Working Voltage: 16 to 43 V
Peak Pulse Power: 6600 W

Features

- Glass Passivated Junction technology
- T_J = 175 °C capability suitable for high reliability and automotive requirement
- 6600 W peak pulse power capability with a 10/1000 μs waveform, repetitive rate (duty cycle):0.01 %
- Meets ISO 7637-2 5a/5b and ISO 16750 load dump test (varied by test condition)
- AEC-Q101 qualified
- Low leakage current
- Low forward voltage drop for uni-directional polarity
- Both available in uni-directional and bi-directional polarity
- Excellent clamping capability
- Very fast response time
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C

DO-218AB

Typical Applications

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting, especially for automotive load dump protection application.

Mechanical Data

- Case: DO-218AB
- Molding compound: UL94V-0 flammability
- Polarity: Heatsink is anode
- Terminal: Solderable per MIL-STD-750, Method 2026
- Mounting Position: Any

Maximum Ratings(T_A=25℃ unless otherwise noted)

Parameter	Symbol	Value	UNIT
Peak power dissipation with a 10/1000μs waveform(1)	P_{PP}	6600	W
Peak power dissipation with a 10/10,000μs waveform for Unidirectional polarity	P_{PP}	5200	W
Peak pulse current with a 10/1000μs waveform(1)	I_{PP}	See Next Table	A
Power dissipation on infinite heatsink at T_L = 25 °C	P_D	8.0	W
Peak forward surge current 8.3 ms single half sine-wave	I_{FSM}	700	A
Operating junction and storage temperature range	T_J, T_{STG}	–55 to +175	°C

Note:

(1)Non-repetitive current pulse per Fig.2 and derated above T_A= 25 °C per Fig.1

Ratings and Characteristics Curves (T_A=25℃ unless otherwise noted)

