

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}	500	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
PSOT03	03	3.3	4.0	6.5	10.9V @ 43.0A	125	500
PSOT03C	03C	3.3	4.0	7.0	10.9V @ 43.0A	125	300
PSOT05	05	5.0	6.0	9.8	13.5V @ 42.0A	20	350
PSOT05C	05C	5.0	6.0	9.8	13.5V @ 42.0A	20	210
PSOT08	08	8.0	8.5	13.4	16.9V @ 34.0A	10	250
PSOT08C	08C	8.0	8.5	13.4	16.9V @ 34.0A	10	150
PSOT12	12	12.0	13.3	19.0	25.9V @ 21.0A	2	150
PSOT12C	12C	12.0	13.3	19.0	25.9V @ 21.0A	2	90
PSOT15	15	15.0	16.7	24.0	30.0V @ 17.0A	1	100
PSOT15C	15C	15.0	16.7	24.0	30.0V @ 17.0A	1	60
PSOT24	24	24.0	26.7	43.0	49.0V @ 12.0A	1	88
PSOT24C	24C	24.0	26.7	43.0	49.0V @ 12.0A	1	63
PSOT36	36	36.0	40.0	51.0	76.8V @ 9.0A	1	80
PSOT36C	36C	36.0	40.0	51.0	76.8V @ 9.0A	1	60

NOTES

1. Part Numbers with an additional "C" suffix are bidirectional devices, i.e., PSOT05C.

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FIGURE 1
PEAK PULSE POWER VS PULSE TIME

