

STANDARD CAPACITANCE TVS ARRAY

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 μ s - Level 2(Line-Ground) & 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 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



DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified			
PARAMETER	SYMBOL	VALUE	UNITS
Unidirectional: Peak Pulse Power ($t_p = 8/20\mu s$) - See Fig. 1	P_{PP}	500	Watts
Bidirectional: Peak Pulse Power ($t_p = 8/20\mu s$) - 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) @ 8/20 μs $V_C @ I_{PP}$	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

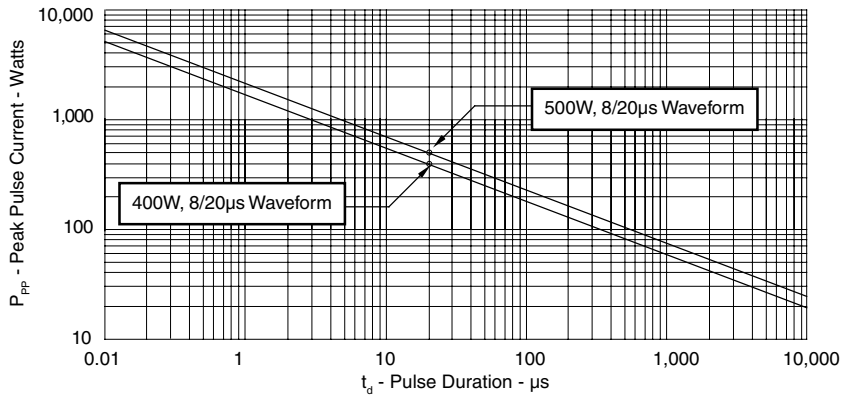


FIGURE 2
PULSE WAVE FORM

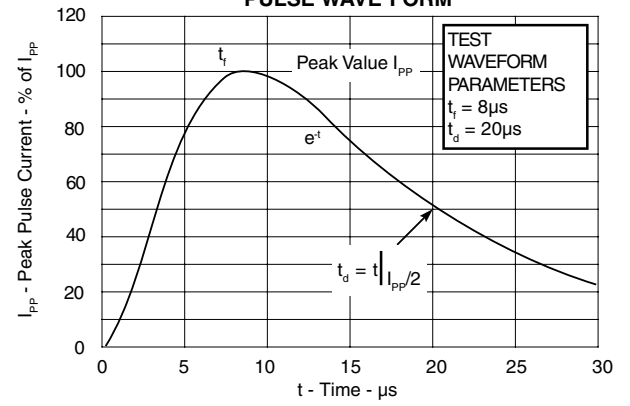


FIGURE 3
POWER DERATING CURVE

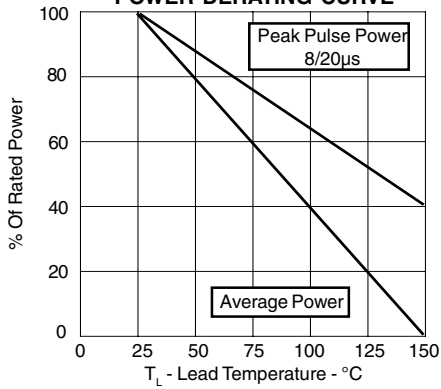


FIGURE 4
OVERSHOOT & CLAMPING VOLTAGE FOR PSD03

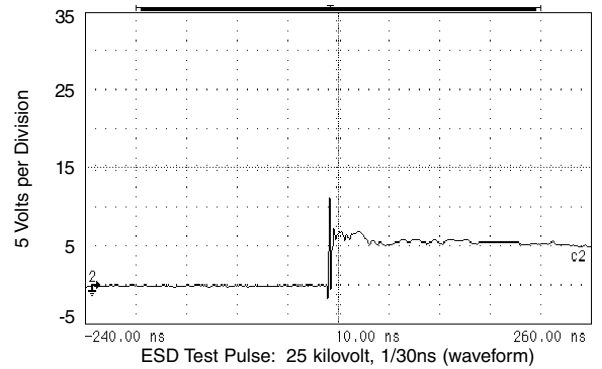
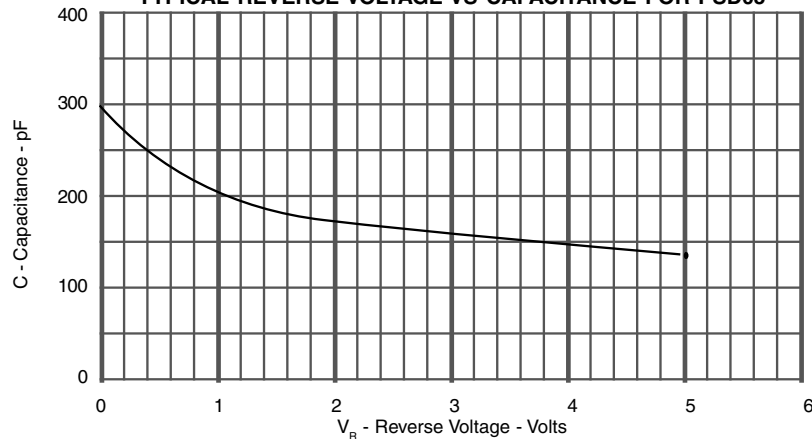
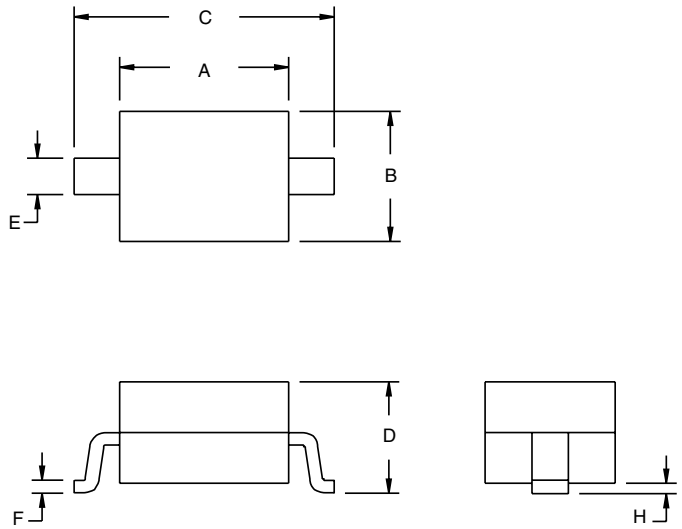

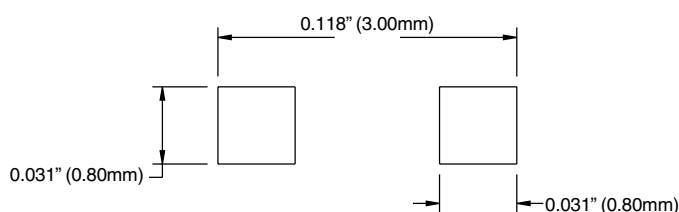


FIGURE 5
TYPICAL REVERSE VOLTAGE VS CAPACITANCE FOR PSD05



PACKAGE OUTLINE & DIMENSIONS

<p style="text-align: center;">PACKAGE OUTLINE</p> 	<p style="text-align: center;">SOD-323 PACKAGE</p> 																																												
