

VOLTAGE RANGE: 10- 43V
POWER: 6600Watts

Features

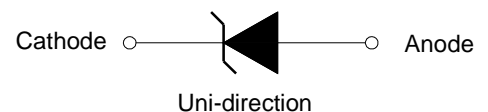
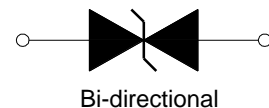
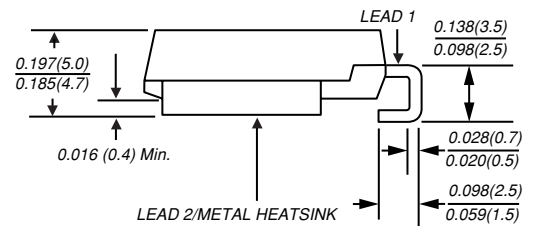
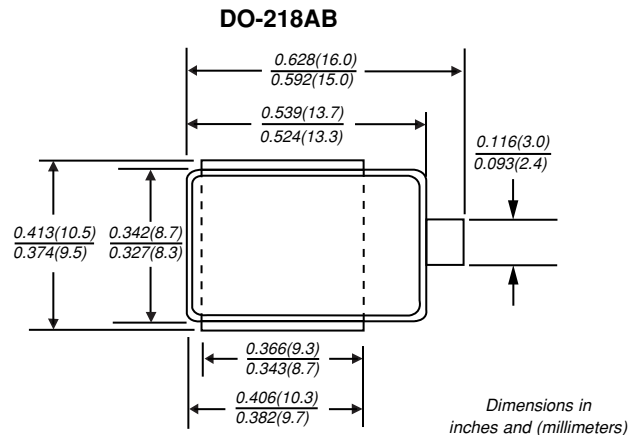
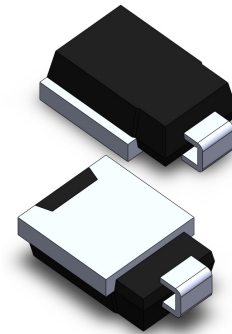
- Ideally suited for load dump protection
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- AEC-Q101 qualified
- Junction passivation optimized design technology
- $T_J = 175^\circ\text{C}$ capability suitable for high reliability and automotive requirement
- Moisture sensitivity level: level 1, per J-STD-020
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- High temperature stability due to unique oxide passivation and patented PAR[®] construction
- Integrally molded heatsink provides a very low thermal resistance for maximum heat dissipation
- High temperature soldering guaranteed:
260°C for 10 seconds at terminals
- Low forward voltage drop

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
integrally mounted in the encapsulation
- Terminals: Plated, solderable per MIL-STD-750, Method 2026
- Polarity: Heatsink is anode
- Mounting Position: Any
- Weight: 2.691g (approximately)



Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak pulse power dissipation with 10/1000 μs waveform 10/10,000 μs waveform	P _{PPM}	6600 5200	W
Steady state power dissipation	P _D	8.0	W
Peak pulse current with a 10/1000 μs waveform ⁽¹⁾	I _{PPM}	See Table 1	A
Peak forward surge current, 8.3ms single half sine-wave	I _{FSM}	700	A
Typical thermal resistance junction to case	R _{θJC}	0.90	°C/W
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +175	°C

