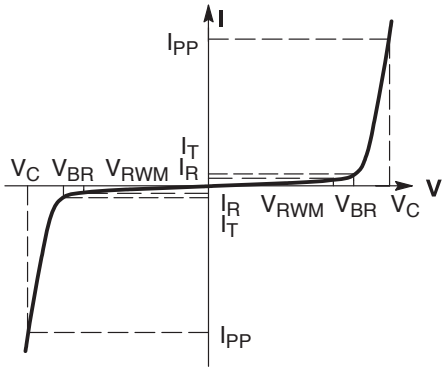
I-V Curve Characteristics (T_A = 25°C unless otherwise noted)



Bi–Directional TVS

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
eV_{BR}	Maximum Temperature Coefficient of V_{BR}

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Electrical Characteristics (Devices listed in bold, italic are Littelfuse Preferred devices)

Device*	Device Marking	V_{RWM} (Note 6)	I_R @ V_{RWM}	Breakdown Voltage				V_C @ I_{PP} (Note 6)		V_{BR}	$C_{Typ.}$ (Note 7)
				V_{BR} @ I_T (V) (Note 5)			@ I_T	V_C	I_{PP}		
		Volts	µA	MIN	NOM	MAX	mA	Volts	Amps	%/°C	pF
P6SMB11CAT3G	11C	9.4	5	10.5	11.05	11.6	1	15.6	38	0.075	865
P6SMB12CAT3G	12C	10.2	5	11.4	12	12.6	1	16.7	36	0.078	800
P6SMB15CAT3G	15C	12.8	5	14.3	15.05	15.8	1	21.2	28	0.084	645
P6SMB16CAT3G	16C	13.6	5	15.2	16	16.8	1	22.5	27	0.086	610
P6SMB18CAT3G	18C	15.3	5	17.1	18	18.9	1	25.2	24	0.088	545
P6SMB20CAT3G	20C	17.1	5	19	20	21	1	27.7	22	0.09	490
P6SMB22CAT3G	22C	18.8	5	20.9	22	23.1	1	30.6	20	0.09	450
P6SMB24CAT3G	24C	20.5	5	22.8	24	25.2	1	33.2	18	0.094	415
P6SMB27CAT3G	27C	23.1	5	25.7	27.05	28.4	1	37.5	16	0.096	370
P6SMB30CAT3G	30C	25.6	5	28.5	30	31.5	1	41.4	14.4	0.097	335
P6SMB33CAT3G	33C	28.2	5	31.4	33.05	34.7	1	45.7	13.2	0.098	305
P6SMB36CAT3G	36C	30.8	5	34.2	36	37.8	1	49.9	12	0.099	280
P6SMB39CAT3G	39C	33.3	5	37.1	39.05	41	1	53.9	11.2	0.1	260
P6SMB43CAT3G	43C	36.8	5	40.9	43.05	45.2	1	59.3	10.1	0.101	240
P6SMB47CAT3G	47C	40.2	5	44.7	47.05	49.4	1	64.8	9.3	0.101	220
P6SMB51CAT3G	51C	43.6	5	48.5	51.05	53.6	1	70.1	8.6	0.102	205
P6SMB56CAT3G	56C	47.8	5	53.2	56	58.8	1	77	7.8	0.103	185
P6SMB62CAT3G	62C	53	5	58.9	62	65.1	1	85	7.1	0.104	170
P6SMB68CAT3G	68C	58.1	5	64.6	68	71.4	1	92	6.5	0.104	155
P6SMB82CAT3G	82C	70.1	5	77.9	82	86.1	1	113	5.3	0.105	130

4. A transient suppressor is normally selected according to the working peak reverse voltage (V_{RWM}), which should be equal to or greater than the DC or continuous peak operating voltage level.
5. V_{BR} measured at pulse test current I_T at an ambient temperature of 25°C.
6. Surge current waveform per Figure 2 and derate per Figure 3 of the General Data – 600 Watt at the beginning of this group.
7. Bias Voltage = 0 V, F = 1 MHz, T_J = 25°C

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Ratings and Characteristic Curves

