

1.0SMB SERIES

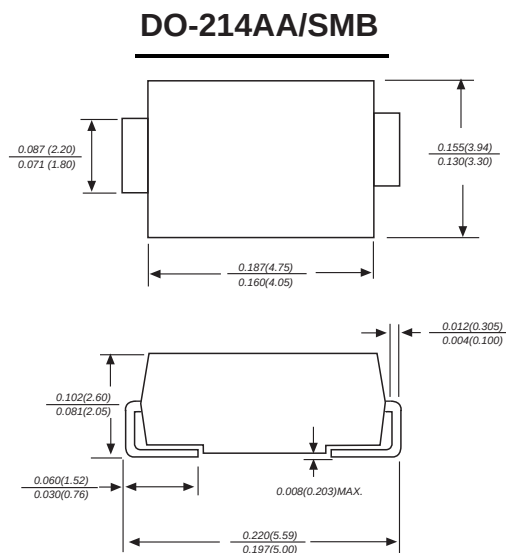
Surface Mount Transient Voltage Suppressors

Features

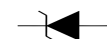
- For surface mounted applications
- Low-profile package
- Ideal for automated placement
- Available in Unidirectional and Bidirectional
- 1000 W peak pulse power capability with a 10/1000 μ s waveform
- Low incremental surge resistance, excellent clamping capability
- Very fast response time
- High temperature soldering guaranteed: 260 °C/10 s at terminals

Mechanical Data

- **Package:** DO-214AA (SMB)
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D
- **Polarity:** For uni-directional types the band denotes cathode end, no marking on bi-directional types



Uni-Polar



Bi-Polar



Dimensions in inches and (millimeters)

Maximum Ratings ($T_a=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Max
Peak power dissipation, with a 10/1000us waveform ⁽¹⁾ ⁽²⁾ (Fig.1)	P_{PPM}	W	1000
Peak pulse current, with a 10/1000us waveform ⁽¹⁾	I_{PPM}	A	See Next Table
Power dissipation, on infinite heat sink at $T_L=75^\circ\text{C}$	P_D	W	5.0
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only ⁽²⁾	I_{FSM}	A	100
Operating junction and storage temperature range	T_J, T_{STG}	$^\circ\text{C}$	-55 to +150

Electrical Characteristics ($T_a=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Maximum instantaneous forward voltage @ at 50A for unidirectional only	V_F	V	3.5

■ Thermal Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Conditions	VALUE
Thermal resistance(Typical)	R _{θJL}	°C/W	junction to lead	20
	R _{θJA}	°C/W	junction to ambient	100

Notes:

- (1) Non-repetitive current pulse, per Fig. 3 and derated above T_A= 25°C per Fig.2.
- (2) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.3" x 0.3" (8.0 mm x 8.0 mm) copper pad areas

■ Electrical Characteristics (T_a=25°C Unless otherwise specified)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage V _{BR} @I _T			Maximum Reverse Leakage I _R ⁽⁵⁾ @ V _{RWM} (μA)	Working Peak Reverse Voltage V _{RWM} (V)	Maximum Reverse Surge Current I _{PP} ⁽⁴⁾ (A)	Maximum Clamping Voltage V _c @ I _{PP} (V)
		Min(V)	Max (V)	I _T ⁽³⁾ (mA)				
1.0SMB6.8A	1.0SMB6.8CA	6.46	7.14	10	1000	5.8	96.8	10.5
1.0SMB7.5A	1.0SMB7.5CA	7.13	7.88	10	500	6.4	90.0	11.3
1.0SMB8.2A	1.0SMB8.2CA	7.79	8.61	10	200	7.0	84.0	12.1
1.0SMB9.1A	1.0SMB9.1CA	8.65	9.56	1	50	7.8	75.8	13.4
1.0SMB10A	1.0SMB10CA	9.50	10.50	1	10	8.6	70.2	14.5
1.0SMB11A	1.0SMB11CA	10.45	11.55	1	5	9.4	65.2	15.6
1.0SMB12A	1.0SMB12CA	11.40	12.60	1	5	10.2	60.8	16.7
1.0SMB13A	1.0SMB13CA	12.35	13.65	1	1	11.1	55.8	18.2
1.0SMB15A	1.0SMB15CA	14.25	15.75	1	1	12.8	48.0	21.2
1.0SMB16A	1.0SMB16CA	15.20	16.80	1	1	13.6	45.2	22.5
1.0SMB18A	1.0SMB18CA	17.10	18.90	1	1	15.3	40.3	25.2
1.0SMB20A	1.0SMB20CA	19.00	21.00	1	1	17.1	36.7	27.7
1.0SMB22A	1.0SMB22CA	20.90	23.10	1	1	18.8	33.2	30.6
1.0SMB24A	1.0SMB24CA	22.80	25.20	1	1	20.5	30.7	33.2
1.0SMB27A	1.0SMB27CA	25.65	28.35	1	1	23.1	27.2	37.5
1.0SMB30A	1.0SMB30CA	28.50	31.50	1	1	25.6	24.5	41.4
1.0SMB33A	1.0SMB33CA	31.35	34.65	1	1	28.2	22.2	45.7
1.0SMB36A	1.0SMB36CA	34.20	37.80	1	1	30.8	20.3	49.9
1.0SMB39A	1.0SMB39CA	37.05	40.95	1	1	33.3	18.8	53.9
1.0SMB43A	1.0SMB43CA	40.85	45.15	1	1	36.8	17.2	59.3
1.0SMB47A	1.0SMB47CA	44.65	49.35	1	1	40.2	15.7	64.8
1.0SMB51A	1.0SMB51CA	48.45	53.55	1	1	43.6	14.5	70.1
1.0SMB56A	1.0SMB56CA	53.20	58.80	1	1	47.8	13.2	77.0
1.0SMB62A	1.0SMB62CA	58.90	65.10	1	1	53.0	12.0	85.0
1.0SMB68A	1.0SMB68CA	64.60	71.40	1	1	58.1	11.0	92.0

Notes:

- (3) Pulse test: t_p≤50ms.
- (4) Surge current waveform per Fig. 3 and derated per Fig.2.
- (5) For bi-directional types having VRWM of 10 V and less, the I_R limit is doubled.

■ Characteristics (Typical)