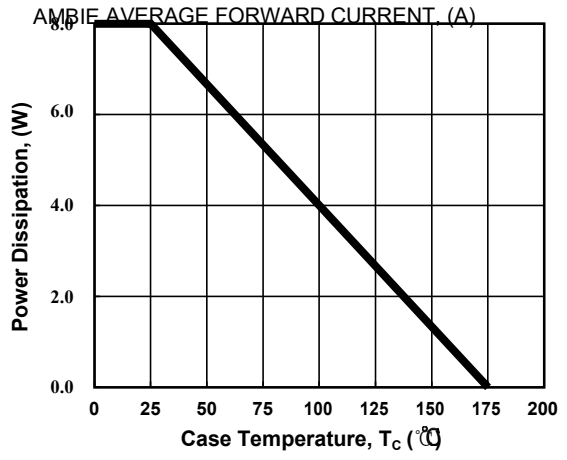


Fig. 1 - Power Derating Curve

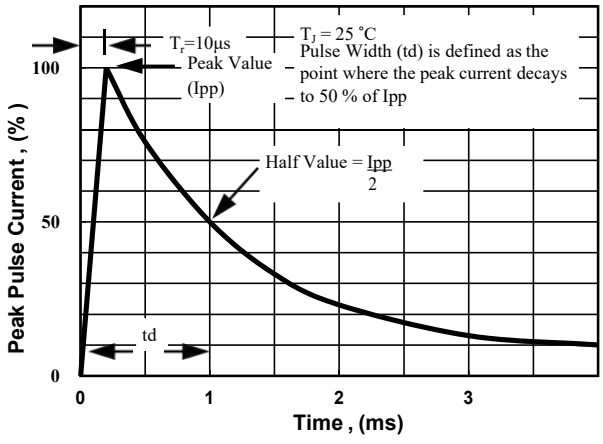


Fig. 2 - Pulse Waveform

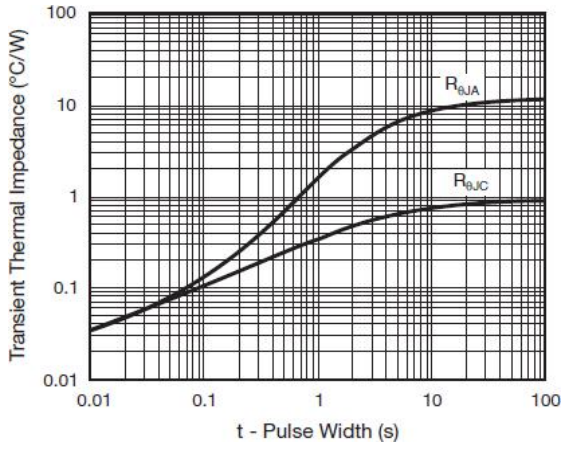


Fig. 3 -Typical Thermal Impedance

Fig. 4 - Peak Pulse Power Rating Curve

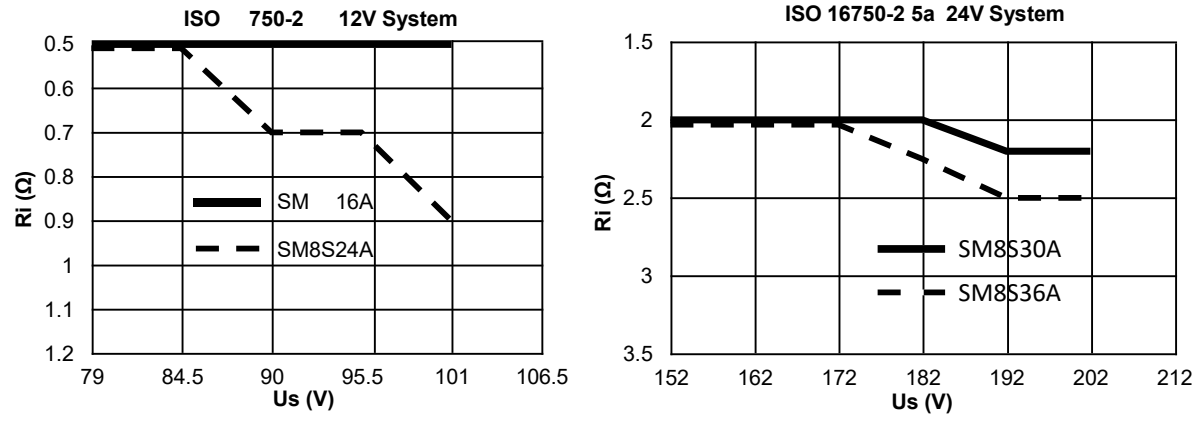
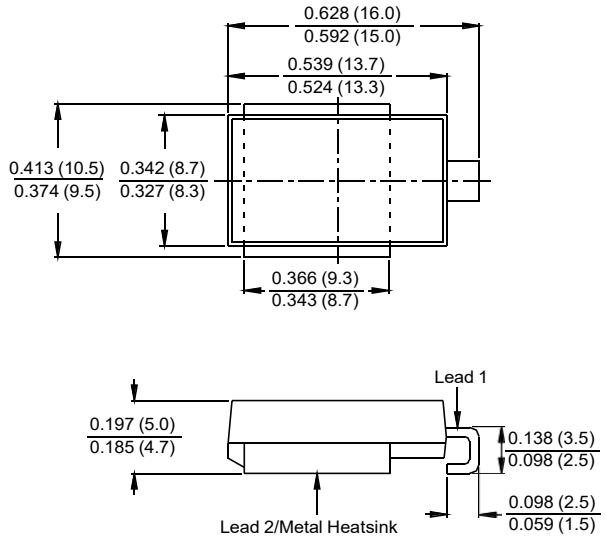
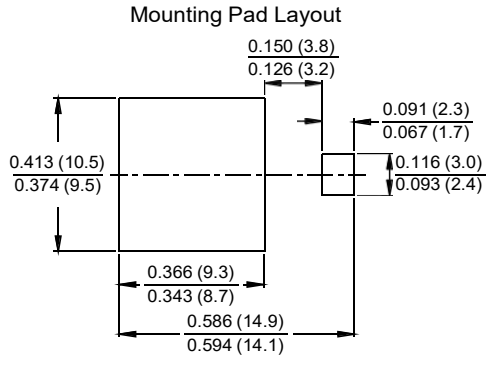


