

FEATURE

- ✧ Junction passivation optimized design passivated anisotropic rectifier technology.
- ✧ $T_J = 175\text{ }^\circ\text{C}$ capability suitable for high reliability and automotive requirement.
- ✧ Available in uni-directional polarity only.
- ✧ Low leakage current.
- ✧ Low forward voltage drop.
- ✧ High surge capability.
- ✧ Meets ISO7637-2 surge specification (varied by test condition).
- ✧ Meets MSL level 1, per J-STD-020, LF maximum peak of $245\text{ }^\circ\text{C}$.



MECHANICAL DATE

- ✧ Case: DO-218AB, Molding compound meets UL 94 V-0 flammability rating Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified.
- ✧ Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102, HE3 suffix meets JESD 201 class 2 whisker test.
- ✧ Polarity: Heatsink is anode.
- ✧ Mounting Position: Any.

MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at $25\text{ }^\circ\text{C}$ ambient temperature unless otherwise specified.

PARAMETER		SYMBOL	VALUE	UNITS
Peak pulse power dissipation	with 10/1000 μs waveform	P_{PPM}	6600	W
	with 10/10 000 μs waveform		5200	
Power dissipation on infinite heatsink at $T_C = 25\text{ }^\circ\text{C}$ (fig. 1)		P_D	8.0	W
Peak pulse current with 10/1000 μs waveform		$I_{PPM}^{(1)}$	See next table	A
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	$^\circ\text{C}$

Notes:

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

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ELECTRICAL CHARACTERISTICS

Part Number	BREAKDOWN VOLTAGE V_{BR} (V)		TEST CURRENT	STAND-OFF VOLTAGE	MAXIMUM REVERSE LEAKAGE AT V_{WM} I_D (μA)	MAXIMUM REVERSE LEAKAGE AT V_{WM} $T_J = 175\text{ }^\circ C$ I_D (μA)	MAX PEAK PULSE CURRENT AT 10/1000 μs WAVEFORM	MAXIMUM CLAMPING VOLTAGE AT I_{PPM}
	MIN.	MAX.	I_T (mA)	V_{WM} (V)			$I_{PPM}(A)$	V_C (V)
SM8S10	11.1	13.6	5.0	10.0	15	250	351	18.8
SM8S10A	11.1	12.3	5.0	10.0	15	250	388	17.0
SM8S11	12.2	14.9	5.0	11.0	10	150	328	20.1
SM8S11A	12.2	13.5	5.0	11.0	10	150	363	18.2
SM8S12	13.3	16.3	5.0	12.0	10	150	300	22.0
SM8S12A	13.3	14.7	5.0	12.0	10	150	332	19.9
SM8S13	14.4	17.6	5.0	13.0	10	150	277	23.8
SM8S13A	14.4	15.9	5.0	13.0	10	150	307	21.5
SM8S14	15.6	19.1	5.0	14.0	10	150	256	25.8
SM8S14A	15.6	17.2	5.0	14.0	10	150	284	23.2
SM8S15	16.7	20.4	5.0	15.0	10	150	245	26.9
SM8S15A	16.7	18.5	5.0	15.0	10	150	270	24.4
SM8S16	17.8	21.8	5.0	16.0	10	150	229	28.8
SM8S16A	17.8	19.7	5.0	16.0	10	150	254	26.0
SM8S17	18.9	23.1	5.0	17.0	10	150	216	30.5
SM8S17A	18.9	20.9	5.0	17.0	10	150	239	27.6
SM8S18	20.0	24.4	5.0	18.0	10	150	205	32.2
SM8S18A	20.0	22.1	5.0	18.0	10	150	226	29.2
SM8S20	22.2	27.1	5.0	20.0	10	150	184	35.8
SM8S20A	22.2	24.5	5.0	20.0	10	150	204	32.4
SM8S22	24.4	29.8	5.0	22.0	10	150	168	39.4
SM8S22A	24.4	26.9	5.0	22.0	10	150	186	35.5
SM8S24	26.7	32.6	5.0	24.0	10	150	153	43.0
SM8S24A	26.7	29.5	5.0	24.0	10	150	170	38.9
SM8S26	28.9	35.3	5.0	26.0	10	150	142	46.6
SM8S26A	28.9	31.9	5.0	26.0	10	150	157	42.1
SM8S28	31.1	38.0	5.0	28.0	10	150	132	50.1
SM8S28A	31.1	34.4	5.0	28.0	10	150	145	45.4
SM8S30	33.3	40.7	5.0	30.0	10	150	123	53.5
SM8S30A	33.3	36.8	5.0	30.0	10	150	136	48.4
SM8S33	36.7	44.9	5.0	33.0	10	150	112	59.0
SM8S33A	36.7	40.6	5.0	33.0	10	150	124	53.3
SM8S36	40.0	48.9	5.0	36.0	10	150	103	64.3
SM8S36A	40.0	44.2	5.0	36.0	10	150	114	58.1
SM8S40	44.4	54.3	5.0	40.0	10	150	92.4	71.4
SM8S40A	44.4	49.1	5.0	40.0	10	150	102	64.5
SM8S43	47.8	58.4	5.0	43.0	10	150	86	76.7
SM8S43A	47.8	52.8	5.0	43.0	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 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

