Technical Data
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SM8S20A THRU SM8S43A TRANSIENT VOLTAGE SUPPRESSOR

DO-218AB

Features

- Junction passivation optimized design passivated anisotropic rectifier technology
- T_J = 175℃ capability suitable for high reliability and automotive requirement.
- Available in uni-directional polarity only
- Low leakage current
- Low forward voltage drop
- High surge capability
- AEC-Q101 qualified.

Circuit Diagram

Uni-direction

Mechanical Data

- Case: DO-218AB
- Molding compound meets UL 94V-0 flammability rating
- Base P/NHE3-RoHS-compliant, AEC-Q101 qualified
- Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

Maximum Ratings and Thermal Characteristics@T_A=25°C unless otherwise specified

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 10/1000 μs waveform	P_{PPM}	6600	W
Peak pulse power dissipation on 10/10000 μs waveform		5200	W
Power dissipation on infinite heat sink at T_C = 25°C	P_D	8.0	W
Peak forward surge current 8.3 ms single half sine-wave	I_{FSM}	700	A
Typical thermal resistance, junction to case	$R_{\theta JC}$	0.9	°C/W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 to 175	°C

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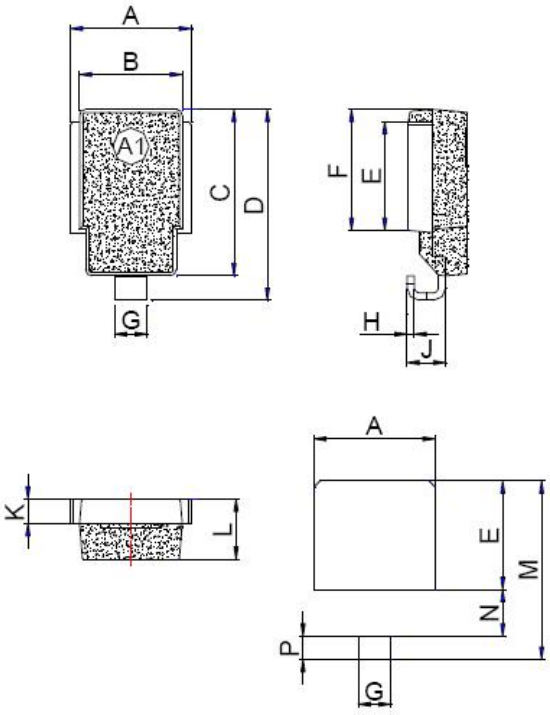
Electrical Characteristics@T_A=25° C unless otherwise specified

DEVICE TYPE	REVERSE STAND-OFF VOLTAGE V_{RWM} (V)	BREAKDOWN VOLTAGE V_{BR} (V) @I_T		TEST CURRENT I_T	CLAMPING VOLTAGE V_C@I_{PP}	PEAK PULSE CURRENT AT 10/1000μs WAVEFORM I_{PP}	REVERSE LEAKAGE CURRENT I_R	
		MIN.	MAX.	MA	V	A	μA@25°C	μA@175°C
SM8S20A	20	22.2	24.5	5	32.4	204	5	150
SM8S22A	22	24.4	26.9	5	35.5	186	5	150
SM8S24A	24	26.7	29.5	5	38.9	170	5	150
SM8S26A	26	28.9	31.9	5	42.1	157	5	150
SM8S28A	28	31.1	34.4	5	45.4	145	5	150
SM8S30A	30	33.3	36.8	5	48.4	136	5	150
SM8S32A	32	35.5	39.4	5	51.4	128.5	5	150
SM8S33A	33	36.7	40.6	5	53.3	124	5	150
SM8S36A	36	40.0	44.2	5	58.1	114	5	150
SM8S40A	40	44.4	49.1	5	64.5	102	5	150
SM8S43A	43	47.8	52.8	5	69.4	95.1	5	150

Mechanical Dimensions DO-218AB(Inches/Millimeters)



SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	9.5	10.5	0.374	0.413
B	8.3	8.7	0.327	0.342
C	13.3	13.7	0.524	0.539
D	15.0	16.0	0.592	0.628
E	8.5	9.1	0.335	0.358
F	9.5	10.1	0.374	0.398
G	2.4	3.0	0.094	0.118
H	0.5	0.7	0.020	0.028
J	2.7	3.7	0.106	0.146
K	1.9	2.1	0.075	0.083
L	4.7	5.1	0.185	0.201
M	14.2	14.8	0.559	0.583
N	3.5	4.1	0.138	0.161
P	1.6	2.2	0.063	0.087

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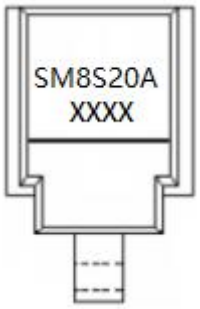
Ordering Information

Device	Package	Shipping
SM8S20A THRU SM8S43A	DO-218AB	750pcs / reel

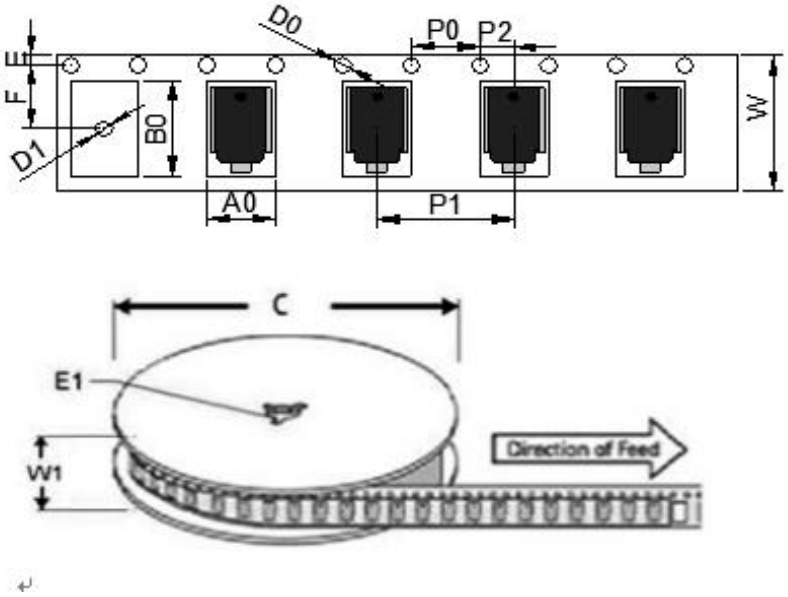
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

Marking Diagram



SM8S20A = Part Name
XXXX = Date Code

Carrier Tape 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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Ratings and Characteristics Curves

