

FEATURES

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Available in uni-directional and bi-directional
- 600 W peak pulse power capability with a 10/1000 μ s waveform, repetitive rate (duty cycle): 0.01 %
- Excellent clamping capability
- Very fast response time
- Low incremental surge resistance
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified available
 - Automotive ordering code: base P/NHE3 or P/NHM3

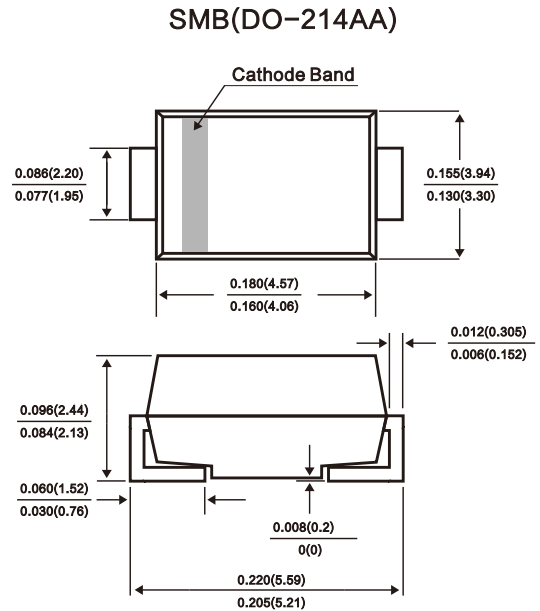
MECHANICAL DATA

Case: SMB (DO-214AA)

Molding compound meets UL 94 V-0 flammability rating
 Base P/N-E3 - RoHS-compliant, commercial grade
 Base P/N-M3 - halogen-free, RoHS-compliant, commercial grade
 Base P/NHE3_X - RoHS-compliant and AEC-Q101 qualified
 Base P/NHM3_X - halogen-free, RoHS-compliant, and AEC-Q101 qualified
 (“_X” denotes revision code e.g. A, B, and only available for 250 V to 540 V type)

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
 E3, M3, HE3, and HM3 suffix meets JESD 201 class 2 whisker test

Polarity: for uni-directional types the band denotes cathode end, no marking on bi-directional types



Dimensions in inches and (millimeters)

MAXIMUM RATINGS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Peak power dissipation with a 10/1000 μ s waveform ⁽¹⁾⁽²⁾ (fig. 1)	P_{PPM}	600	W
Maximum Instantaneous Forward Voltage at 50.0A for Unidirectional Only (Note 4)	V_F	3.5	Volts
Power dissipation on infinite heatsink at $T_A = 50\text{ }^\circ\text{C}$	P_D	5.0	W
Peak forward surge current 8.3 ms single half sine-wave uni-directional only ⁽²⁾	I_{FSM}	100	A
Operating junction and storage temperature range	T_J, T_{STG}	-65 to +150	$^\circ\text{C}$

Notes

- (1) Non-repetitive current pulse, per fig. 3 and derated above $T_A = 25\text{ }^\circ\text{C}$ per fig. 2
- (2) Mounted on 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pads to each terminal

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

Notes

- (1) Pulse test: $t_p \leq 50\text{ ms}$
- (2) Surge current waveform per fig. 3 and derate per fig. 2
- (3) For bi-directional types with V_{WM} of 10 V and less, the I_D limit is doubled
- (4) All terms and symbols are consistent with ANSI/IEEE CA62.35
- (5) $V_F = 3.5\text{ V}$ at $I_F = 50\text{ A}$ (uni-directional only)

