imall

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from, Europe, America and south Asia, supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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600 Watt Peak Power Zener Transient Voltage Suppressors

Unidirectional*

The SMB series is designed to protect voltage sensitive components from high voltage, high energy transients. They have excellent clamping capability, high surge capability, low zener impedance and fast response time. The SMB series is supplied in ON Semiconductor's exclusive, cost-effective, highly reliable SURMETIC® package and is ideally suited for use in communication systems, automotive, numerical controls, process controls, medical equipment, business machines, power supplies and many other industrial/consumer applications.

Specification Features:

- Working Peak Reverse Voltage Range 5.8 to 171 V
- Standard Zener Breakdown Voltage Range 6.8 to 200 V
- Peak Power 600 W @ 1 ms
- ESD Rating of Class 3 (>16 kV) per Human Body Model
- Maximum Clamp Voltage @ Peak Pulse Current
- Low Leakage < 5 µA Above 10 V
- UL 497B for Isolated Loop Circuit Protection
- Response Time is Typically < 1 ns
- Pb-Free Packages are Available

Mechanical Characteristics:

CASE: Void-free, transfer-molded, thermosetting plastic

FINISH: All external surfaces are corrosion resistant and leads are readily solderable

MAXIMUM CASE TEMPERATURE FOR SOLDERING PURPOSES: 260°C for 10 Seconds

LEADS: Modified L–Bend providing more contact area to bond pads **POLARITY:** Cathode indicated by polarity band **MOUNTING POSITION:** Any

MAXIMUM RATINGS

Please See the Table on the Following Page

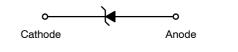
*Please see P6SMB11CAT3 to P6SMB91CAT3 for Bidirectional devices.



ON Semiconductor®

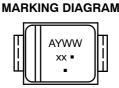
http://onsemi.com

PLASTIC SURFACE MOUNT ZENER OVERVOLTAGE TRANSIENT SUPPRESSORS 5.8–171 VOLTS 600 WATT PEAK POWER





SMB CASE 403A PLASTIC



A = Assembly Location

- Y = Year
- WW = Work Week
- xx = Device Code (Refer to page 3)
- = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping †		
P6SMBxxxAT3	SMB	2500/Tape & Reel		
P6SMBxxxAT3G	SMB (Pb-Free)	2500/Tape & Reel		

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Power Dissipation (Note 1) @ $T_L = 25^{\circ}C$, Pulse Width = 1 ms	P _{PK}	600	W
DC Power Dissipation @ T _L = 75°C Measured Zero Lead Length (Note 2)	PD	3.0	W
Derate Above 75°C		40	mW/°C
Thermal Resistance from Junction-to-Lead	$R_{\theta JL}$	25	°C/W
DC Power Dissipation (Note 3) @ T _A = 25°C Derate Above 25°C	P _D	0.55 4.4	W mW/°C
Thermal Resistance from Junction-to-Ambient	R_{\thetaJA}	226	°C/W
Forward Surge Current (Note 4) @ $T_A = 25^{\circ}C$	I _{FSM}	100	А
Operating and Storage Temperature Range	T _J , T _{stg}	–65 to +150	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability. 1. 10 X 1000 μs, non-repetitive

2. 1" square copper pad, FR-4 board

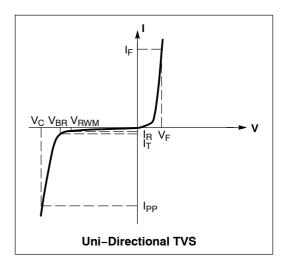
FR-4 board, using ON Semiconductor minimum recommended footprint, as shown in 403A case outline dimensions spec.
1/2 sine wave (or equivalent square wave), PW = 8.3 ms, duty cycle = 4 pulses per minute maximum.