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RATINGS AND CHARACTERISTIC CURVES (TA=25°C unless otherwise noted)

Figure 1 - Power Derating Curve

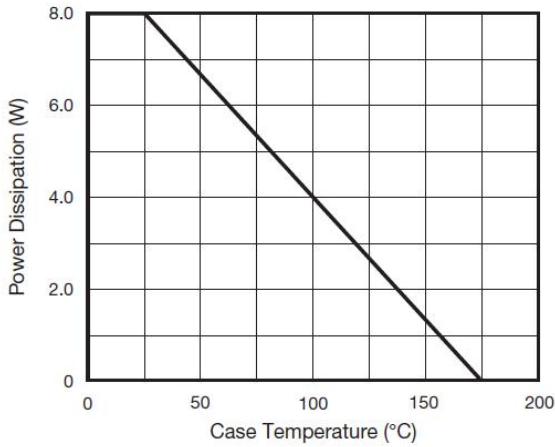


Figure 2 - Pulse Waveform

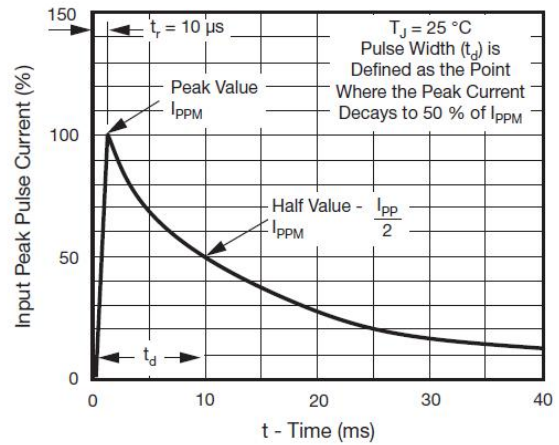


Figure 3 - Load Dump Power Characteristics (10 ms Exponential Waveform)