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

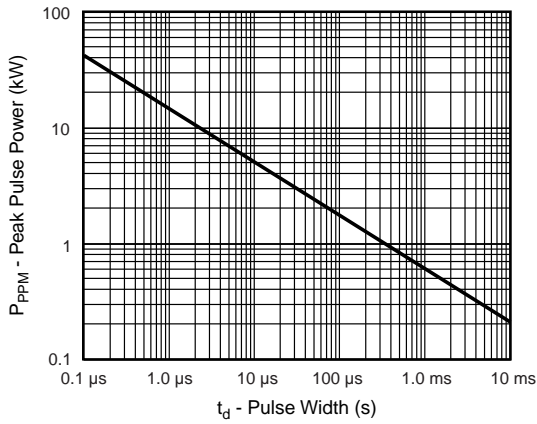


Fig. 1 - Peak Pulse Power Rating Curve

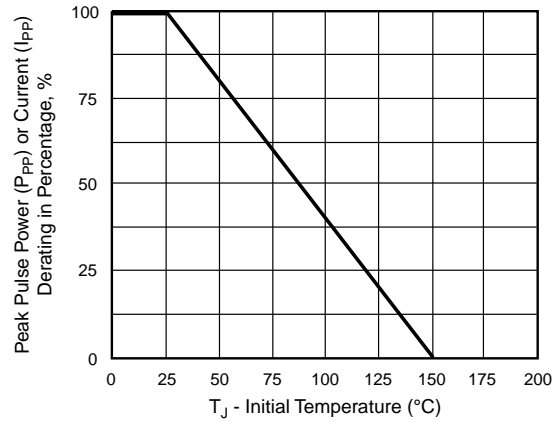


Fig. 2 - Pulse Power or Current vs. Initial Junction Temperature

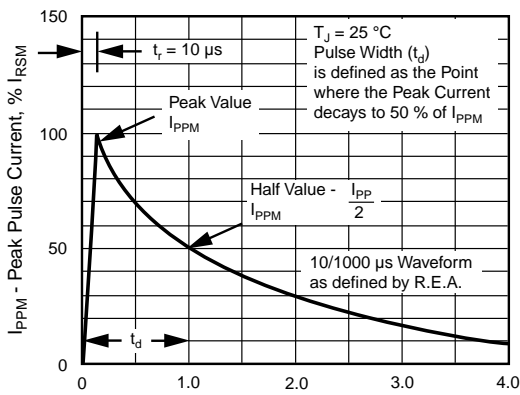


Fig. 3 - Pulse Waveform

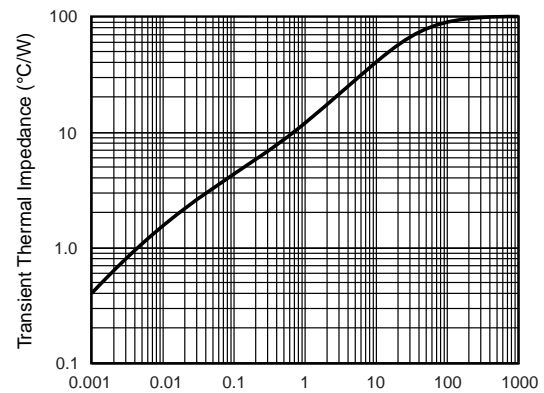


Fig. 5 - Typical Transient Thermal Impedance

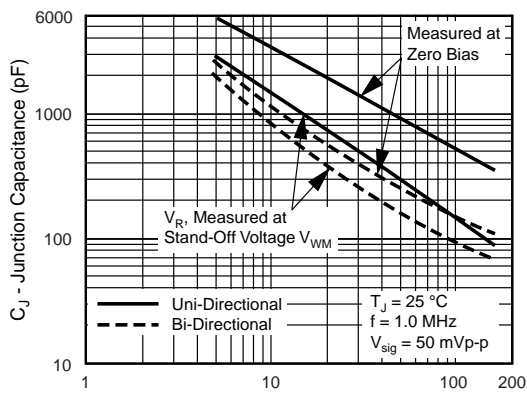


Fig. 4 - Typical Junction Capacitance

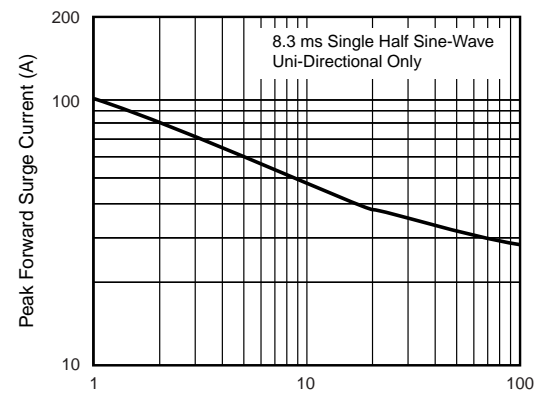


Fig. 6 - Maximum Non-Repetitive Peak Forward Surge Current

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