ELECTRICAL CHARACTERISTICS

(T_A = 25°C unless otherwise noted, V_F = 3.5 V Max. @ I_F (Note 4) = 30 A) (Note 5)

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					
Ι _Τ	Test Current					
ΘV_{BR}	Maximum Temperature Coefficient of V_{BR}					
١ _F	Forward Current					
V _F	Forward Voltage @ I _F					

5. 1/2 sine wave or equivalent, PW = 8.3 ms, non-repetitive duty cycle



Device (Note 6) V RMU V BR V (Note 7) @ Ir V C Ipp ΘV_{BR} (Note 7) Pesome Marking V µ.A Min Nom Max mA V A %/°C pF Pesome G 648 5.8 1000 6.45 6.8 7.14 10 10.5 57 0.057 2380 Pesome G 8V2A 7.02 200 7.79 8.2 8.61 10 12.4 50 0.065 2015 Pesome G 9V1A 7.78 50 8.65 9.1 9.55 1 14.5 41 0.073 16800 Pesome G 12A 10.2 5 10.5 17.0 18.5 0.081 1333 0.081 1335 0.081 1335 0.081 1335 0.081 1335 0.081 1335 0.081 1335 0.081 1335 0.081 1335 0.081 1335			、 ,		Breakdown Voltage				V _C @ I _{PP} (Note 8)			C.
Device Marking V μA Min Nom Max mA V A %/°C pF P56MB6.8A73, G 6V8A 5.8 1000 6.4 6.8 7.14 10 10.5 57 0.057 2360 P6SMB6.8A73, G 8V2A 7.02 200 7.13 7.51 7.58 10 11.3 53 0.061 2180 P6SMB9.1A73, G 9V1A 7.72 50 8.65 9.1 9.55 1 14.5 41 0.073 1680 P6SMB10473, G 11A 9.4 5 10.5 11.05 13.7 7 18.2 3 0.081 1335 P6SMB15A73, G 15A 12.8 5 14.3 15.05 15.8 1 21.2 28 0.084 1175 P6SMB15A73, G 15A 12.8 5 15.2 16 16.8 1 22.2 24 0.084 1100 90 90 90 <td< th=""><th></th><th>Device</th><th colspan="3">V_{BR} V (Note 7)</th><th>@ I_T</th><th>v_c</th><th>I_{PP}</th><th>ΘV_{BR}</th><th>C_{typ} (Note 9)</th></td<>		Device			V _{BR} V (Note 7)			@ I _T	v _c	I _{PP}	ΘV _{BR}	C _{typ} (Note 9)
Descm Solo 7.73 7.51 7.88 10 11.3 53 0.061 2180 DeSMB8.2AT3, G 9V1A 7.02 200 7.79 8.2 8.61 10 12.1 50 0.065 2015 DeSMB9.1AT3, G 10A 8.55 10 9.55 1 14.4 50 0.061 2015 DeSMB12AT3, G 11A 9.4 5 10.5 11.6 1 15.6 38 0.078 1435 DeSMB12AT3, G 13A 11.1 5 12.4 13.05 13.7 1 18.2 33 0.081 1335 DeSMB12AT3, G 15A 15.2 16 16.8 1 21.2 28 0.084 1175 DeSMB12AT3, G 16A 15.5 5 12.8 1 21.2 28 0.086 1100 DeSMB2AT3, G 16A 20.5 5 22.8 24 25.2 1 33.2 18.05 10.99 <th>Device</th> <th></th> <th>Min</th> <th>Nom</th> <th>Max</th> <th>mA</th> <th>v</th> <th>Α</th> <th>%/°C</th> <th>pF</th>	Device				Min	Nom	Max	mA	v	Α	%/°C	pF
PesMB82AT3, G 8V/A 7.02 200 7.79 8.2 8.61 10 12.1 50 0.065 2015 PesMB10AT3, G 9V1A 7.78 50 8.65 9.1 9.55 1 1 1.4.4 45 0.0665 2015 PesMB10AT3, G 10.4 8.55 10 9.5 10 10.5 1 14.5 41 0.073 1690 PesMB10AT3, G 11A 9.4 5 10.5 11.05 11 11.6.7 36 0.078 1435 PesMB15AT3, G 13A 11.1 5 12.4 13.05 15.8 1 21.2 28 0.084 1175 PesMB16AT3, G 16A 15.3 5 17.1 18 18.9 1 22.2 24 0.086 1000 PesMB16AT3, G 16A 15.3 5 17.1 18 18.9 1 22.5 27 0.086 1000 0.094 775 966	P6SMB6.8AT3, G	6V8A	5.8	1000	6.45	6.8	7.14	10	10.5	57	0.057	2380
