

Features

- RoHS compliant junction passivation
- SM15SxxA-Q1 available in Uni-directional polarity only
- SM15SxxCA-Q1 available in Bi-directional polarity only
- Low leakage current
- Low forward voltage drop
- Compliant to Halogen-free
- Suffix "-Q1" for AEC-Q101



DO-218AB

Mechanical Characteristics

- Package: DO-218AB
- Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- 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.

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with 10/1000us waveform	P_{PPM}	15000	W
Peak pulse current on 8/20us waveform	I_{PPM}	1000	A
Power dissipation on infinite heatsink at $T_C = 25^{\circ}\text{C}$ (fig.1)	P_D	8.0	W
Peak pulse current with 10/1000us waveform	$I_{PPM}^{(1)}$	See next table	A
Peak forward surge current 8.3ms single half sine-wave	I_{FSM}	100	A
Maximum instantaneous forward voltage at 100A (Only Uni-directional)	$V_F^{(2)}$	5.0	V
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +175	$^{\circ}\text{C}$

Notes

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

(2) Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

Electrical Characteristics ($T_C=25^{\circ}\text{C}$, unless otherwise noted)

DEVICE TYPE	BREAKDOWN VOLTAGE V_{BR} (V)			TEST CURRENT I_T (mA)	STAND-OFF VOLTAGE V_{WM} (V)	MAXIMUM REVERSE LEAKAGE AT V_{WM} I_D (μA)	MAXIMUM REVERSE LEAKAGE AT V_{WM} $T_J = 175^{\circ}\text{C}$ I_D (μA)	MAX. PEAK PULSE CURRENT AT 10/1000 μs WAVEFORM (A)	MAXIMUM CLAMPING VOLTAGE AT I_{PPM} V_C (V)
	MIN.	NOM.	MAX.						
SM15S10(C)A-Q1	11.1	11.7	12.3	5.0	10.0	200	150	882	17.0
SM15S11(C)A-Q1	12.2	12.9	13.5	5.0	11.0	200	150	824	18.2
SM15S12(C)A-Q1	13.3	14.0	14.7	5.0	12.0	200	150	754	19.9
SM15S13(C)A-Q1	14.4	15.2	15.9	5.0	13.0	200	150	698	21.5
SM15S14(C)A-Q1	15.6	16.4	17.2	5.0	14.0	200	150	647	23.2
SM15S15(C)A-Q1	16.7	17.6	18.5	5.0	15.0	200	150	615	24.4
SM15S16(C)A-Q1	17.8	18.8	19.7	5.0	16.0	200	150	577	26.0
SM15S17(C)A-Q1	18.9	19.9	20.9	5.0	17.0	200	150	543	27.6
SM15S18(C)A-Q1	20.0	21.1	22.1	5.0	18.0	200	150	514	29.2
SM15S20(C)A-Q1	22.2	23.4	24.5	5.0	20.0	10	150	463	32.4
SM15S22(C)A-Q1	24.4	25.7	26.9	5.0	22.0	10	150	423	35.5
SM15S24(C)A-Q1	26.7	28.1	29.5	5.0	24.0	10	150	386	38.9
SM15S26(C)A-Q1	28.9	30.4	31.9	5.0	26.0	10	150	356	42.1
SM15S28(C)A-Q1	31.1	32.8	34.4	5.0	28.0	10	150	330	45.4
SM15S30(C)A-Q1	33.3	35.1	36.8	5.0	30.0	10	150	310	48.4
SM15S33(C)A-Q1	36.7	38.7	40.6	5.0	33.0	10	150	281	53.3
SM15S36(C)A-Q1	40.0	42.1	44.2	5.0	36.0	10	150	258	58.1
SM15S40(C)A-Q1	44.4	46.8	49.1	5.0	40.0	10	150	233	64.5
SM15S43(C)A-Q1	47.8	50.3	52.8	5.0	43.0	10	150	216	69.4
SM15S45(C)A-Q1	50.0	52.7	55.3	5.0	45.0	10	150	206	72.7
SM15S48(C)A-Q1	53.3	56.1	58.9	5.0	48.0	10	150	194	77.4
SM15S51(C)A-Q1	56.7	59.7	62.7	5.0	51.0	10	150	182	82.4
SM15S54(C)A-Q1	60.0	63.1	66.3	5.0	54.0	10	150	172	87.1
SM15S58(C)A-Q1	64.4	67.8	71.2	5.0	58.0	10	150	160	93.6
SM15S60(C)A-Q1	66.7	70.2	73.7	5.0	60.0	10	150	155	96.8
SM15S64(C)A-Q1	71.1	74.9	78.6	5.0	64.0	10	150	146	103
SM15S70(C)A-Q1	77.8	81.9	86.0	5.0	70.0	10	150	133	113
SM15S75(C)A-Q1	83.3	87.7	92.1	5.0	75.0	10	150	124	121
SM15S78(C)A-Q1	86.7	91.3	95.8	5.0	78.0	10	150	119	126
SM15S85(C)A-Q1	94.4	99.2	104.0	5.0	85.0	10	150	109	137

