

FEATURES

- | Junction passivation optimized design passivated anisotropic rectifier technology.
- | $T_J = 175^{\circ}\text{C}$ capability suitable for high reliability and automotive requirement.
- | Available in Bidirectional polarity.
- | Low leakage current.
- | High surge capability.
- | Meets ISO16750-2 surge specification(varied by test condition).
- | Meets ISO7637-2 5a surge specification
- | Meet AEC-Q101 Requirements



DO-218AB



Schematic Symbol

TYPICAL APPLICATIONS

- | Inductive load switching
- | Alternator Load Dump
- | Other applications in automotive circuits

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS ($T_A = 25^{\circ}\text{C}$)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000us waveform	P_{PPM}	8000	W
Peak Pulse Power Dissipation on 10/10000us waveform	P_{PPM}	6000	W
Power Dissipation on Infinite Heat Sink at $T_A = 25^{\circ}\text{C}$	P_D	8.5	W
Peak Pulse Current of on 10/1000us waveform	I_{PPM}	see table	A
Typical thermal resistance, junction to case	$R_{\theta JC}$	0.90	$^{\circ}\text{C/W}$
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +175	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS

Part Number	Device Marking Code	Reverse Stand-off Voltage	Breakdown Voltage Min.@I _T	Breakdown Voltage Max.@I _T	Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}	Reverse Leakage @V _{RWM} T _J =175°C
		V _{RWM} (V)	V _{BR} (V)	V _{BR} (V)	I _T (mA)	V _C (V)	I _{PP} (A) ⁽¹⁾	I _R (uA) ⁽¹⁾	I _R (uA)
SM8T20A	SM8T20A	20.0	22.2	24.5	5.0	32.4	247	5.0	150
SM8T22A	SM8T22A	22.0	24.4	26.9	5.0	35.5	225	5.0	150
SM8T24A	SM8T24A	24.0	26.7	29.5	5.0	38.9	205	5.0	150
SM8T26A	SM8T26A	26.0	28.9	31.9	5.0	42.1	190	5.0	150
SM8T28A	SM8T28A	28.0	31.1	34.4	5.0	45.4	176	5.0	150
SM8T30A	SM8T30A	30.0	33.3	36.8	5.0	48.4	165	5.0	150
SM8T32A	SM8T32A	32.0	35.5	39.4	5.0	51.4	156	5.0	150
SM8T33A	SM8T33A	33.0	36.7	40.6	5.0	53.3	150	5.0	150
SM8T36A	SM8T36A	36.0	40.0	44.2	5.0	58.1	138	5.0	150
SM8T40A	SM8T40A	40.0	44.4	49.1	5.0	64.5	124	5.0	150
SM8T43A	SM8T43A	43.0	47.8	52.8	5.0	69.4	115	5.0	150
SM8T48A	SM8T48A	48.0	53.3	58.7	5.0	80.6	99	5.0	150
SM8T51A	SM8T51A	51.0	56.7	62.7	5.0	82.4	97	5.0	150
SM8T54A	SM8T54A	54.0	60.0	66.3	5.0	87.1	92	5.0	150
SM8T58A	SM8T58A	58.0	64.4	71.2	5.0	93.6	86	5.0	150
SM8T60A	SM8T60A	60.0	66.7	73.7	5.0	96.8	83	5.0	150
SM8T70A	SM8T70A	70.0	77.8	86.0	5.0	113.0	71	5.0	150
SM8T80A	SM8T80A	80.0	88.8	97.6	5.0	129.6	62	5.0	150
SM8T85A	SM8T85A	85.0	94.4	104.0	5.0	137.0	58.4	5.0	150

RATINGS AND CHARACTERISTICS CURVES (T_A=25°C)