Person 9V1A 7.78 50 8.65 9.1 9.55 1 13.4 45 0.068 1835 Person 10A 8.55 10 9.5 10 10.5 1 14.5 41 0.073 1690 OSEMB12AT3, G 11A 9.4 5 10.5 11.05 11.6 1 14.5 41 0.073 1650 OSEMB12AT3, G 12A 10.2 5 10.5 11.6 1 16.7 38 0.075 1550 OSEMB12AT3, G 13A 11.1 5 12.4 13.05 13.7 1 18.2 33 0.061 1335 OSEMB15AT3, G 18A 13.3 5 17.1 18 18.9 1 21.2 28 0.064 1775 OSEMB15AT3, G 18A 15.3 5 17.1 18 18.9 1 21.2 0.084 1775 OSEMB2AT3, G 22A 188 5 20.9	P6SMB7.5AT3, G		6.4			7.51	7.88	10	11.3	53	0.061	2180
PessmB10AT3, G 10A 8.55 10 9.5 10 10.5 1 14.5 41 0.073 1690 PessMB11AT3, G 11A 9.4 5 10.5 11.05 11.6 1 15.6 38 0.075 1550 PessMB13AT3, G 13A 11.1 5 11.4 12 12.6 1 16.7 36 0.078 1435 PessMB15AT3, G 15A 12.8 5 14.3 15.05 15.8 1 21.2 28 0.0081 1335 PessMB16AT3, G 16A 13.6 5 15.2 16 16.8 1 22.5 27 0.008 1000 PessMB2AT3, G 20A 17.1 5 19 20 21 1 27.7 22 0.09 910 000 PessMB2AT3, G 22A 18.8 5 20.9 22 23.1 1 30.6 20 0.092 835 PesMB2AT3, G	,			200	7.79			10				
Pession Pession <t< td=""><td>P6SMB9.1AT3, G</td><td>9V1A</td><td>7.78</td><td>50</td><td>8.65</td><td>9.1</td><td>9.55</td><td>1</td><td>13.4</td><td>45</td><td>0.068</td><td>1835</td></t<>	P6SMB9.1AT3, G	9V1A	7.78	50	8.65	9.1	9.55	1	13.4	45	0.068	1835
PessMB12AT3, G 12A 10.2 5 11.4 12 12.6 1 16.7 36 0.078 1435 PessMB13AT3, G 13A 11.1 5 12.4 13.05 13.7 1 18.2 33 0.081 1335 PessMB16AT3, G 15A 12.8 5 14.3 15.05 15.8 1 21.2 28 0.086 1170 PessMB16AT3, G 16A 13.6 5 15.1 16 16.8 1 22.5 27 0.086 1170 PessMB20AT3, G 20A 17.1 5 19 20 21 1 25.2 24 0.098 1000 PessMB2AT3, G 22A 18.8 5 20.9 22 23.1 1 30.6 20 0.092 835 PessMB3AT3, G 22A 23.1 5 25.7 27.05 28.4 1 37.5 16 0.094 775 PessMB3AT3, G 33.4	P6SMB10AT3, G	10A	8.55	10	9.5	10	10.5	1	14.5	41	0.073	1690
Pession 13A 11.1 5 12.4 13.05 13.7 1 18.2 33 0.081 1335 PessMB15AT3, G 15A 12.8 5 14.3 15.05 15.8 1 21.2 28 0.084 1175 PessMB16AT3, G 16A 13.6 5 15.2 16 16.8 1 22.5 27 0.086 1100 PessMB16AT3, G 12A 17.1 5 19 20 21 1 27.7 22 0.099 910 PessMB2AT3, G 20A 17.1 5 29.9 22 23.1 1 30.6 20 0.092 835 PessMB2AT3, G 24A 20.5 5 22.8 24 25.2 1 33.2 18 0.094 775 PessMB3AT3, G 30A 25.6 5 28.5 30 31.7 31.4 13.2 0.098 585 PessMB3AT3, G 36A 30.8 <	P6SMB11AT3, G	11A	9.4	5	10.5	11.05	11.6	1	15.6	38	0.075	1550