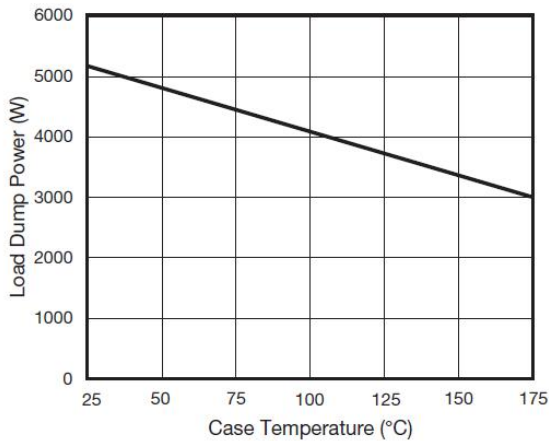


Figure 4 - Reverse Power Capability

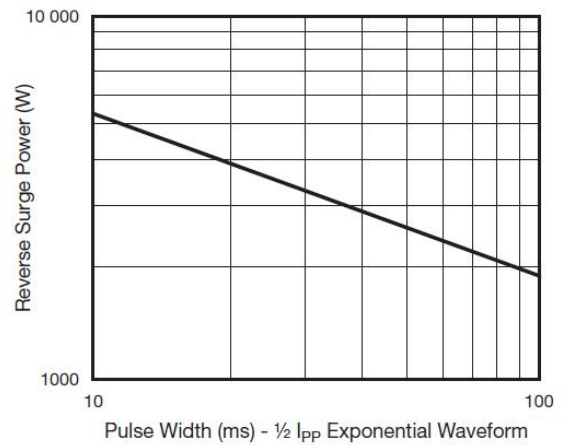


Figure 5 - Typical Transient Thermal Impedance

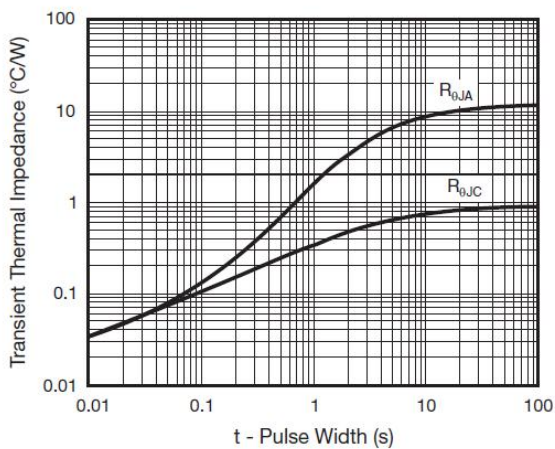
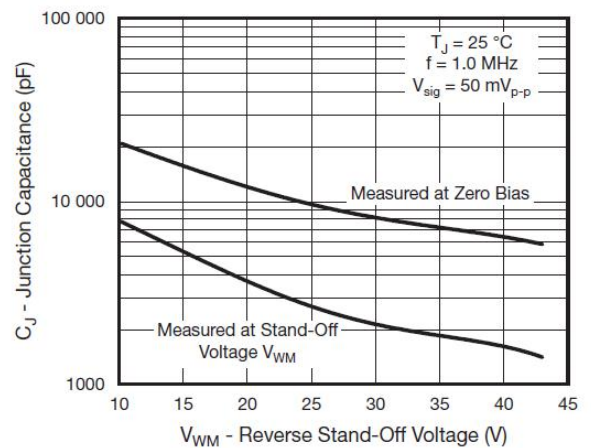
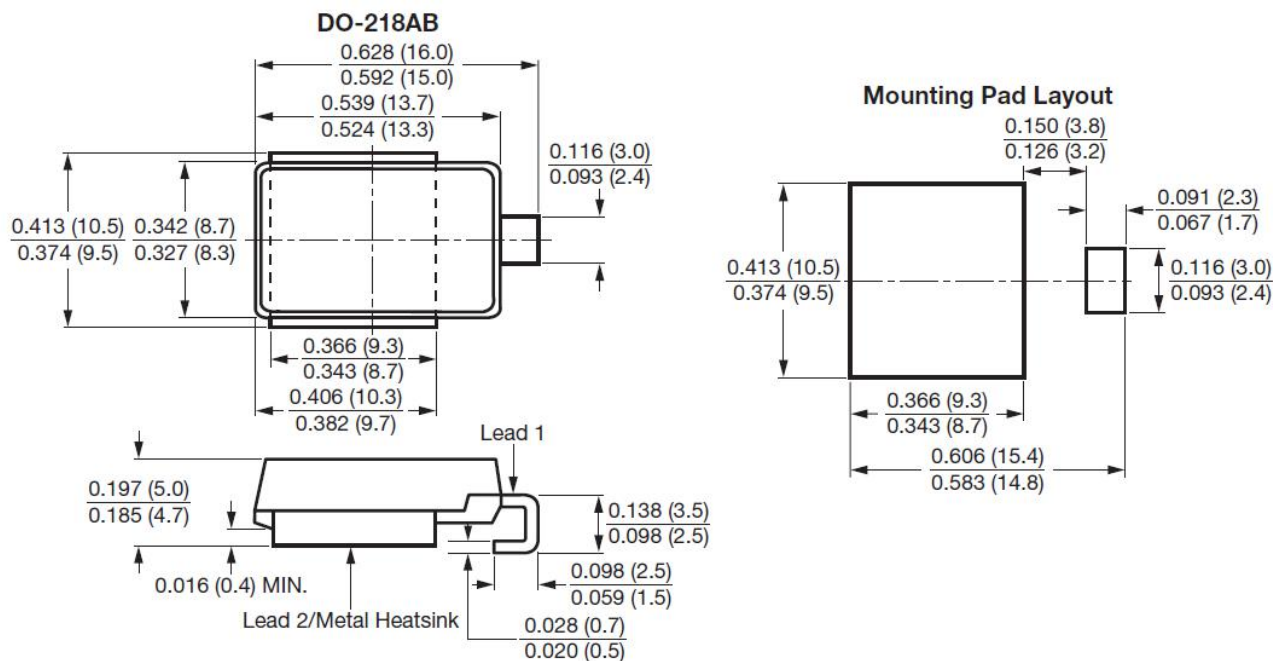


Figure 6 - Typical Junction Capacitance



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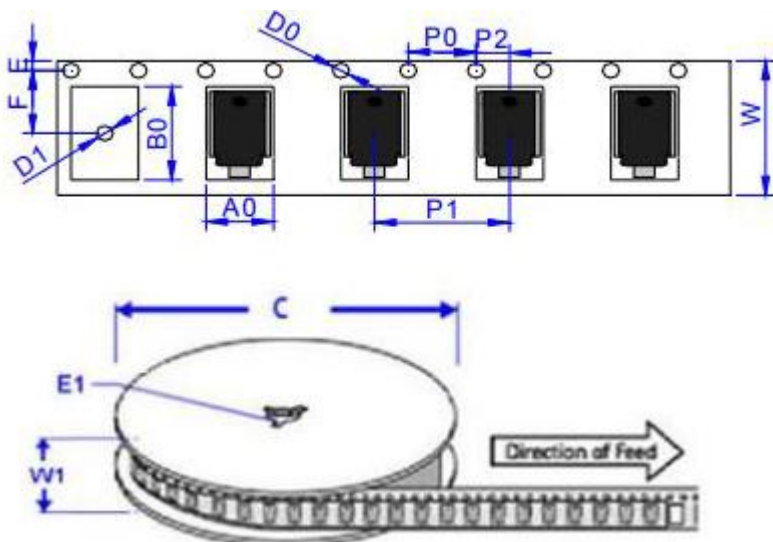
DIMENSIONS in inches (millimeters)



ORDERING INFORMATION

PART No.	UNIT WEIGHT(g) (PCS)	REEL (PCS)	PER CARTON (PCS)	DESCRIPTION
SM8SxxA	2.985	750	3000	13 inch reel pack
SM8SxxA	2.985	750	6000	13 inch reel pack

TAPE AND REEL SPECIFICATION-DO-218AB



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

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