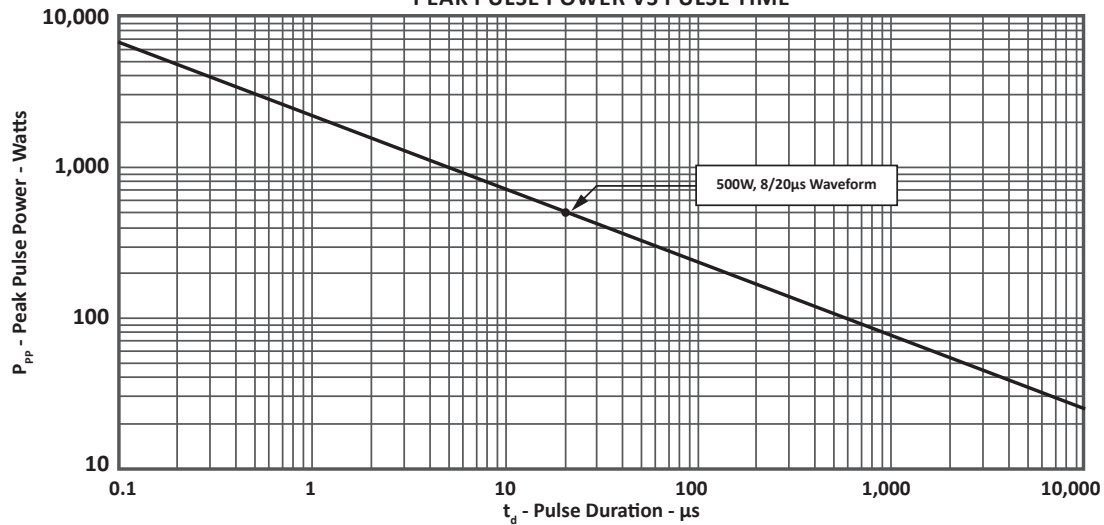


FIGURE 2
PULSE WAVE FORM

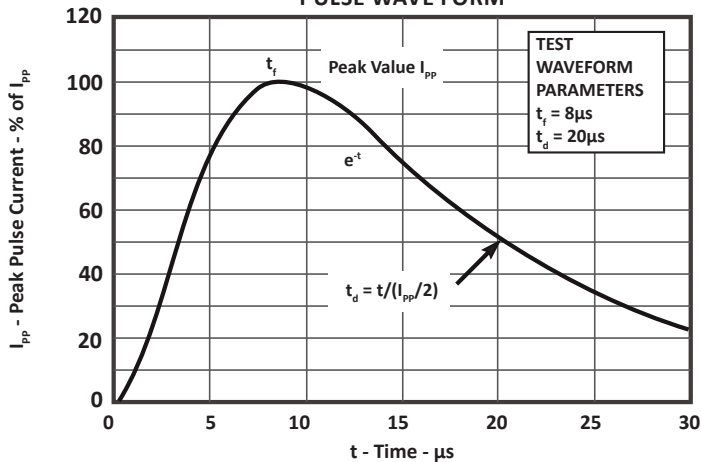
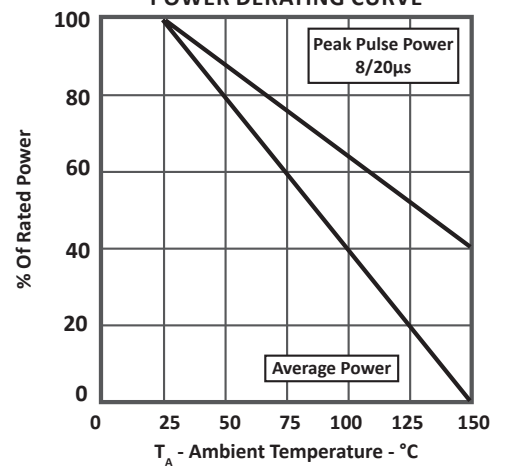
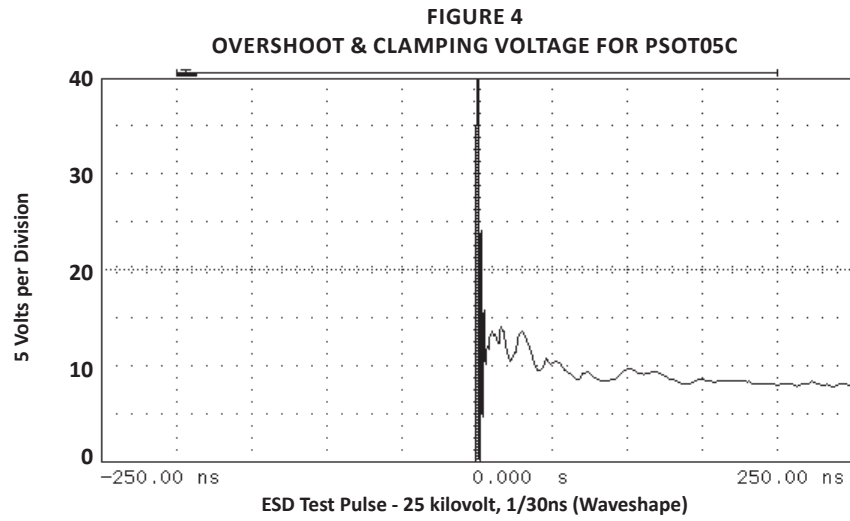
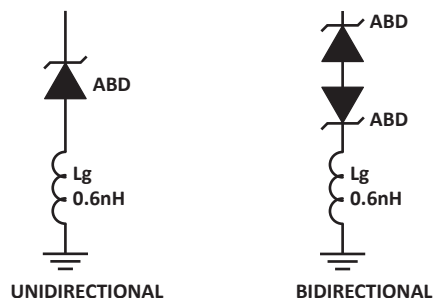


FIGURE 3
POWER DERATING CURVE



TYPICAL DEVICE CHARACTERISTICS

SPICE MODEL

 FIGURE 1
 SPICE MODEL FOR


ABD - Avalanche Breakdown Diode (TVS)
 Lg - Lead Inductance

TABLE 1 - SPICE PARAMETERS

PARAMETER	UNIT	ABD(TVS)
BV	V	See Table 2
IBV	μA	1
C_{jo}	pF	See Table 2
I_s	A	See Table 2
Vj	V	0.6
M	-	0.33
N	-	1
R_s	Ohms	See Table 2
TT	s	1E-8
EG	eV	1.11