Description 15A 12.8 5 14.3 15.05 15.8 1 21.2 28 0.084 1175 DeSMB16AT3, G 16A 13.6 5 15.2 16 16.8 1 22.5 27 0.086 1110 DeSMB2AT3, G 20A 17.1 5 19 20 21 1 27.7 22 0.09 910 DeSMB2AT3, G 22A 18.8 5 20.9 22 23.1 1 30.6 20 0.092 835 DeSMB2AT3, G 24A 20.5 5 22.8 24 25.2 1 33.2 18 0.094 775 DeSMB2AT3, G 30.A 25.6 5 28.5 30 31.5 1 41.4 14.4 0.097 635 DeSMB3AT3, G 30.A 28.2 5 31.4 33.05 37.8 1 49.9 12 0.098 540 DeSMB43AT3, G 39.A 33.	P6SMB12AT3, G	12A	10.2		11.4	12	12.6	1	16.7	36	0.078	1435
Description 16A 13.6 5 15.2 16 16.8 1 22.5 27 0.086 1110 Description 18A 15.3 5 17.1 1 18 18.9 1 25.2 24 0.086 1000 Description 20A 17.1 5 19 20 21 1 27.7 22 0.09 910 Description 20A 17.1 5 19 20 21 1 30.6 20 0.092 835 Description 24A 20.5 5 22.8 24 25.2 1 33.6 0.094 775 Description 30A 25.6 5 28.7 27.05 28.4 1 37.5 16 0.096 700 Description 30A 28.2 5 31.4 33.05 37.1 49.4 1 45.7 13.2 0.099 540 Description 36A <t< td=""><td>P6SMB13AT3, G</td><td>13A</td><td>11.1</td><td>5</td><td>12.4</td><td>13.05</td><td>13.7</td><td>1</td><td>18.2</td><td>33</td><td>0.081</td><td>1335</td></t<>	P6SMB13AT3, G	13A	11.1	5	12.4	13.05	13.7	1	18.2	33	0.081	1335
Desk Bibarta, G 18A 15.3 5 17.1 18 18.9 1 25.2 24 0.088 1000 Desk 20A 17.1 5 19 20 21 1 27.7 22 0.09 910 Desk 22A 18.8 5 20.9 22 23.1 1 30.6 20 0.092 835 Desk 27A 23.1 5 22.7 27.0 28.4 1 37.5 16 0.094 775 Desk 30A 25.6 5 28.5 30 31.5 1 41.4 14.4 0.097 635 Desk 30A 28.2 5 31.4 33.05 34.7 1 45.7 13.2 0.098 585 Desk 30A 3.8 5 34.2 36 37.8 1 49.9 12 0.099 540 Desk 39A 33.3 5 37.	P6SMB15AT3, G	15A	12.8	5	14.3	15.05	15.8	1	21.2	28	0.084	1175
Pe6SMB20AT3, G 20A 17.1 5 19 20 21 1 27.7 22 0.09 910 Pe6SMB22AT3, G 22A 18.8 5 20.9 22 23.1 1 30.6 20 0.092 835 Pe6SMB2AT3, G 24A 20.5 5 22.8 24 25.2 1 33.2 18 0.094 775 Pe6SMB3AT3, G 27A 23.1 5 27.7 27.05 28.4 1 37.5 16 0.096 700 Pe6SMB3AT3, G 30A 28.6 5 31.4 33.05 34.7 1 45.7 13.2 0.098 585 Pe6SMB3AT3, G 36A 30.8 5 34.2 36 37.8 1 49.9 12 0.099 540 Pe6SMB3AT3, G 39A 33.3 5 37.1 39.05 41 1 53.9 11.2 0.1 500 Pe6SMB47AT3, G 47A <	P6SMB16AT3, G	16A	13.6	5	15.2	16	16.8	1	22.5	27	0.086	1110
PessimBazara, G 22A 18.8 5 20.9 22 23.1 1 30.6 20 0.092 835 PessimBazara, G 24A 20.5 5 22.8 24 25.2 1 33.2 18 0.094 775 PessimBazara, G 30A 25.6 5 22.8 24 25.2 1 33.2 18 0.094 775 PessimBasara, G 30A 25.6 5 22.8 30 31.5 1 41.4 14.4 0.097 635 PessimBasara, G 33A 28.2 5 31.4 33.05 34.7 1 45.7 13.2 0.098 585 PessimBasara, G 36A 30.8 5 34.2 36 37.8 1 49.9 12 0.099 540 PessimBarara, G 43A 36.8 5 40.9 43.05 45.2 1 59.3 10.1 0.101 460 265 65.1 65.1 </td <td>P6SMB18AT3, G</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1</td> <td></td> <td></td> <td></td> <td>1000</td>	P6SMB18AT3, G							1				1000