Notes: (1) Non-repetitive current pulse derated above $T_A = 25^\circ\text{C}$

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Type	Breakdown Voltage $V_{(BR)}$ (V)		Test Current I_T	Stand-off Voltage V_{WM}	Maximum Reverse Leakage at V_{WM} I_D	Maximum Reverse Leakage at V_{WM} $T_c = 175^\circ\text{C}$	Max. Peak Pulse Current at 10/1000 μs Waveform	Maximum Clamping Voltage at I_{PPM} V_C
	Min.	Max.	(mA)	(V)	(μA)	$I_D(\mu\text{A})$	(A)	(V)
SM8S10CA-H	11.1	13.6	5.0	10	15	250	351	18.8
SM8S10A-H	11.1	12.3	5.0	10	15	250	388	17.0
SM8S11CA-H	12.2	14.9	5.0	11	10	150	328	20.1
SM8S11A-H	12.2	13.5	5.0	11	10	150	363	18.2
SM8S12CA-H	13.3	16.3	5.0	12	10	150	300	22.0
SM8S12A-H	13.3	14.7	5.0	12	10	150	332	19.9
SM8S13CA-H	14.4	17.6	5.0	13	10	150	277	23.8
SM8S13A-H	14.4	15.9	5.0	13	10	150	307	21.5
SM8S14CA-H	15.6	19.1	5.0	14	10	150	256	25.8
SM8S14A-H	15.6	17.2	5.0	14	10	150	284	23.2
SM8S15CA-H	16.7	20.4	5.0	15	10	150	245	26.9
SM8S15A-H	16.7	18.5	5.0	15	10	150	270	24.4
SM8S16CA-H	17.8	21.8	5.0	16	10	150	229	28.8
SM8S16A-H	17.8	19.7	5.0	16	10	150	254	26.0
SM8S17CA-H	18.9	23.1	5.0	17	10	150	216	30.5
SM8S17A-H	18.9	20.9	5.0	17	10	150	239	27.6
SM8S18CA-H	20.0	24.4	5.0	18	10	150	205	32.2
SM8S18A-H	20.0	22.1	5.0	18	10	150	226	29.2
SM8S20CA-H	22.2	27.1	5.0	20	10	150	184	35.8
SM8S20A-H	22.2	24.5	5.0	20	10	150	204	32.4
SM8S22CA-H	24.4	29.8	5.0	22	10	150	168	39.4
SM8S22A-H	24.4	26.9	5.0	22	10	150	186	35.5
SM8S24CA-H	26.7	32.6	5.0	24	10	150	153	43.0
SM8S24A-H	26.7	29.5	5.0	24	10	150	170	38.9
SM8S26CA-H	28.9	35.3	5.0	26	10	150	142	46.6
SM8S26A-H	28.9	31.9	5.0	26	10	150	157	42.1
SM8S28CA-H	31.1	38.0	5.0	28	10	150	132	50.1
SM8S28A-H	31.1	34.4	5.0	28	10	150	145	45.4
SM8S30CA-H	33.3	40.7	5.0	30	10	150	123	53.5
SM8S30A-H	33.3	36.8	5.0	30	10	150	136	48.4
SM8S33CA-H	36.7	44.9	5.0	33	10	150	112	59.0
SM8S33A-H	36.7	40.6	5.0	33	10	150	124	53.3
SM8S36CA-H	40.0	48.9	5.0	36	10	150	103	64.3
SM8S36A-H	40.0	44.2	5.0	36	10	150	114	58.1
SM8S40CA-H	44.4	54.3	5.0	40	10	150	92.4	71.4
SM8S40A-H	44.4	49.1	5.0	40	10	150	102	64.5
SM8S43CA-H	47.8	58.4	5.0	43	10	150	86.0	76.7
SM8S43A-H	47.8	52.8	5.0	43	10	150	95.1	69.4

Note: For all types maximum $V_F = 1.8\text{V}$ at $I_F = 100\text{A}$ measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.1 Power Derating Curve

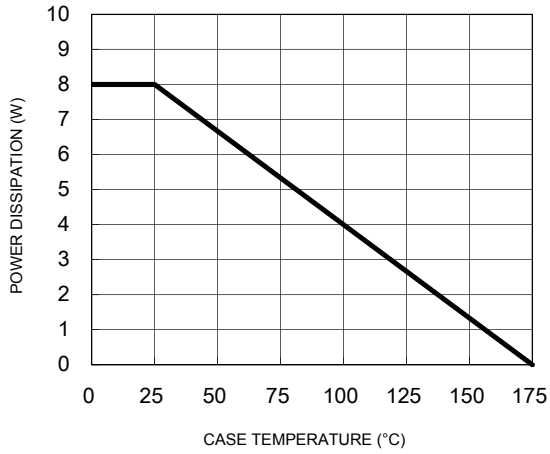


Fig.2 Load Dump Power Characteristics (10ms Exponential Waveform)

