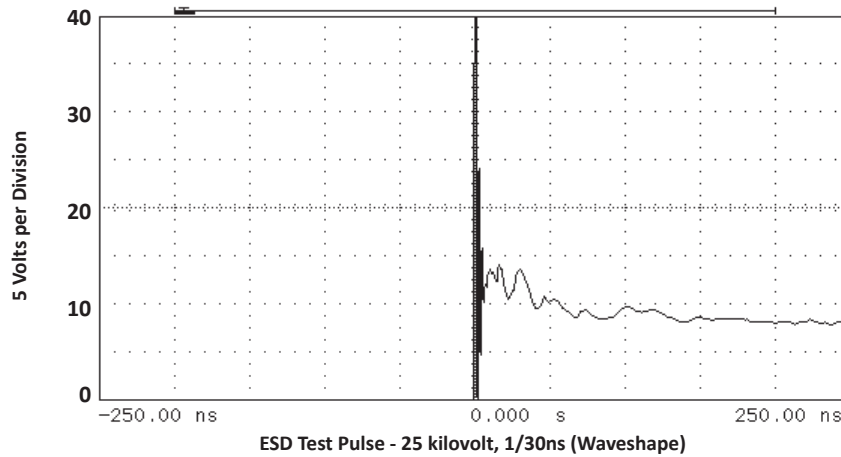
**FIGURE 2  
PULSE WAVE FORM**



**FIGURE 3  
POWER DERATING CURVE**



**FIGURE 4  
OVERSHOOT & CLAMPING VOLTAGE**



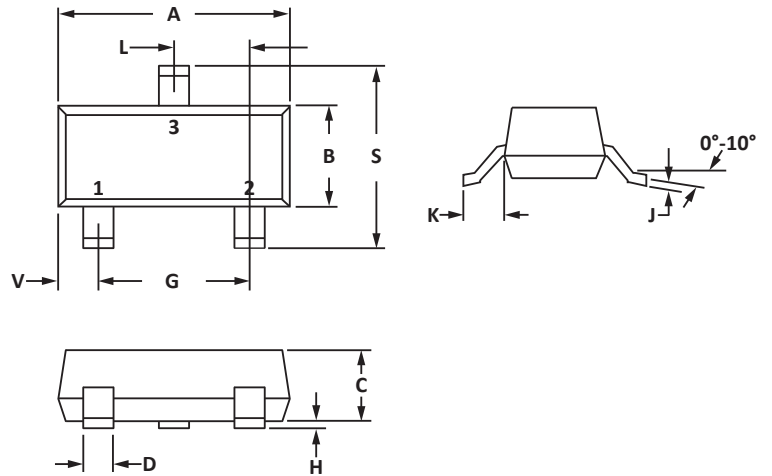
## SOT-23 PACKAGE INFORMATION

## 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

- Controlling dimension: inches.
- Dimensioning and tolerances per ANSI Y14.5M, 1985.
- Pin 3 is the cathode (Unidirectional Only)
- Dimensions are exclusive of mold flash and metal burrs.

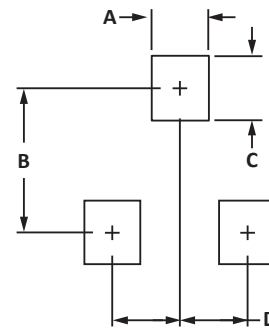


## PAD LAYOUT DIMENSIONS

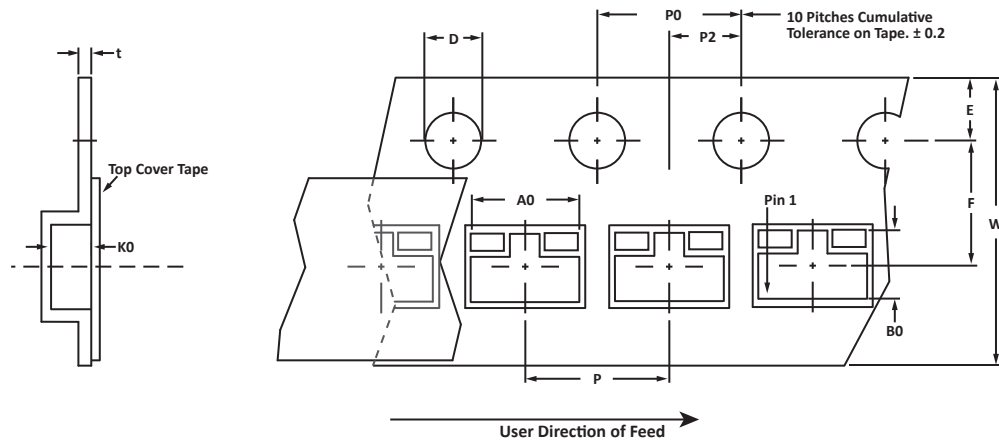
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.71	0.97	0.028	0.038
B	1.88	2.13	0.074	0.084
C	0.71	0.97	0.028	0.038
D	0.81	1.07	0.032	0.042

## NOTES

- 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

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- Suffix - T7 = 7" Reel - 3,000 pieces per 8mm tape.
- Suffix - T13 = 13" Reel - 10,000 pieces per 8mm tape.
- Marking on Part - marking code (see page 2) and date code.

Package outline, pad layout and tape specifications per document number 06012.R2 8/10.

## ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PSOT05CLP	n/a	-T7	3000	7"	n/a
PSOT05CLP	n/a	-T13	10,000	13"	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 ISO 9001:2015 certified.

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