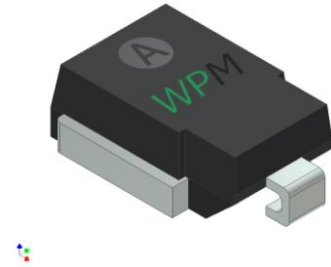


SM8S SERIES

High Temperature Stability and High Reliability Transient Voltage Suppressors

Features

- Voltage Range 10V - 43V
- 6600W Peak Pulse Power Dissipation(10/1000us)
- For surface mounted applications
- Reliable low cost construction utilizing molded plastic technique
- Meets ISO7637-2 surge specification (varied by test condition)
- Response Time is Typically < 1 ns
- Uni-direction, less than 5.0ns form 0 Volts to BV min
- ESD Rating of above 16 kV per Human Body Model
- ESD Rating of above 30 kV (Contact Discharge) per IEC61000-4-2
- EFT (Electrical Fast Transients) Rating of 40 A per IEC61000-4-4
- Plastic material has UL flammability classification 94V-0
- Typical IR less than 10uA above 11V
- Meets MSL 1 Requirements,per J-STD-020, LF maximum peak of 245⁰C
- AEC-Q101 qualified
- Solid-state silicon avalanche technology
- ROHS compliant
- WeiPan technology



DO218A

Ordering Information

Device	Qty per Reel	Reel Size
SM8SxxA	750pcs	13Inch

“xx” = Working Peak Reverse Voltage

Maximum Ratings and Electrical Characteristics

Characteristics	Symbols	Value	Unit
Peak Power Dissipation At $T_j = 25^{\circ}\text{C}$, $T_p = 1\text{ms}$ (Note 1,2)	P_{PK}	6600	W
Peak Forward Surge Current 8.3ms single half sine-wave super	I_{FSM}	700	A
Lead Soldering Temperature	T_L	260 (10 sec.)	$^{\circ}\text{C}$
Operating Temperature Range	T_j	-55 to +175	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 to +175	$^{\circ}\text{C}$

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. Non-repetitive current pulse, 10/1000us and derated above $T_A = 25^{\circ}\text{C}$.
2. Thermal Resistance junction to Lead
3. 8.3ms single half-sine wave duty cycle= 4 pulses maximum per minute (unidirectional units only).
4. Ratings at 25°C ambient temperature unless otherwise specified.
5. Single phase, half wave, 60Hz, resistive or inductive load.
6. For Capacitive Load, Derate Current By 20%

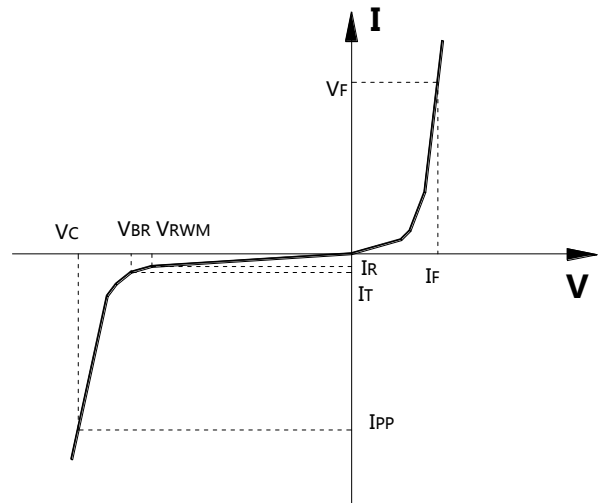
Electrical Characteristics (Tamb=25°C Unless Otherwise Specified)

