

300 WATT TVS ARRAY



SOT-23 PACKAGE

DESCRIPTION

The PSOTxx3/C3 series are transient voltage suppressor (TVS) arrays, designed for power or data line applications that provide protection against ESD, tertiary lightning and switching transients. This series offers low clamping voltage for the protection of sensitive interfaces.

The PSOTxx3/C3 series has a peak pulse power of 300 Watts for an 8/20 μ s waveshape and is available in either a bidirectional or unidirectional configuration. This series 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 IEC 61000-4-4 (EFT): 40A, 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 16A, 8/20 μ s
- 300 Watts Peak Pulse Power per Line (tp = 8/20 μ s)
- Low Clamping Voltage
- Bidirectional and Unidirectional Configurations
- Available in Multiple Voltages
- RoHS Compliant
- REACH Compliant

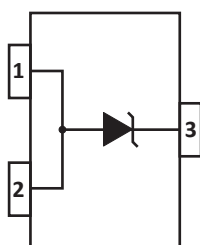
APPLICATIONS

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

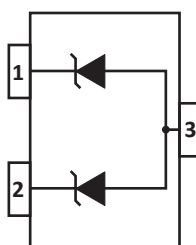
MECHANICAL CHARACTERISTICS

- 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 CONFIGURATIONS



UNIDIRECTIONAL



BIDIRECTIONAL

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
Forward Voltage @ 100mA, 300μs, Square Wave - See Note 1	V _F	1.5	Volts

NOTES

1. Applies to unidirectional pins only.

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (Note 1)	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 CLAMPING VOLTAGE (Fig. 2) @ 8/20μs V _C @ I _{PP}	MAXIMUM LEAKAGE CURRENT @V _{WM} I _D μA	TYPICAL CAPACITANCE @0V, 1MHz C pF
PSOT053	53	5.0	6.0	9.8	19.0V @ 16.0A	20	350
PSOT05C3	5C3	5.0	6.0	9.8	19.0V @ 16.0A	20	210
PSOT123	123	12.0	13.3	19.0	28.0V @ 11.0A	1	150
PSOT12C3	2C3	12.0	13.3	19.0	28.0V @ 11.0A	1	90
PSOT153	153	15.0	16.7	24.0	30.0V @ 10.0A	1	100
PSOT15C3	5C3	15.0	16.7	24.0	30.0V @ 10.0A	1	60
PSOT243	243	24.0	26.7	43.0	50.0V @ 6.0A	1	88
PSOT24C3	4C3	24.0	26.7	43.0	50.0V @ 6.0A	1	63