Description 24A 20.5 5 22.8 24 25.2 1 33.2 18 0.094 775 Description 30A 25.6 5 28.7 27.05 28.4 1 37.5 16 0.094 775 Description 30A 25.6 5 28.5 30 31.5 1 41.4 14.4 0.097 6335 Description 33A 28.2 5 31.4 33.05 34.7 1 45.7 13.2 0.098 585 Description 33A 28.2 5 31.4 33.05 34.7 1 45.7 13.2 0.098 585 Description 33.3 5 37.1 39.05 41 1 53.9 11.2 0.1 500 Description 43.0 5 34.2 36 37.5 53.6 1 70.1 8.6 0.102 395 Description 5 5.5 5.0	P6SMB20AT3, G	20A	17.1	5	19	20	21	1	27.7	22	0.09	910
Pessibility 27A 23.1 5 25.7 27.05 28.4 1 37.5 16 0.096 700 Pessibility 30A 25.6 5 28.5 30 31.5 1 41.4 14.4 0.097 635 Pessibility 33A 28.2 5 31.4 33.05 34.7 1 45.7 13.2 0.098 585 Pessibility 39A 33.3 5 37.1 39.05 41 1 59.9 11.2 0.1 500 Pessibility 43A 36.8 5 40.9 43.05 45.2 1 59.3 10.1 0.101 460 Pessibility 47A 40.2 5 44.7 47.05 49.4 1 64.8 9.3 0.101 425 Pessibility 51A 43.6 5 53.2 56 58.8 1 77.1 8.6 0.103 365 Pessibility 53.6 <t< td=""><td>P6SMB22AT3,G</td><td>22A</td><td>18.8</td><td>5</td><td>20.9</td><td>22</td><td>23.1</td><td>1</td><td>30.6</td><td>20</td><td>0.092</td><td>835</td></t<>	P6SMB22AT3,G	22A	18.8	5	20.9	22	23.1	1	30.6	20	0.092	835
PessmB30AT3,G 30A 25.6 5 28.5 30 31.5 1 41.4 14.4 0.097 633 PessMB3AT3,G 33A 28.2 5 31.4 33.05 34.7 1 45.7 13.2 0.098 585 PessMB3AT3,G 36A 30.8 5 34.2 36 37.8 1 49.9 12 0.099 540 PessMB3AT3,G 39A 33.3 5 37.1 39.05 41 1 53.9 11.2 0.1 500 PessMB4AT3,G 43A 36.8 5 40.9 43.05 45.2 1 59.3 10.1 0.101 460 PessMB51AT3,G 51A 43.6 5 49.4 1 64.8 9.3 0.101 425 PessMB56AT3,G 5AA 47.8 5 53.6 1 70.1 8.6 0.102 395 PessMB5AT3,G 6AA 58.1 5 52.5 56.5	P6SMB24AT3, G	24A	20.5	5	22.8	24	25.2	1	33.2	18	0.094	775
Pessing 33A 28.2 5 31.4 33.05 34.7 1 45.7 13.2 0.098 585 PessingsAr3, G 36A 30.8 5 31.4 33.05 34.7 1 45.7 13.2 0.098 585 PessingsAr3, G 39A 33.3 5 37.1 39.05 41 1 53.9 11.2 0.1 500 PessingsAr3, G 43A 36.8 5 40.9 43.05 45.2 1 59.3 10.1 0.101 460 PessingsAr3, G 47A 40.2 5 44.7 47.05 49.4 1 64.8 9.3 0.101 425 PessingsAr3, G 56A 47.8 5 53.2 56 58.8 1 77.7 7.8 0.103 365 PessingsAr3, G 68A 58.1 5 53.2 56 58.8 1 77.7 7.8 0.103 365 56 58.9 62	P6SMB27AT3, G					27.05				16		
Person Beson	P6SMB30AT3, G	30A	25.6	5	28.5	30	31.5	1	41.4	14.4	0.097	635
PessMB39AT3, G39A33.3537.139.0541153.911.20.1500PessMB43AT3, G43A36.8540.943.0545.2159.310.10.101460PessMB47AT3, G47A40.2544.747.0549.4164.89.30.101425PessMB51AT3, G51A43.6548.551.0553.6170.18.60.102395PessMB56AT3, G56A47.8553.25658.81777.80.103365PessMB68AT3, G62A53558.96265.11857.10.104335PessMB75AT3, G75A64.1571.375.0578.811035.80.105280PessMB91AT3, G91A77.8586.59195.511254.80.106235PessMB10AT3, G100A85.559510010511374.40.106215PessMB10AT3, G110A94510511611524.00.107200PessMB10AT3, G120A102511412012611653.60.107185PessMB10AT3, G110A94510511611524.00.107200PessMB130AT3, G120A1125143150.5 <td>P6SMB33AT3, G</td> <td>33A</td> <td>28.2</td> <td></td> <td>31.4</td> <td></td> <td>34.7</td> <td>1</td> <td>45.7</td> <td>13.2</td> <td></td> <td>585</td>	P6SMB33AT3, G	33A	28.2		31.4		34.7	1	45.7	13.2		585
PeSMB43AT3, G43A36.8540.943.0545.2159.310.10.101460PeSMB47AT3, G47A40.2544.747.0549.4164.89.30.101425PeSMB51AT3, G51A43.6548.551.0553.6170.18.60.102395PeSMB5AT3, G56A47.8553.25658.81777.80.103365PeSMB62AT3, G62A53558.96265.11857.10.104335PeSMB68AT3, G68A58.1564.66871.41926.50.104305PeSMB75AT3, G75A64.1571.375.0578.811035.80.105280PeSMB91AT3, G91A77.8586.59195.511254.80.106235PeSMB10AT3, G100A85.559510010511374.40.106215PeSMB10AT3, G100A85.559510010511374.40.106215PeSMB10AT3, G100A85.559510010511374.40.106215PeSMB10AT3, G100A85.5595105110.511611524.00.107200PeSMB10AT3, G130A1115<	· · ·				34.2							
PessMB47AT3, G PessMB51AT3, G47A 51A40.25 43.644.7 	,											
PeSMB51AT3, G51A43.6548.551.0553.6170.18.60.102395 PeSMB56AT3, G56A47.8553.25658.81777.80.103365PeSMB62AT3, G62A53558.96265.11857.10.104335PeSMB68AT3, G68A58.1564.66871.41926.50.102395PeSMB75AT3, G75A64.1571.375.0578.811035.80.105280PeSMB2AT3, G82A70.1577.98286.111135.30.106235PeSMB10AT3, G91A77.8586.59195.511254.80.106235PeSMB10AT3, G100A85.559510010511374.40.106215PeSMB10AT3, G110A945105110.511611524.00.107200PeSMB120AT3, G120A102511412012611653.60.107185PeSMB130AT3, G130A1115124130.513711793.30.107170PeSMB150AT3, G150A1285143150.515812072.90.108150PeSMB150AT3, G180A154 <t< td=""><td>P6SMB43AT3, G</td><td>43A</td><td>36.8</td><td>5</td><td>40.9</td><td>43.05</td><td>45.2</td><td>1</td><td>59.3</td><td>10.1</td><td>0.101</td><td>460</td></t<>	P6SMB43AT3, G	43A	36.8	5	40.9	43.05	45.2	1	59.3	10.1	0.101	460
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P6SMB150AT3, G 150A 128 5 143 150.5 158 1 207 2.9 0.108 150 P6SMB160AT3, G 160A 136 5 152 160 168 1 219 2.7 0.108 140 P6SMB180AT3, G 180A 154 5 171 180 189 1 246 2.4 0.108 130	P6SMB120AT3, G							1				
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P6SMB180AT3, G 180A 154 5 171 180 189 1 246 2.4 0.108 130	P6SMB150AT3, G	150A	128	5	143	150.5	158	1	207	2.9	0.108	150
	P6SMB160AT3, G	160A	136	5	152	160	168	1	219	2.7	0.108	140
26SMB200AT3, G 200A 171 5 190 200 210 1 274 2.2 0.108 115	P6SMB180AT3, G	180A	154	5	171	180	189	1	246	2.4	0.108	130
	P6SMB200AT3, G	200A	171	5	190	200	210	1	274	2.2	0.108	115