SM8S PART NUMBER	MARKING CODE	V _{RWM} (V)	V _{BR} @ I _T (V)		I _T (mA)	I _R @ V _{RWM} (uA)		V _C (Max) (V)	I _{PP} (Max) (A)
			Min	Max		@25°C	@175°C		
SM8S10A	SM8S10A	10	11.1	12.8	5	15	250	17.0	388
SM8S11A	SM8S11A	11	12.2	14.0	5	10	150	18.2	363
SM8S12A	SM8S12A	12	13.3	15.3	5	10	150	19.9	332
SM8S13A	SM8S13A	13	14.4	16.5	5	10	150	21.5	307
SM8S14A	SM8S14A	14	15.6	17.9	5	10	150	23.2	284
SM8S15A	SM8S15A	15	16.7	19.2	5	10	150	24.4	270
SM8S16A	SM8S16A	16	17.8	20.5	5	10	150	26.0	254
SM8S17A	SM8S17A	17	18.9	21.7	5	10	150	27.6	239
SM8S18A	SM8S18A	18	20.0	23.3	5	10	150	29.2	226
SM8S20A	SM8S20A	20	22.2	25.5	5	10	150	32.4	204
SM8S22A	SM8S22A	22	24.4	28.0	5	10	150	35.5	186
SM8S24A	SM8S24A	24	26.7	30.7	5	10	150	38.9	170
SM8S26A	SM8S26A	26	28.9	33.2	5	10	150	42.1	157
SM8S28A	SM8S28A	28	31.1	35.8	5	10	150	45.4	145
SM8S30A	SM8S30A	30	33.3	38.3	5	10	150	48.4	136
SM8S33A	SM8S33A	33	36.7	42.2	5	10	150	53.3	124
SM8S36A	SM8S36A	36	40.0	46.0	5	10	150	58.1	114
SM8S40A	SM8S40A	40	44.4	51.1	5	10	150	64.5	102
SM8S43A	SM8S43A	43	47.8	54.9	5	10	150	69.4	95.1

For bidirectional type having Vrwm of 10 volts and less, the IR limit is double.

The available parts are "A" type only, the parts without A (VBR is ±10%) is not available

Symbol	Parameter
V _{RWM}	Working Peak Reverse Voltage
V _{BR}	Breakdown Voltage @ I _T
V _C	Clamping Voltage @ I _{PP}
I _T	Test Current
I _R	Leakage current at V _{RWM}
I _{PP}	Peak pulse current



Typical Electrical Characteristics Applications

Rating and Characteristics Curves

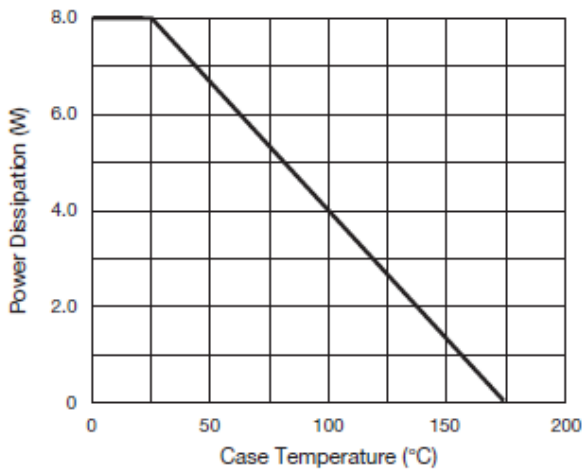


Fig. 1 - Power Derating Curve

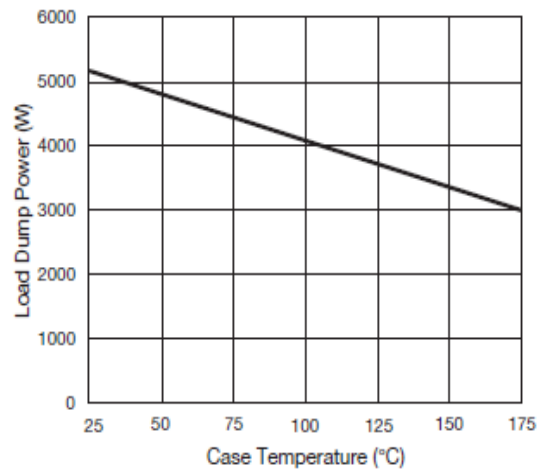


Fig. 2 - Load Dump Power Characteristics (10 ms Exponential Waveform)