Fig. 5 - Typical SOA Chart

PACKAGE OUTLINE DIMENSIONS



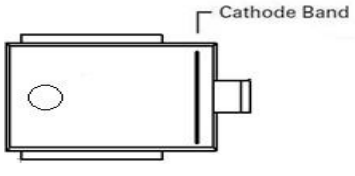


Dimensions in inches (millimeters)

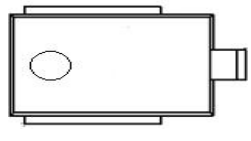
PACKAGING

Part Number	Component Package	Quantity	Packaging Option	Packaging Specification
SM8SXXX	DO-218	750	Tape & Reel - 24mm/13" tape	EIA STD RS-481

Part System



Uni-directional polarity



Bi-directional polarity

Electrical Characteristics(T_A=25℃ unless otherwise noted)

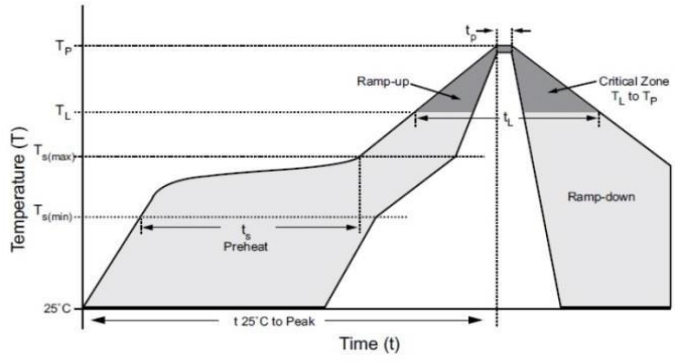
Part Number		Breakdown Voltage V_{BR} @I_T			Maximum Reverse Leakage I_R @V_{RWM} (uA)	Maximum I_R @V_{RWM} T_J=175 (uA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP} (A) (1)	Maximum Clamping Voltage V_C@I_{PP} (V)
Uni	Bi	Min (V)	Max (V)	I_T (mA)					
SM8S16A	SM8S16CA	17.8	19.7	5.0	10	150	16	254	26.0
SM8S17A	SM8S17CA	18.9	20.9	5.0	10	150	17	239	27.6
SM8S18A	SM8S18CA	20.0	22.1	5.0	10	150	18	226	29.2
SM8S20A	SM8S20CA	22.2	24.5	5.0	10	150	20	204	32.4
SM8S22A	SM8S22CA	24.4	26.9	5.0	10	150	22	186	35.5
SM8S24A	SM8S24CA	26.7	29.5	5.0	10	150	24	170	38.9
SM8S26A	SM8S26CA	28.9	31.9	5.0	10	150	26	157	42.1
SM8S28A	SM8S28CA	31.1	34.4	5.0	10	150	28	145	45.4
SM8S30A	SM8S30CA	33.3	36.8	5.0	10	150	30	136	48.4
SM8S33A	SM8S33CA	36.7	40.6	5.0	10	150	33	124	53.3
SM8S36A	SM8S36CA	40.0	44.2	5.0	10	150	36	114	58.1
SM8S40A	SM8S40CA	44.4	49.1	5.0	10	150	40	102	64.5
SM8S43A	SM8S43CA	47.8	52.8	5.0	10	150	43	95	69.4

NOTE:

1. Surge current waveform is defined at 10/1000uS waveform
2. For uni-directional part, the maximum VF = 1.8 V at IF = 100 A measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

Recommended Soldering Parameters

IR-Reflow Condition			
Pre Heat	Temp. min	150	℃
	Temp. max	200	℃
	Time(min to max)	60-120	sec
Ramp up rate (150-200℃)		<3	℃/sec
Reflow	Liquidus Temp.	>217	℃
	Peak Temp.	245	℃
	Time(Liq. to Peak)	60-150	sec
Ramp up rate (220-200℃)		<3	℃/sec
Time within 5℃of actual peak temp.		20-40	sec
Ramp down Rate		<6	℃/sec
Time(25℃ to Peak temp.)		<8	min



Note:: Number of reflow cycles allowed 3 times