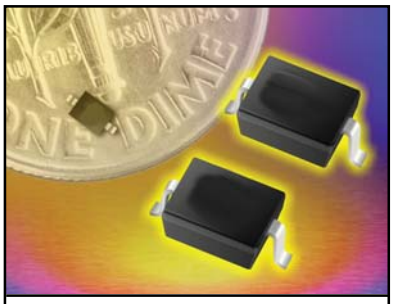
PROTEK DEVICES
Only One Name Means ProTek'Tion™

PSD03 thru PSD36C

STANDARD CAPACITANCE TVS ARRAY

APPLICATIONS

- ✔ Laptop Computers
- ✔ Cellular Phones
- ✔ Digital Cameras
- ✔ Personnal Digital Assistant (PDA)



SOD-323

IEC COMPATIBILITY (EN61000-4)

- ✔ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✔ 61000-4-4 (EFT): 40A - 5/50ns
- ✔ 61000-4-5 (Surge): 24A, 8/20µs - Level 2(Line-Ground) & Level 3(Line-Line)

FEATURES

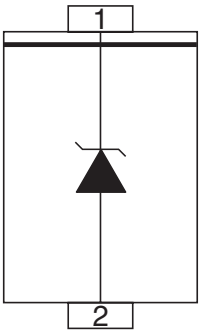
- ✔ Unidirectional: 500 Watts Peak Pulse Power per Line (tp = 8/20µs)
- ✔ BidirectionalL 400 Watts Peak Pulse Power per Line (tp = 8/20µs)
- ✔ Unidirectional & Bidirectional Configurations
- ✔ Replacement for MLV (0805)
- ✔ Protects One Power or I/O Port
- ✔ ESD Protection > 40 kilovolts
- ✔ Low Clamping Voltage
- ✔ Available in Multiple Voltage Types Ranging from 3V to 36V
- ✔ RoHS Compliant in Lead-Free Versions

MECHANICAL CHARACTERISTICS

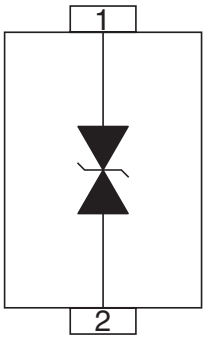
- ✔ Molded JEDEC SOD-323
- ✔ Weight 5 milligrams (Approximate)
- ✔ Available in Tin-Lead or Lead-Free Pure-Tin Plating(Annealed)
- ✔ Solder Reflow Temperature:
  - Tin-Lead - Sn/Pb, 85/15: 240-245°C
  - Pure-Tin - Sn, 100: 260-270°C
- ✔ Flammability Rating UL 94V-0
- ✔ 8mm Tape and Reel Per EIA Standard 481
- ✔ Device Marking: Marking Code & Polarity Band *(Unidirectional Only)*

PIN CONFIGURATIONS

UNIDIRECTIONAL



BIDIRECTIONAL



DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified			
PARAMETER	SYMBOL	VALUE	UNITS
Undirectional: Peak Pulse Power (t_p = 8/20µs) - See Fig. 1	P_{PP}	500	Watts
Bidirectional: Peak Pulse Power (t_p = 8/20µs) - See Fig. 1	P_{PP}	400	Watts
Operating Temperature	T_J	-55°C to 150°C	°C
Storage Temperature	T_{STG}	-55°C to 150°C	°C

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified							
PART NUMBER (See Notes 1-2)	DEVICE MARKING	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE @ 1mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 2) @ I_P = 1A V_C VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 2) @8/20µs V_C @ I_{PP}	MAXIMUM LEAKAGE CURRENT @V_{WM} I_D µA	TYPICAL CAPACITANCE @0V, 1 MHz C_J pF
PSD03	A	3.3	4.0	6.5	10.9V @ 43.0A	125	500
PSD03C	G	3.3	4.0	7.0	10.9V @ 39.0A	125	200
PSD05	B	5.0	6.0	9.8	13.5V @ 42.0A	10	350
PSD05C	H	5.0	6.0	9.8	14.5V @ 28.0A	10	175
PSD08	C	8.0	8.5	13.4	16.9V @ 34.0A	10	250
PSD08C	J	8.0	8.5	13.4	18.5V @ 17.0A	10	150
PSD12	D	12.0	13.3	19.0	25.9V @ 21.0A	1	150
PSD12C	K	12.0	13.3	19.0	29.5V @ 14.0A	1	50
PSD15	E	15.0	16.7	24.0	30.0V @ 17.0A	1	100
PSD15C	L	15.0	16.7	24.0	33.0V @ 12.0A	1	40
PSD18	G	18.0	20.0	29.0	40.0V @ 9.0A	1	90
PSD18C	N	18.0	20.0	29.0	40.0V @ 9.0A	1	40
PSD24	F	24.0	26.7	43.0	49.0V @ 12.0A	1	88
PSD24C	M	24.0	26.7	43.0	46.2V @ 9.0A	1	40
PSD36	R	36.0	40.0	60.0	75.0V @ 5.0A	1	75
PSD36C	T	36.0	40.0	60.0	75.0V @ 5.0A	1	35

Note 1: Part numbers with an additional “C” suffix are bidirectional devices, i.e., PSD05C.
Note 2: *For Bidirectional Devices Only:* Electrical characteristics apply in both directions.