ELECTRICAL CHARACTERISTICS (Devices listed in bold, italic are ON Semiconductor Preferred devices.)

6. A transient suppressor is normally selected according to the working peak reverse voltage (V_{RWM}), which should be equal to or greater than A transient suppressor is normally selected according to the working peak reaction that the DC or continuous peak operating voltage level.
V_{BR} measured at pulse test current I_T at an ambient temperature of 25°C.
Surge current waveform per Figure 2 and derate per Figure 3.
Bias Voltage = 0 V, F = 1 MHz, T_J = 25°C
* The "G" suffix indicates Pb–Free package available.

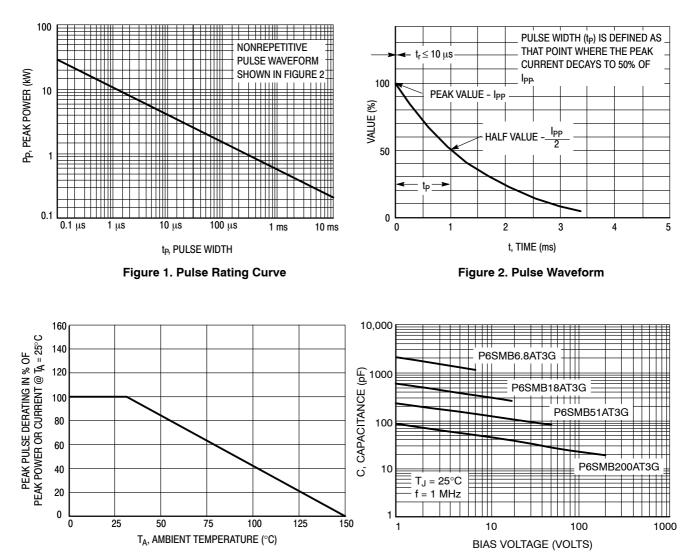
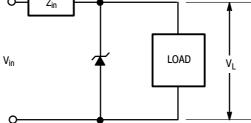


Figure 3. Pulse Derating Curve

Figure 4. Typical Junction Capacitance vs. Bias Voltage





APPLICATION NOTES

RESPONSE TIME

In most applications, the transient suppressor device is placed in parallel with the equipment or component to be protected. In this situation, there is a time delay associated with the capacitance of the device and an overshoot condition associated with the inductance of the device and the inductance of the connection method. The capacitive effect is of minor importance in the parallel protection scheme because it only produces a time delay in the transition from the operating voltage to the clamp voltage as shown in Figure 5.