Figure 1. Pulse Rating Curve

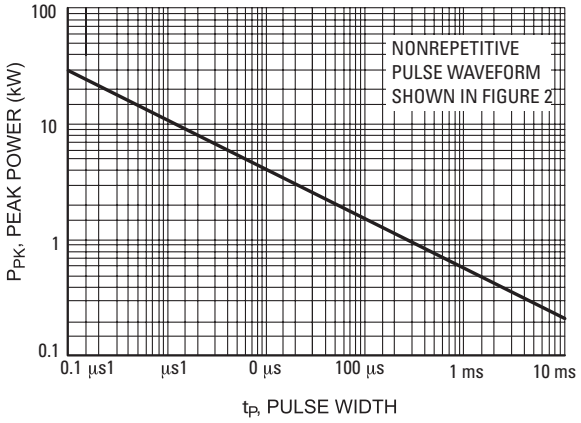


Figure 2. Pulse Waveform

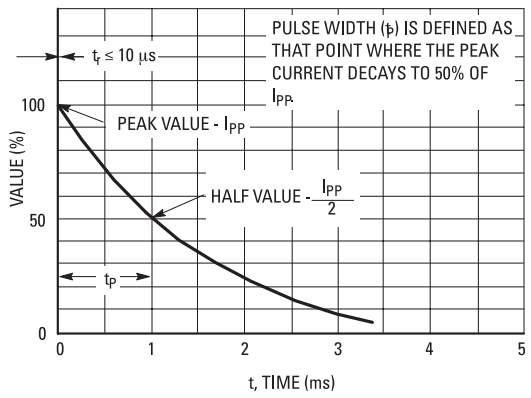


Figure 3 - Pulse Derating Curve

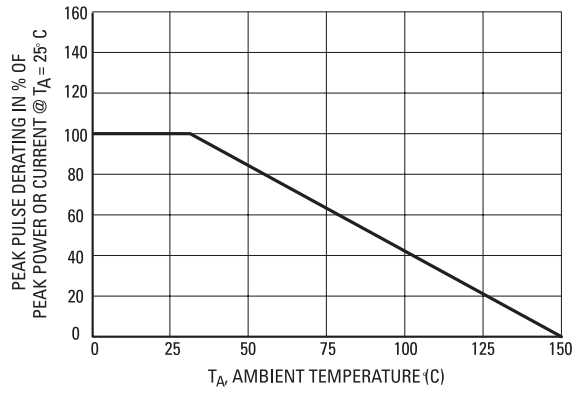


Figure 4. Typical Junction Capacitance vs. Bias Voltage

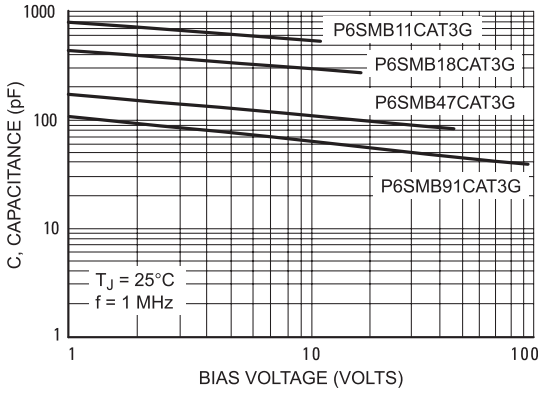
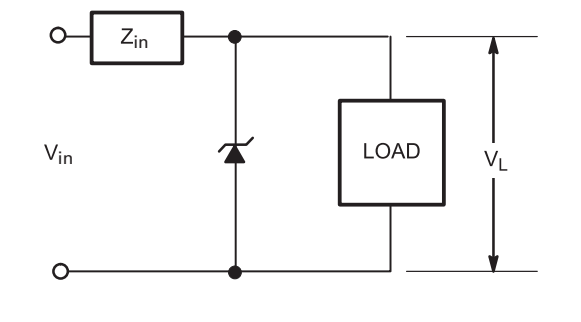


Figure 5. Typical Protection Circuit



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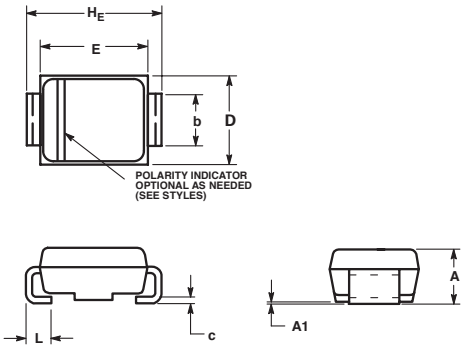
TVS Diodes

Surface Mount > 600W > P6SMB11AT3G Series

Dimensions

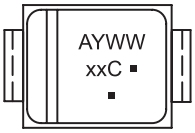


Dim	Inches			Millimeters		
	Min	Nom	Max	Min	Nom	Max
A	0.077	0.091	0.097	1.95	2.30	2.47
A1	0.002	0.004	0.008	0.05	0.10	0.20
b	0.077	0.080	0.087	1.96	2.03	2.20
c	0.006	0.009	0.012	0.15	0.23	0.31
D	0.130	0.140	0.156	3.30	3.56	3.95
E	0.160	0.170	0.181	4.06	4.32	4.60
H_E	0.205	0.214	0.220	5.21	5.44	5.60
L	0.030	0.040	0.063	0.76	1.02	1.60
L1	0.020 REF			0.51 REF		

NOTES:

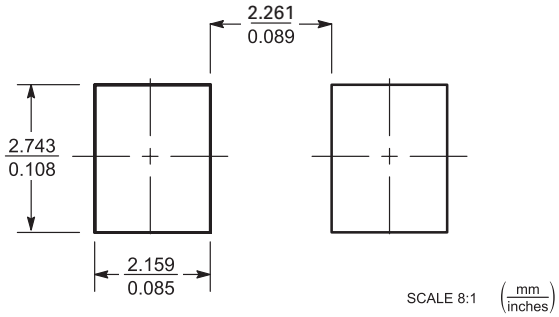
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. D DIMENSION SHALL BE MEASURED WITHIN DIMENSION P.

Part Marking System



xxC = Device Code
A = Assembly Location
Y = Year
WW = Work Week
▪ = Pb−Free Package
(Note: Microdot may be in either location)

Soldering Footprint



ORDERING INFORMATION

Device	Package	Shipping
P6SMBxxxAT3G	SMB (Pb−Free)	2,500 / Tape & Reel

Flow/Wave Soldering (Solder Dipping)

Peak Temperature :	260°C
Dipping Time :	10 seconds

Physical Specifications

Case	Void-free, transfer-molded, thermosetting plastic
Polarity	Cathode indicated by polarity band
Mounting Position	Any
Finish	All external surfaces are corrosion resistant and leads are readily solderable
Leads	Modified L−Bend providing more contact area to bond pads

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