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<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">DIM</th> <th colspan="2">MILLIMETERS</th> <th colspan="2">INCHES</th> </tr> <tr> <th>MIN</th> <th>MAX</th> <th>MIN</th> <th>MAX</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>1.60</td> <td>1.90</td> <td>0.063</td> <td>0.075</td> </tr> <tr> <td>B</td> <td>1.15</td> <td>1.45</td> <td>0.045</td> <td>0.057</td> </tr> <tr> <td>C</td> <td>2.39</td> <td>2.70</td> <td>0.094</td> <td>0.106</td> </tr> <tr> <td>D</td> <td>0.92</td> <td>1.10</td> <td>0.036</td> <td>0.043</td> </tr> <tr> <td>E</td> <td>0.25</td> <td>0.40</td> <td>0.010</td> <td>0.016</td> </tr> <tr> <td>F</td> <td>0.10</td> <td>0.20</td> <td>0.004</td> <td>0.008</td> </tr> <tr> <td>H</td> <td>-</td> <td>0.10</td> <td>-</td> <td>0.004</td> </tr> </tbody> </table>		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	0.036	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
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<p style="text-align: center;">MOUNTING PAD</p> 	<p>NOTES</p> <ol style="list-style-type: none"> Controlling Dimensions in Millimeters. Dimensions are exclusive of mold flash and metal burrs. <p>TAPE & REEL ORDERING NOMENCLATURE</p> <ol style="list-style-type: none"> Surface mount product is taped and reeled in accordance with EIA-481. Suffix -T7 = 7 Inch Reel - 3,000 pieces per 8mm tape, i.e., PSD05C-T7. Suffix -LF = Lead-Free, Pure-Tin Plating, i.e., PSD05C-LF-T7. <p style="text-align: right;">Outline & Dimensions: Rev 1 - 11/01, 06010</p>																																												

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