GRAPHS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

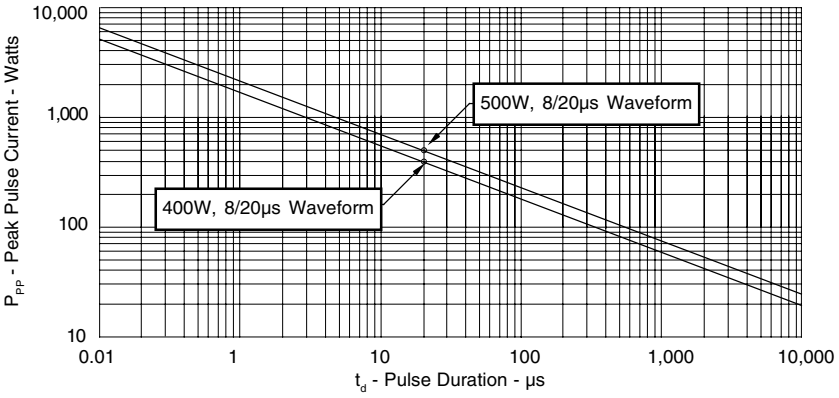


FIGURE 2
PULSE WAVE FORM

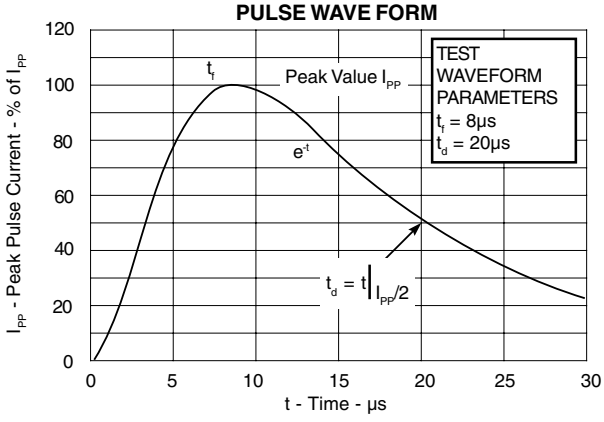


FIGURE 3
POWER DERATING CURVE

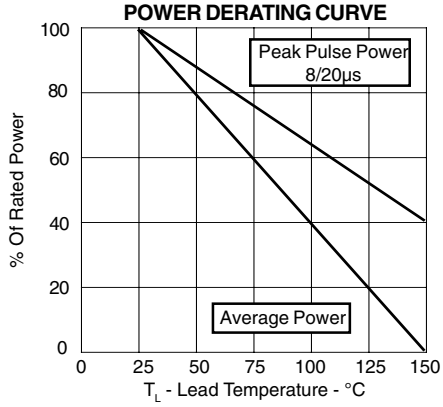


FIGURE 4
OVERSHOOT & CLAMPING VOLTAGE FOR PSD03

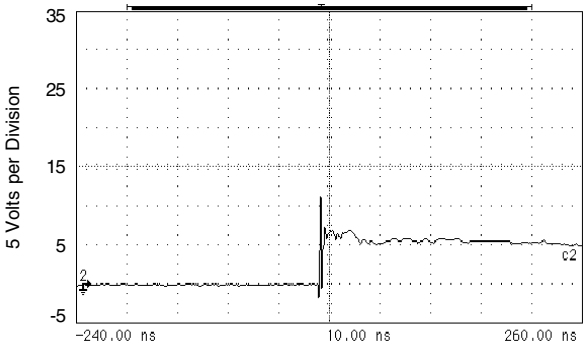
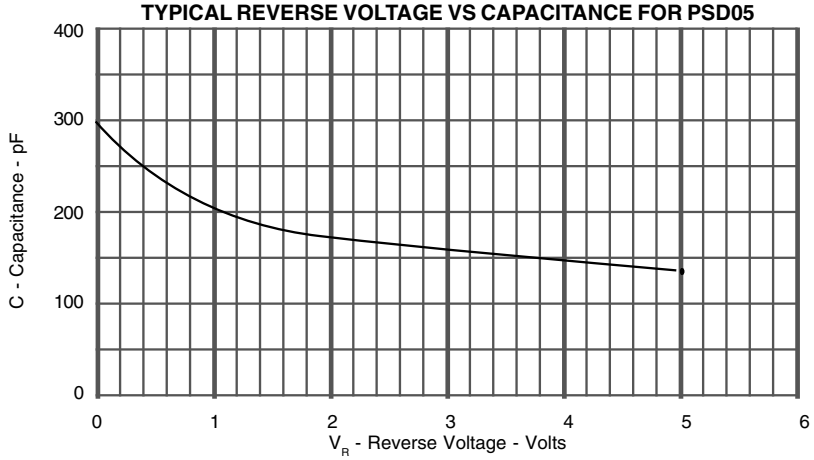
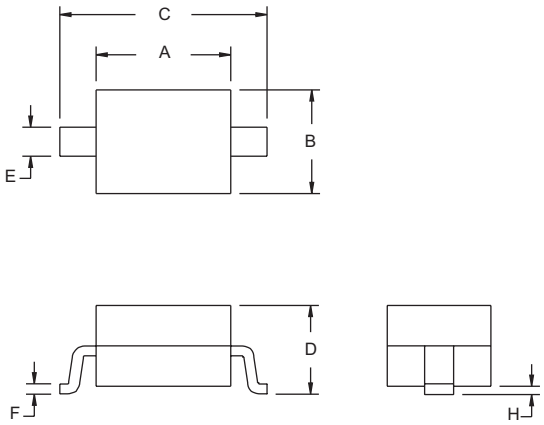


FIGURE 5
TYPICAL REVERSE VOLTAGE VS CAPACITANCE FOR PSD05



PACKAGE OUTLINE & DIMENSIONS

PACKAGE OUTLINE

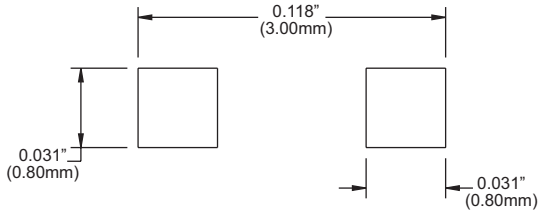


SOD-323 PACKAGE

PACKAGE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.60	1.90	0.063	0.075
B	1.15	1.45	0.045	0.057
C	2.39	2.70	0.094	0.106
D	0.92	1.10	0.033	0.043
E	0.25	0.40	0.010	0.016
F	0.10	0.20	0.004	0.008