Ratings and Characteristics Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig. 1 - Power Derating Curve

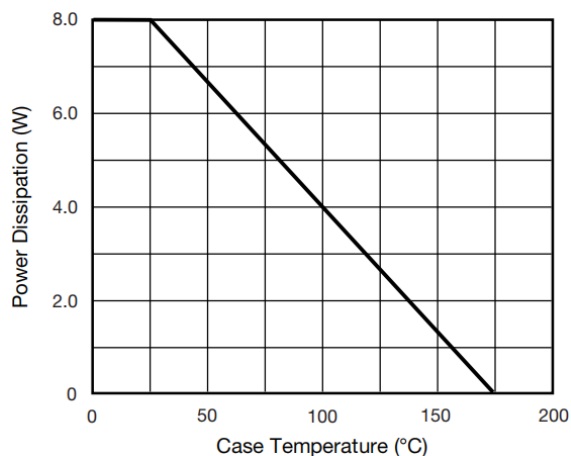


Fig. 2 - Peak Power Dissipation

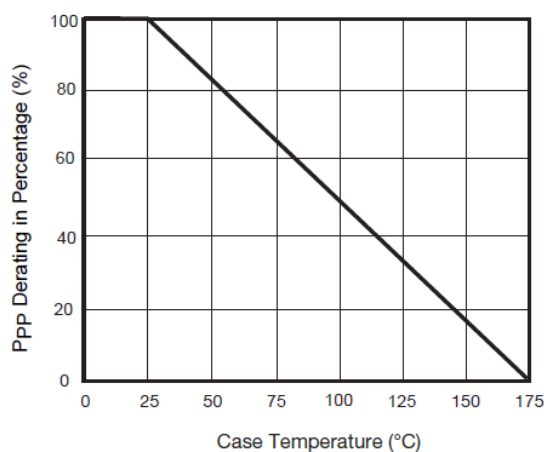


Fig. 3 - Pulse Waveform

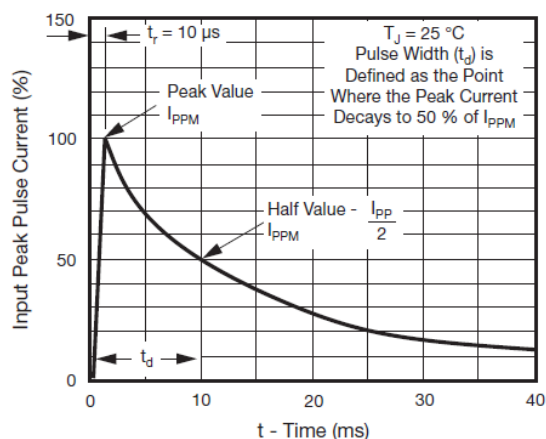
