

## APPLICATIONS

- ✓ Laptop Computers
- ✓ Cellular Phones
- ✓ Digital Cameras
- ✓ Personal Digital Assistant (PDA)

## IEC COMPATIBILITY (EN61000-4)

- ✓ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✓ 61000-4-4 (EFT): 40A - 5/50ns
- ✓ 61000-4-5 (Surge): 24A, 8/20 $\mu$ s - Level 2(Line-Gnd) & Level 3(Line-Line)

## FEATURES

- ✓ Unidirectional: 500 Watts Peak Pulse Power per Line ( $t_p = 8/20\mu$ s)
- ✓ Bidirectional: 400 Watts Peak Pulse Power per Line ( $t_p = 8/20\mu$ s)
- ✓ 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

## MECHANICAL CHARACTERISTICS

- ✓ Molded JEDEC SOD-323 Package
- ✓ Weight 5 milligrams (Approximate)
- ✓ Available in Lead-Free Pure-Tin Plating(Annealed)
- ✓ Solder Reflow Temperature:  
Pure-Tin - Sn, 100: 260-270°C
- ✓ Consult Factory for Leaded Device Availability
- ✓ Flammability Rating UL 94V-0
- ✓ 8mm Tape and Reel Per EIA Standard 481
- ✓ Device Marking: Marking Code & Polarity Band (*Unidirectional Only*)



## PIN CONFIGURATIONS



# PSD03 thru PSD36C

## DEVICE CHARACTERISTICS

### MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

PARAMETER	SYMBOL	VALUE	UNITS
Unidirectional Peak Pulse Power ( $t_p = 8/20\mu\text{s}$ ) - See Figure 1	$P_{PP}$	500	Watts
Bidirectional Peak Pulse Power ( $t_p = 8/20\mu\text{s}$ ) - See Figure 1	$P_{PP}$	400	Watts
Operating Temperature	$T_L$	-55 to 150	°C
Storage Temperature	$T_{STG}$	-55 to 150	°C

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

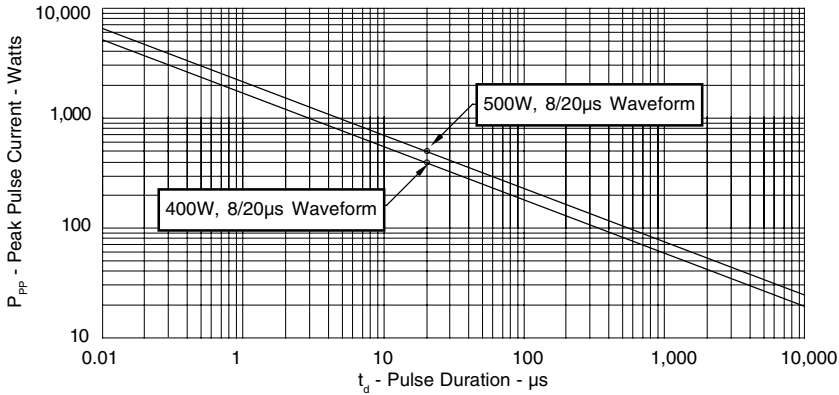
PART NUMBER (See Notes 1-2)	DEVICE MARKING	RATED STAND-OFF VOLTAGE $V_{WM}$ VOLTS	MINIMUM BREAKDOWN VOLTAGE @ 1mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 2) @ $I_p = 1A$ $V_c$ VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 2) @ 8/20 $\mu\text{s}$ $V_c @ I_{FP}$	MAXIMUM LEAKAGE CURRENT @ $V_{WM}$ $I_b$ $\mu\text{A}$	TYPICAL CAPACITANCE 0V @ 1 MHz C 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.

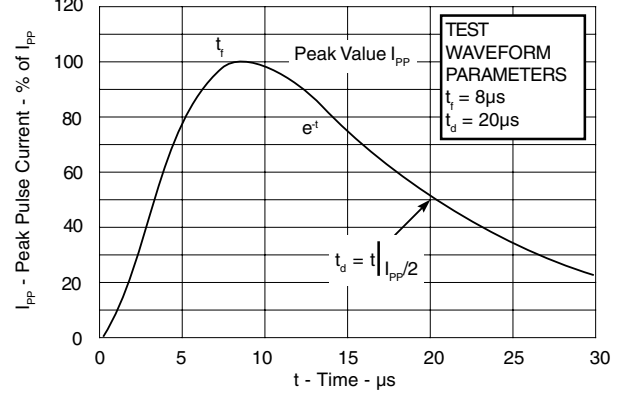
**Note 2:** *Unidirectional Only:* Positive potential is applied from pin 2 to 1 or pin 3 to 4.

## GRAPHS

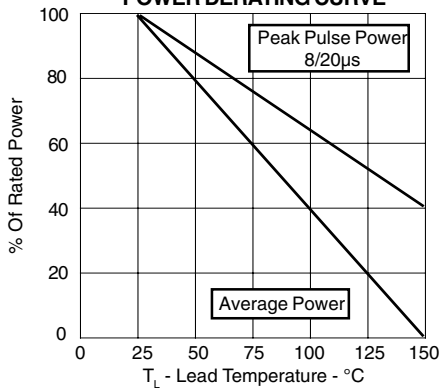
**FIGURE 1  
PEAK PULSE POWER VS PULSE TIME**