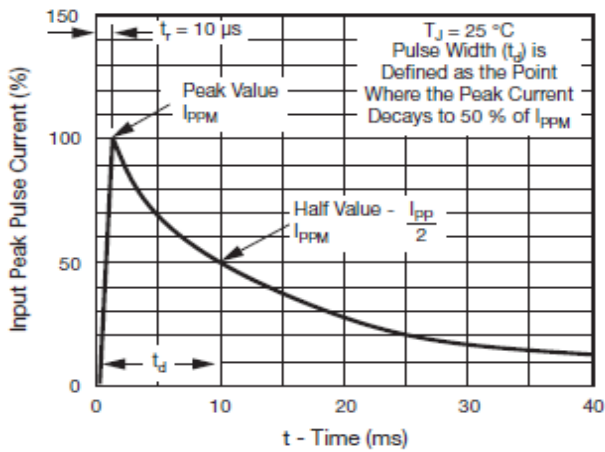


Fig. 3 - Pulse Waveform

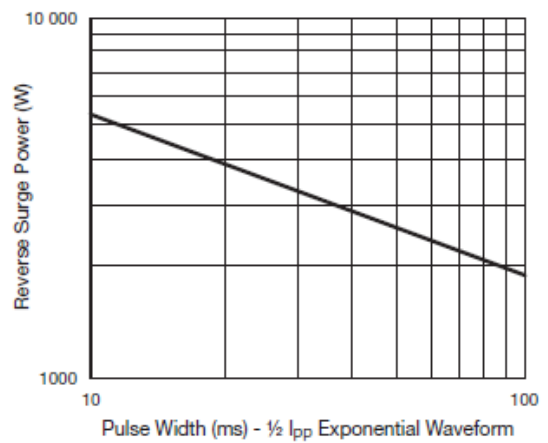


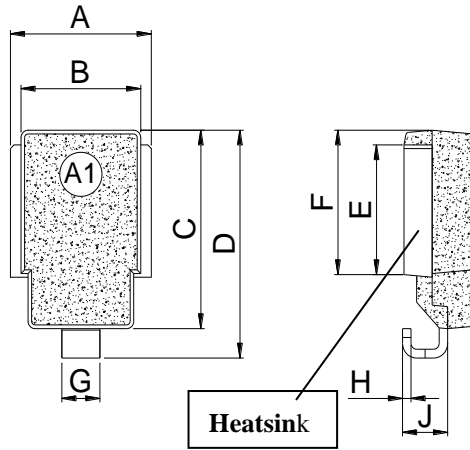
Fig. 4 - Reverse Power Capability

Package Information

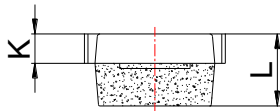
DO218AB

Mechanical Data

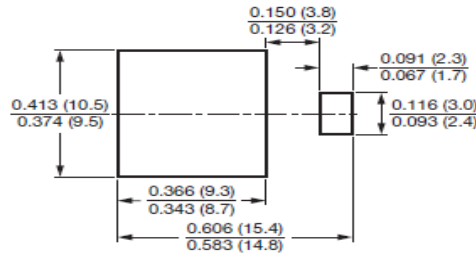
- Case: DO218AB
- Case Material: Molded Plastic. UL Flammability
- Classification Rating 94V-0
- Polarity: Heatsink is anode
- Weight: 2.9±0.05 grams (approximate)



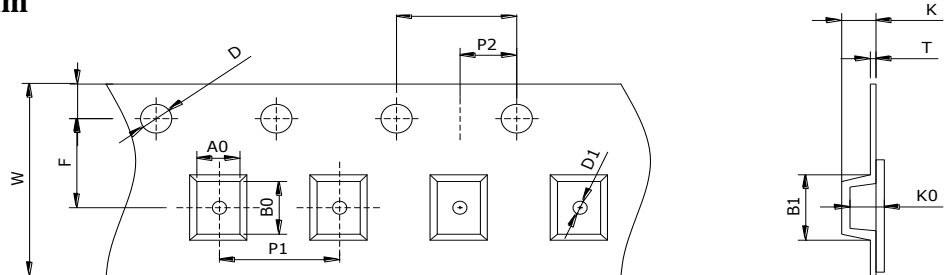
Dimension	Inches		Millimeters	
	Min	Max	Min	Max
A	0.374	0.413	9.5	10.5
B	0.327	0.342	8.3	8.7
C	0.524	0.539	13.3	13.7
D	0.591	0.630	15.0	16.0
E	0.335	0.358	8.5	9.1
F	0.374	0.398	9.5	10.1
G	0.094	0.118	2.4	3.0
H	0.020	0.028	0.5	0.7
J	0.106	0.146	2.7	3.7
K	0.075	0.083	1.9	2.1
L	0.185	0.201	4.7	5.1



Recommended Pad outline



DO218AB Reel Dim



Package	Chip Size (mm)	Pocket Size B0×A0×K0(mm)	Tape Width	Reel Diameter	Quantity Per Reel	P0	P1
DO218AB	16.0×10.0×5.0	16.20×10.20×5.30	24mm	330mm(13")	750	4mm	16mm
D	D1	E	F	K	T	W	
1.5mm	1.55mm	1.75mm	11.5mm	2.5mm	0.5mm	24mm	