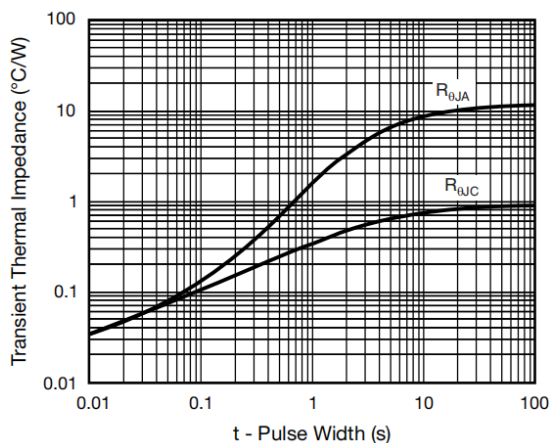
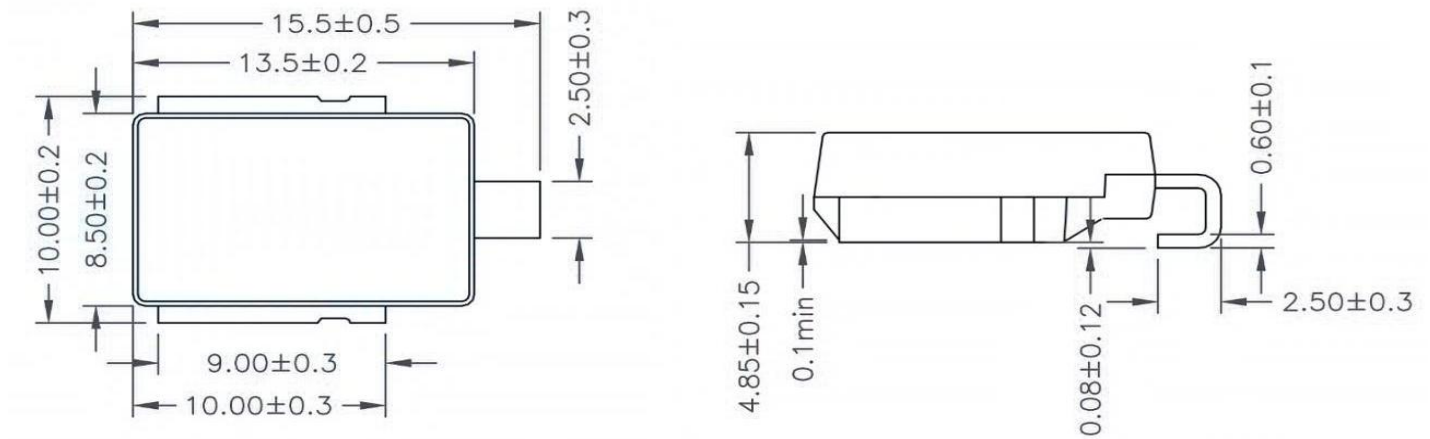


Fig. 4 - Typical Transient Thermal Impedance



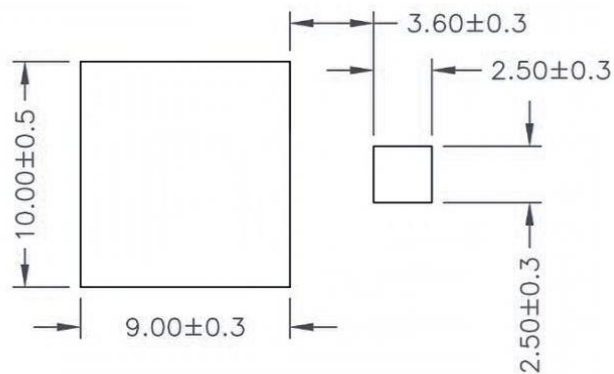
OUTLINE DIMENSIONS

DO-218AB



(millimeters)

MOUNTING PAD LAYOUT



(millimeters)