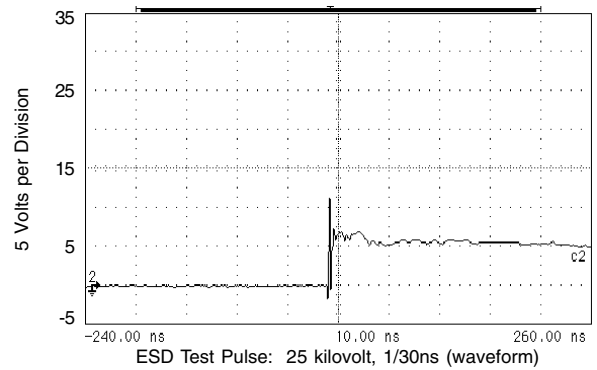
**FIGURE 2  
PULSE WAVEFORM**



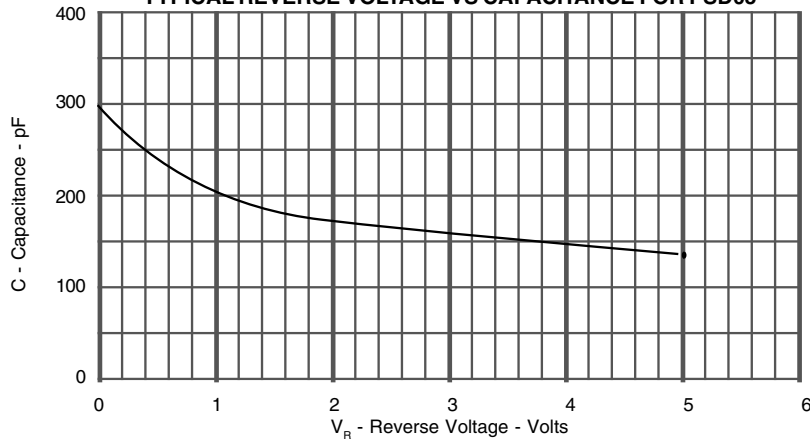
**FIGURE 3  
POWER DERATING CURVE**



**FIGURE 4  
OVERSHOOT & CLAMPING VOLTAGE FOR PSD03**

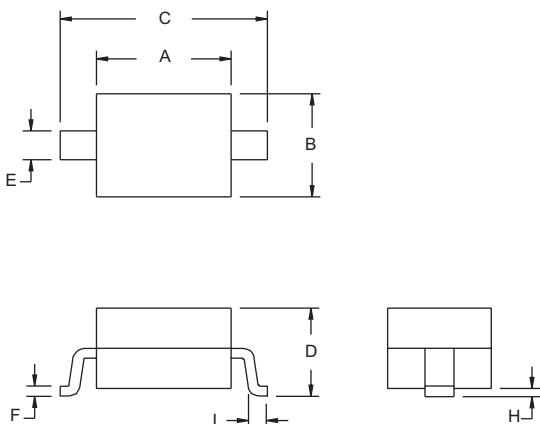

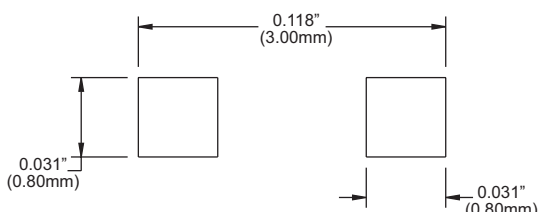


**FIGURE 5  
TYPICAL REVERSE VOLTAGE VS CAPACITANCE FOR PSD05**



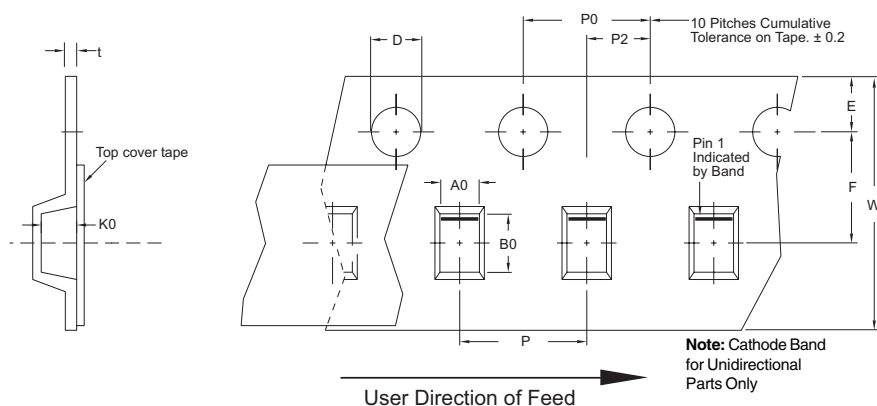
# PSD03 thru PSD36C

## SOD-323 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	0.80	1.10	0.031	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	
L	0.20	-	0.08	-	
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.					
<b>Outline &amp; Dimensions: Rev 3 - 4/07, 06010</b>					

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



**COPYRIGHT © ProTek Devices 2007**

SPECIFICATIONS: ProTek reserves the right to change the electrical and or mechanical characteristics described herein without notice (except JEDEC).

DESIGN CHANGES: ProTek reserves the right to discontinue product lines without notice, and that the final judgement concerning selection and specifications is the buyer's and that in furnishing engineering and technical assistance, ProTek assumes no responsibility with respect to the selection or specifications of such products.

**ProTek Devices**

2929 South Fair Lane, Tempe, AZ 85282

Tel: 602-431-8101 Fax: 602-431-2288

E-Mail: [sales@protekdevices.com](mailto:sales@protekdevices.com)

Web Site: [www.protekdevices.com](http://www.protekdevices.com)