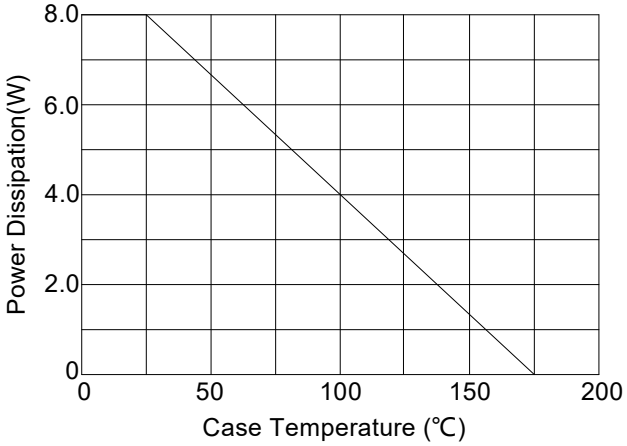

FIG.1: Power derating curve

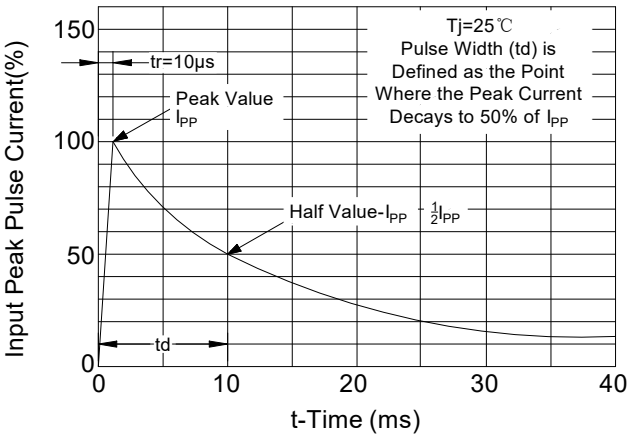

FIG.2: Pulse waveform

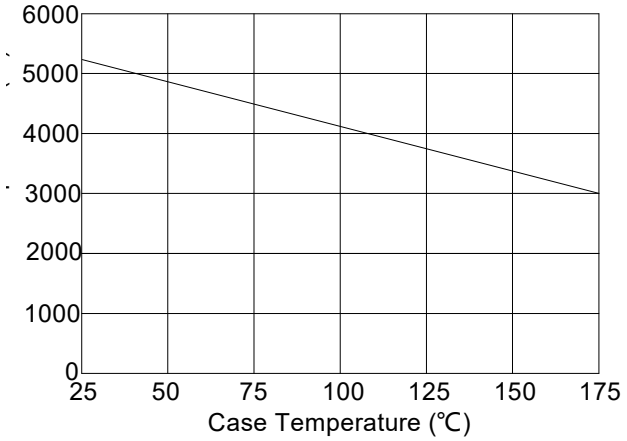

FIG.3: Load Dump Power Characteristics (10ms Exponential Waveform)

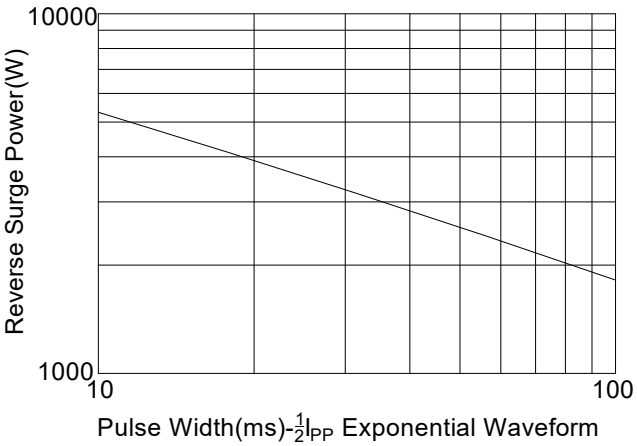

FIG.4: Reverse Power Capability

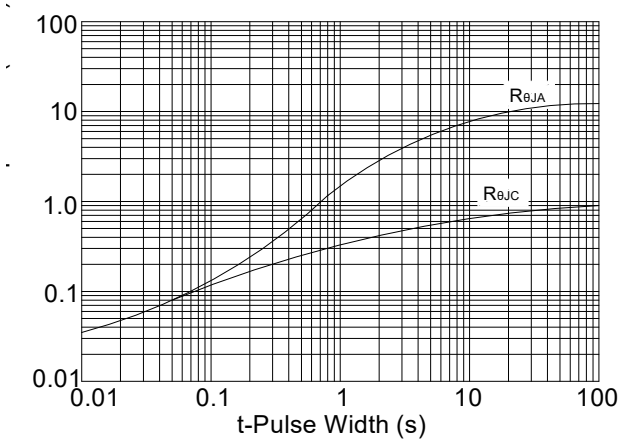

FIG.5: Typical Transient Thermal Impedance

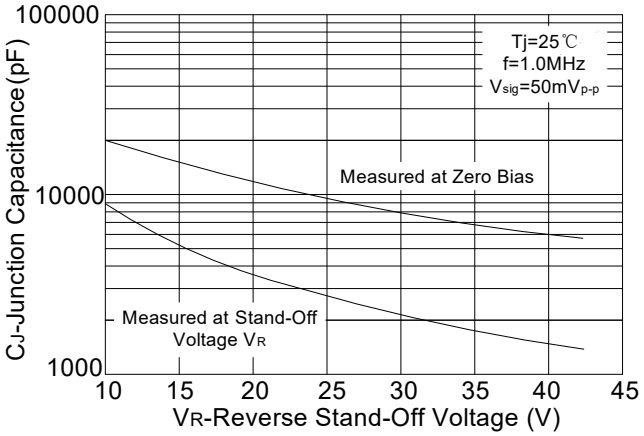

FIG.6: Typical Junction Capacitance

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