NOTES

1. Part Numbers with an additional "C" suffix are bidirectional devices, i.e., PSOT05C3.

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

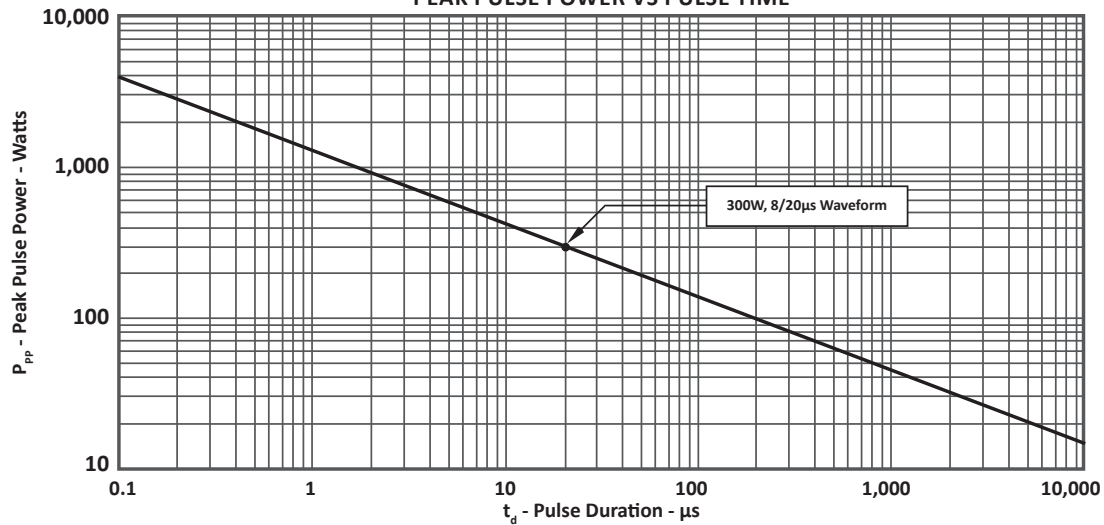


FIGURE 2
PULSE WAVE FORM

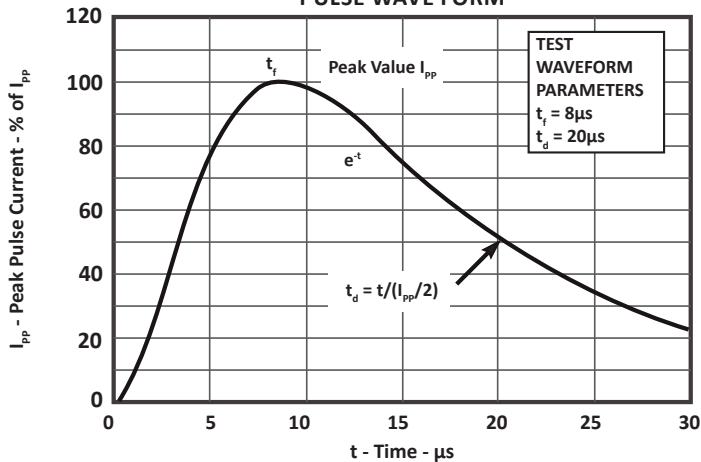
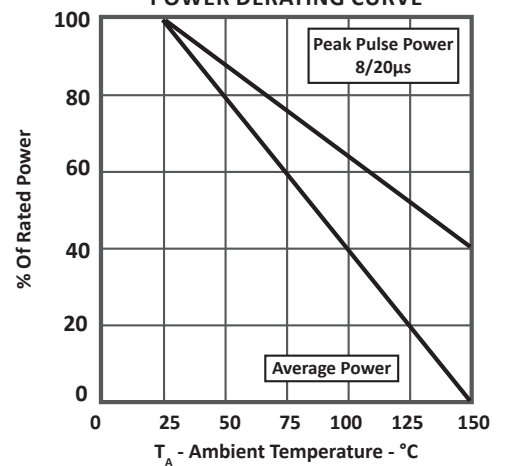


FIGURE 3
POWER DERATING CURVE

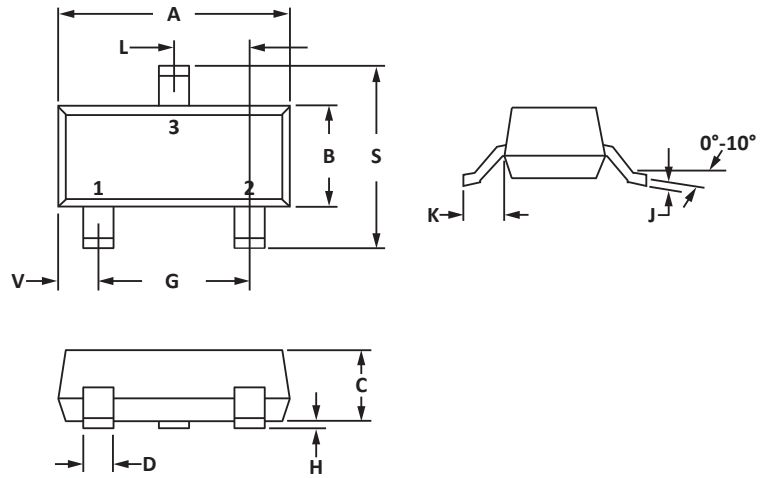


SOT-23 PACKAGE INFORMATION
OUTLINE DIMENSIONS

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

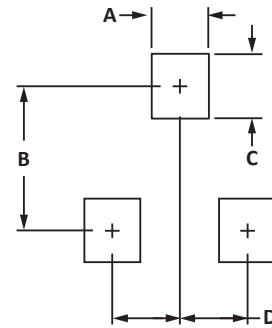
1. Controlling dimension: inches.
2. Pin 3 is the cathode (Unidirectional Only)
3. Dimensions are exclusive of mold flash and metal burrs.


PAD LAYOUT DIMENSIONS

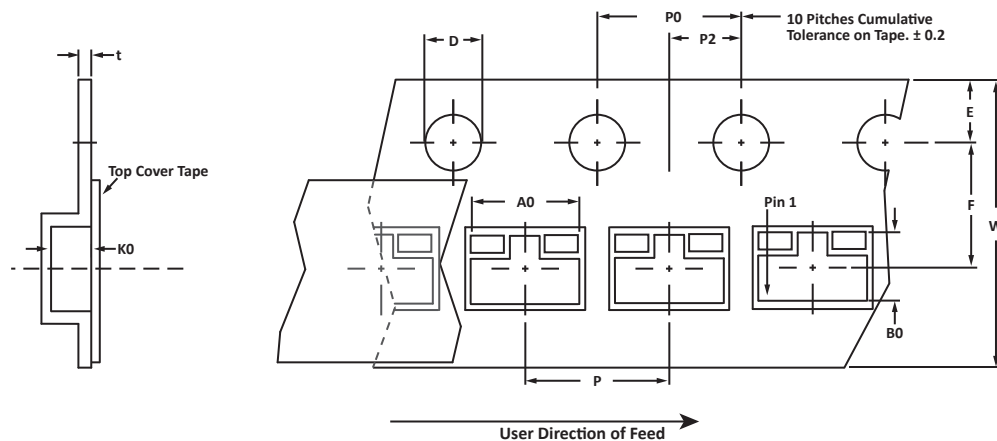
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.71	0.97	0.028	0.038
B	1.88	2.13	0.074	0.084
C	0.71	0.97	0.028	0.038
D	0.81	1.07	0.032	0.042

NOTES

1. 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

1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Marking on Part - marking code (see page 2) and date code.

ORDERING INFORMATION

BASE PART NUMBER (xx = Voltage)	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PSOTxx3/PSOTxxC3	n/a	-T73	3000	7"	n/a
PSOTxx3/PSOTxxC3	n/a	-T13	10,000	13"	n/a

This device is only available in a Lead-Free configuration.

COMPANY INFORMATION

COMPANY PROFILE

In business more than 30 years, ProTek Devices™ is a privately held semiconductor company. The company offers a product line of overvoltage protection that include Transient Voltage Suppressor (TVS) Arrays, Steering Diode Array Hybrids, High-power Components and Modules, as well as Steering Diodes, EMI Filter/TVS Arrays and Thyristor Surge Suppressors. These components deliver circuit protection in electronic systems from numerous overvoltage events. They include lightning; electrostatic discharge (ESD); nuclear electromagnetic pulses (NEMP); inductive switching; and electromagnetic interference (EMI) / radio frequency interference (RFI). ProTek Devices is an ISO 9001 certified company.

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