Figure 1: Power derating curve

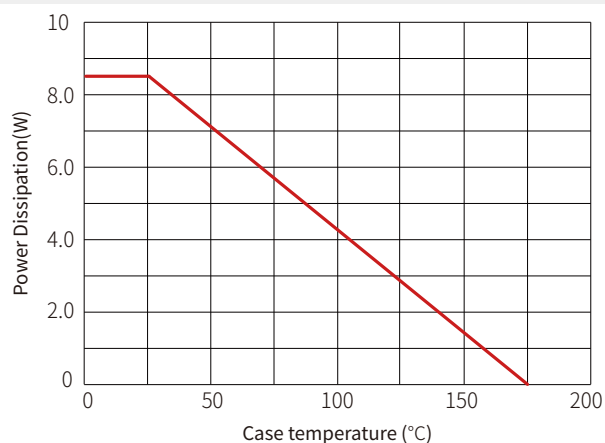


Figure 2: Load Dump Power Characteristics

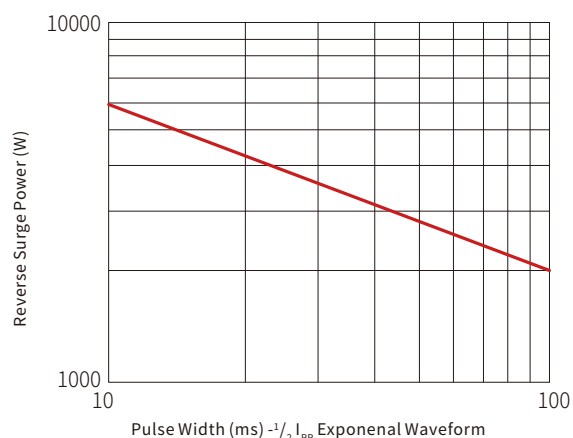
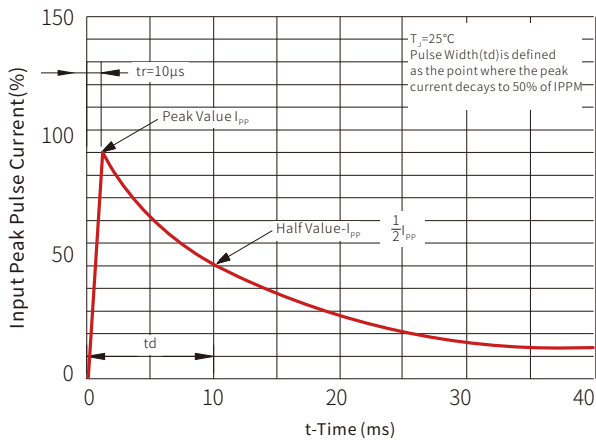
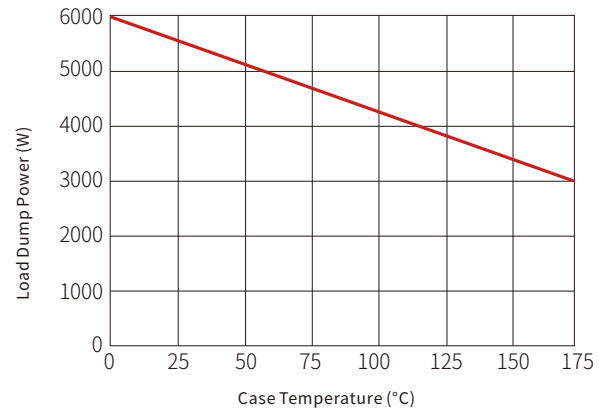
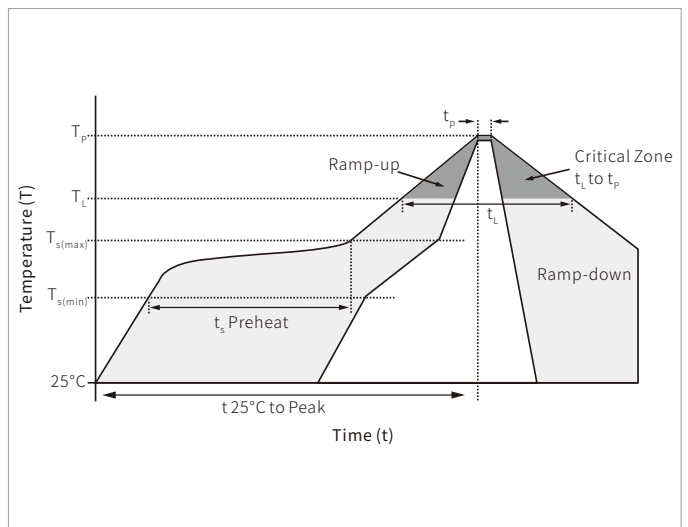


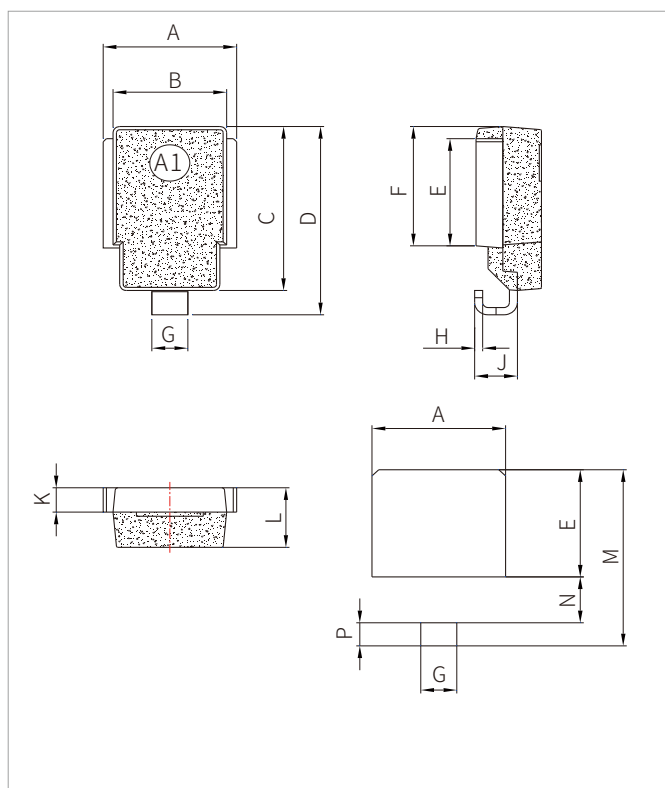
Figure 3: Pulse waveform

Figure 4: Reverse power capability


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	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
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_p)		260°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		260°C



DO-218AB PACKAGE INFORMATION



Ref.	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

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SM8TxxA	DO-218AB	750PCS	13"

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