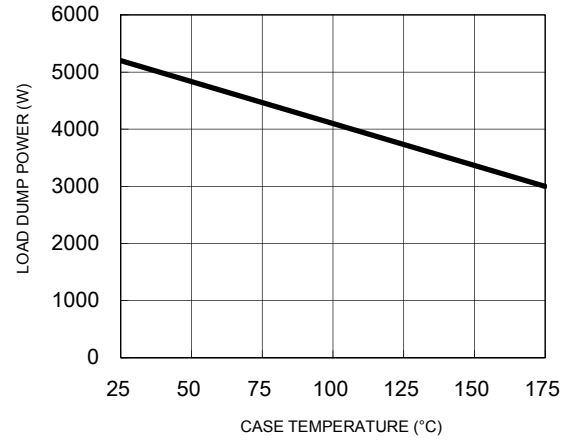


Fig.3 Clamping Power Pulse Waveform

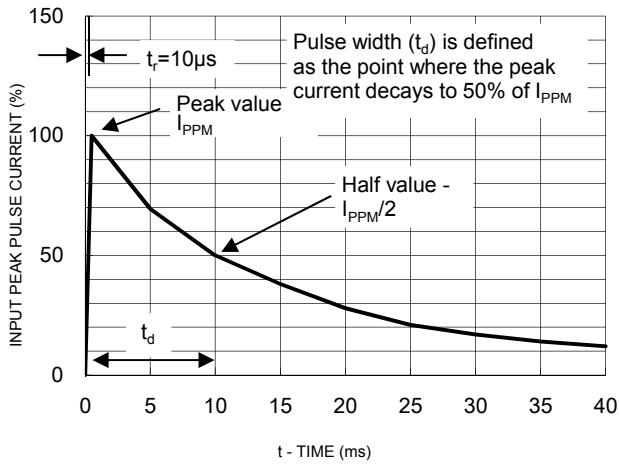


Fig.4 Reverse Power Capability

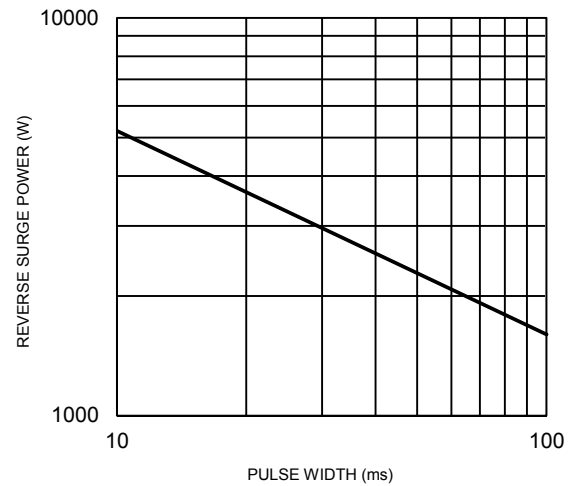


Fig.5 Typical Transient Thermal Impedance

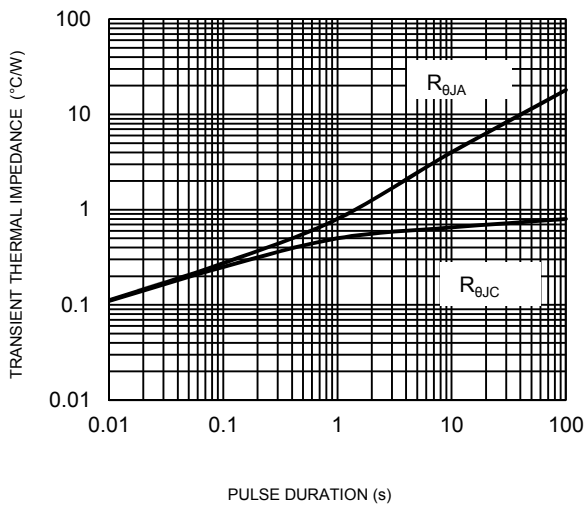
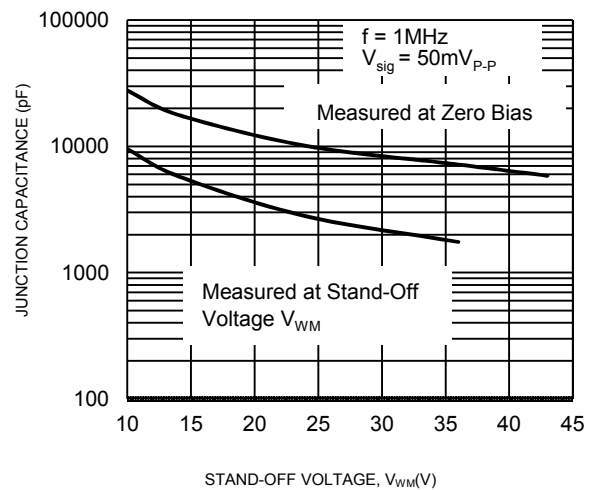
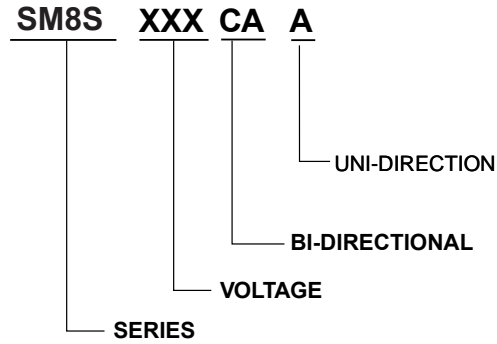