H	-	0.10	-	0.004

MOUNTING PAD



NOTES

1. Controlling Dimensions in Millimeters.
2. Dimensions are exclusive of mold flash and metal burrs.

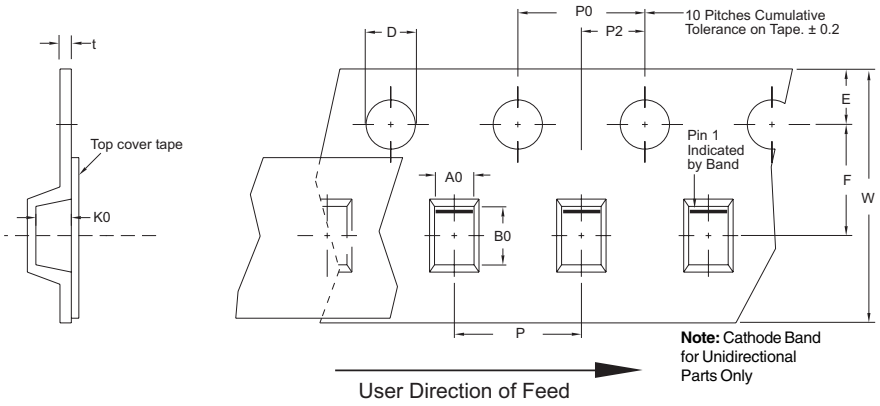
TAPE & REEL ORDERING NOMENCLATURE

1. Surface mount product is taped and reeled in accordance with EIA-481.
2. Suffix -T7 = 7 Inch Reel - 3,000 pieces per 8mm tape, i.e., *PSD05C-T7.*
3. Suffix - LF = Lead-Free, Pure-Tin Plating,i.e., *PSD05C-LF-T7.*

Outline & Dimensions: Rev 2 - 9/05, 06010

Tape & Reel Specifications (Dimensions in millimeters)

Reel Dia.	Tape Width	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	8mm	1.55 ± 0.10	2.90 ± 0.10	1.35 ± 0.10	1.50 ± 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	0.25



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