TABLE 2 - ABD SPECIFIC SPICE PARAMETERS

PART NUMBER	B_v (VOLTS)	C_{jo} (pF)	I_s (AMPS)	R_s (OHMS)
PSOT03	4.5	438	1E-13	0.21
PSOT05	6.0	284	1E-13	0.21
PSOT08	8.5	146	1E-13	0.21
PSOT12	13.3	123	1E-13	0.21
PSOT15	16.7	102	1E-13	0.21
PSOT24	26.7	61	1E-13	0.21
PSOT36	40.0	40	1E-13	0.21
PSOT03C	4.5	219	1E-13	0.28
PSOT05C	6.0	142	1E-13	0.28
PSOT08C	8.5	73	1E-13	0.28
PSOT12C	13.3	62	1E-13	0.28
PSOT15C	16.7	51	1E-13	0.28
PSOT24C	26.7	30	1E-13	0.28
PSOT36C	40.0	20	1E-13	0.28

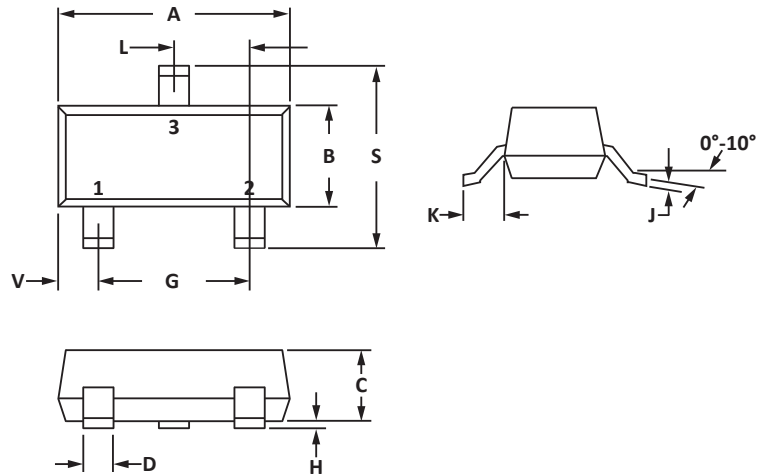
SOT-23 PACKAGE INFORMATION

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

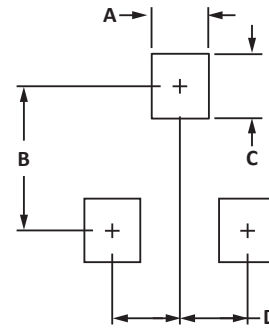


PAD LAYOUT DIMENSIONS

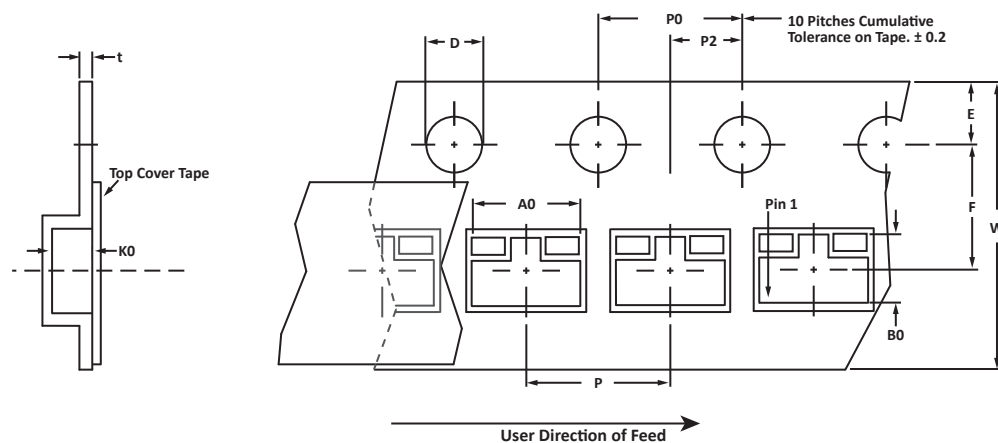
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.71	0.97	0.028	0.038
B	1.88	2.13	0.074	0.084
C	0.71	0.97	0.028	0.038
D	0.81	1.07	0.032	0.042

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. Suffix - T7 = 7" Reel - 3,000 pieces per 8mm tape.
4. Suffix - T13 = 13" Reel - 10,000 pieces per 8mm tape.
5. 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 (xx = Voltage)	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PSOTxx/PSOTxxC	-LF	-T7	3000	7"	n/a
PSOTxx/PSOTxxC	-LF	-T13	10,000	13"	n/a

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

COMPANY INFORMATION

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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