Fig.6 Typical Junction Capacitance

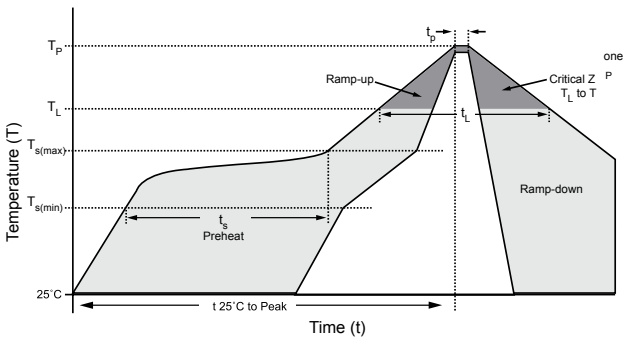


Part Numbering System

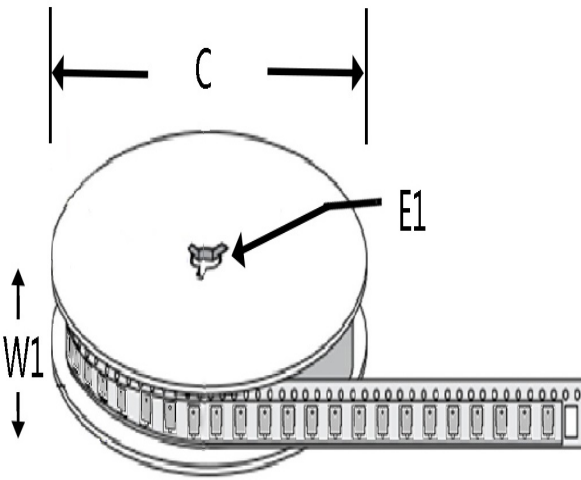
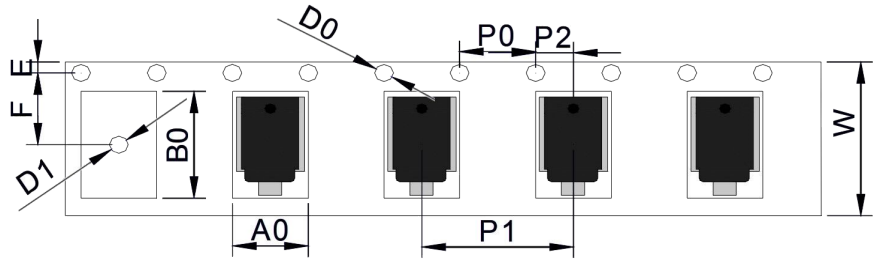
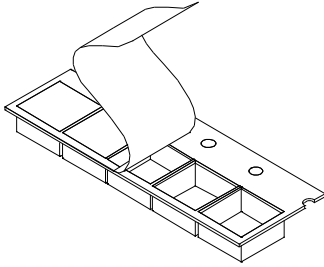


Soldering Parameters

	Feflow Condition	Lead-free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	150°C
	- Temperature Max ($T_{s(max)}$)	200°C
	- Time (min to max) (t_s)	60-180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
TS(max) to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Time (min to max) (t_s)	60-150 seconds
Peak Temperature (T_P)		260 \pm 0/-5 °C
Time within 5°C of actual peak Temperature (t_p)		20-40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes Max.
Do not exceed		280°C



Surface Mount Tape and Reel Packaging



Ref.	Dimensions	
	Millimeters	Inches
A0	10.80 ± 0.3	0.425 ± 0.012
B0	16.13 ± 0.3	0.635 ± 0.012
C	330.0 ± 0.3	13.0 ± 0.012
D0	1.55 ± 0.2	0.061 ± 0.008
D1	1.55 ± 0.2	0.061 ± 0.008
E	1.75 ± 0.2	0.069 ± 0.008
E1	13.30 ± 0.2	0.524 ± 0.008
F	11.50 ± 0.2	0.453 ± 0.008
P0	4.00 ± 0.2	0.157 ± 0.008
P1	16.00 ± 0.2	0.630 ± 0.008
P2	2.00 ± 0.2	0.079 ± 0.008
W	24.00 ± 0.2	0.945 ± 0.008
W1	25.85 ± 0.2	1.018 ± 0.008

ORDERING INFORMATION

PART No.	UNIT WEIGHT (g)typ	REEL (PCS)	PER CARTON (PCS)	DESCRIPTION
SM8SxxA	2.985	750	3000	13 inch reel pack



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