The inductive effects in the device are due to actual turn-on time (time required for the device to go from zero current to full current) and lead inductance. This inductive effect produces an overshoot in the voltage across the equipment or component being protected as shown in Figure 6. Minimizing this overshoot is very important in the application, since the main purpose for adding a transient suppressor is to clamp voltage spikes. The SMB series have a very good response time, typically < 1 ns and negligible inductance. However, external inductive effects could produce unacceptable overshoot. Proper circuit layout,

minimum lead lengths and placing the suppressor device as close as possible to the equipment or components to be protected will minimize this overshoot.

Some input impedance represented by Z_{in} is essential to prevent overstress of the protection device. This impedance should be as high as possible, without restricting the circuit operation.

DUTY CYCLE DERATING

The data of Figure 1 applies for non-repetitive conditions and at a lead temperature of 25°C. If the duty cycle increases, the peak power must be reduced as indicated by the curves of Figure 7. Average power must be derated as the lead or ambient temperature rises above 25°C. The average power derating curve normally given on data sheets may be normalized and used for this purpose.

At first glance the derating curves of Figure 7 appear to be in error as the 10 ms pulse has a higher derating factor than the 10 μ s pulse. However, when the derating factor for a given pulse of Figure 7 is multiplied by the peak power value of Figure 1 for the same pulse, the results follow the expected trend.

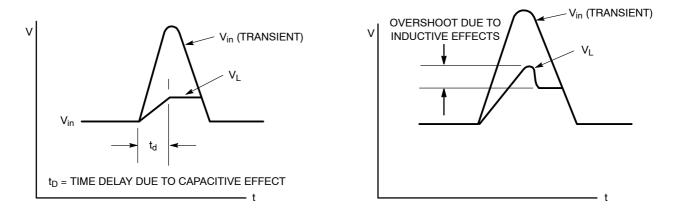


Figure 5.



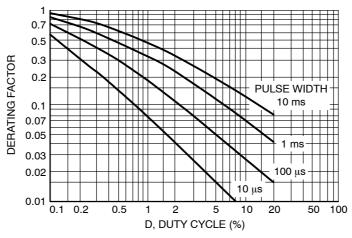


Figure 7. Typical Derating Factor for Duty Cycle

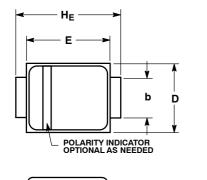
UL RECOGNITION

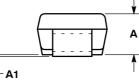
The entire series has *Underwriters Laboratory Recognition* for the classification of protectors (QVGQ2) under the UL standard for safety 497B and File #E210057. Many competitors only have one or two devices recognized or have recognition in a non-protective category. Some competitors have no recognition at all. With the UL497B recognition, our parts successfully passed several tests including Strike Voltage Breakdown test, Endurance Conditioning, Temperature test, Dielectric Voltage-Withstand test, Discharge test and several more.

Whereas, some competitors have only passed a flammability test for the package material, we have been recognized for much more to be included in their Protector category.

PACKAGE DIMENSIONS

SMB CASE 403A-03 ISSUE G

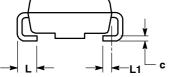




NOTES 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982. 2. CONTROLLING DIMENSION: INCH

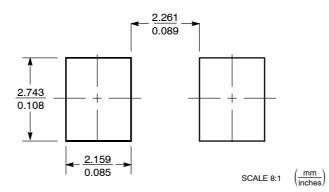
3. D DIMENSION SHALL BE MEASURED WITHIN DIMENSION P.

	М	ILLIMETE	RS	INCHES			
DIM	MIN	NOM	MAX	MIN	NOM	MAX	
Α	1.90	2.13	2.45	0.075	0.084	0.096	
A1	0.05	0.10	0.20	0.002	0.004	0.008	
b	1.96	2.03	2.20	0.077	0.080	0.087	
С	0.15	0.23	0.31	0.006	0.009	0.012	
D	3.30	3.56	3.95	0.130	0.140	0.156	
E	4.06	4.32	4.60	0.160	0.170	0.181	
HE	5.21	5.44	5.60	0.205	0.214	0.220	
L	0.76	1.02	1.60	0.030	0.040	0.063	
L1		0.51 REF		0.020 REF			





SOLDERING FOOTPRINT*



*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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