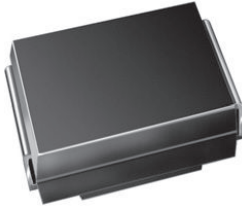


High Voltage Surface-Mount Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance


SMB (DO-214AA)

Cathode Anode

LINKS TO ADDITIONAL RESOURCES


| PRIMARY CHARACTERISTICS | |
|-------------------------|----------------|
| $I_{F(AV)}$ | 2.0 A |
| V_{RRM} | 90 V, 100 V |
| I_{FSM} | 75 A |
| V_F | 0.65 V |
| I_R | 10 μ A |
| T_J max. | 175 °C |
| Package | SMB (DO-214AA) |
| Circuit configuration | Single |

FEATURES

- Low profile package
- Guardring for overvoltage protection
- Ideal for automated placement
- Low power losses, high efficiency
- Low forward voltage drop
- Low leakage current
- High surge capability
- 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
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications.

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,)

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: color band denotes the cathode end

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)

| PARAMETER | SYMBOL | SS2H9 | SS2H10 | UNIT |
|--|----------------|-------------|--------|------------|
| Device marking code | | MS9 | MS10 | |
| Maximum repetitive peak reverse voltage | V_{RRM} | 90 | 100 | V |
| Working peak reverse voltage | V_{RWM} | 90 | 100 | V |
| Maximum DC blocking voltage | V_{DC} | 90 | 100 | V |
| Maximum average forward rectified current at: $T_L = 130$ °C | $I_{F(AV)}$ | 2.0 | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 75 | | A |
| Peak repetitive reverse surge current at $t_p = 2.0$ μ s, 1 kHz | I_{RRM} | 1.0 | | A |
| Voltage rate of change (rated V_R) | dV/dt | 10 000 | | V/ μ s |
| Operating junction and storage temperature range | T_J, T_{STG} | -65 to +175 | | °C |

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

| PARAMETER | TEST CONDITIONS | SYMBOL | SS2H9 | SS2H10 | UNIT |
|---|----------------------|-----------------------------------|-------|--------|---------------|
| Maximum instantaneous forward voltage ⁽¹⁾ | $I_F = 2.0\text{ A}$ | $T_J = 25\text{ }^\circ\text{C}$ | 0.79 | | V |
| | | $T_J = 125\text{ }^\circ\text{C}$ | 0.65 | | |
| Maximum reverse current at rated V_R ⁽²⁾ | | $T_J = 25\text{ }^\circ\text{C}$ | 10 | | μA |
| | | $T_J = 125\text{ }^\circ\text{C}$ | 4 | | mA |

Notes(1) Pulse test: 300 μs pulse width, 1 % duty cycle(2) Pulse test: pulse width $\leq 40\text{ ms}$ **THERMAL CHARACTERISTICS** ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

| PARAMETER | SYMBOL | SS2H9 | SS2H10 | UNIT |
|---|-----------------|-------|--------|--------------------|
| Maximum thermal resistance junction-to-lead $T_L = 25\text{ }^\circ\text{C}$ ⁽¹⁾ | $R_{\theta JA}$ | 80 | | $^\circ\text{C/W}$ |
| | $R_{\theta JL}$ | 25 | | |

Note

(1) Units mounted on PCB with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

ORDERING INFORMATION (Example)

| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
|------------------------------|-----------------|------------------------|---------------|------------------------------------|
| SS2H10-E3/52T | 0.096 | 52T | 750 | 7" diameter plastic tape and reel |
| SS2H10-E3/5BT | 0.096 | 5BT | 3200 | 13" diameter plastic tape and reel |
| SS2H10HE3_A/H ⁽¹⁾ | 0.096 | H | 750 | 7" diameter plastic tape and reel |
| SS2H10HE3_A/I ⁽¹⁾ | 0.096 | I | 3200 | 13" diameter plastic tape and reel |
| SS2H10-M3/52T | 0.096 | 52T | 750 | 7" diameter plastic tape and reel |
| SS2H10-M3/5BT | 0.096 | 5BT | 3200 | 13" diameter plastic tape and reel |
| SS2H10HM3_A/H ⁽¹⁾ | 0.096 | H | 750 | 7" diameter plastic tape and reel |
| SS2H10HM3_A/I ⁽¹⁾ | 0.096 | I | 3200 | 13" diameter plastic tape and reel |

Note

(1) AEC-Q101 qualified

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

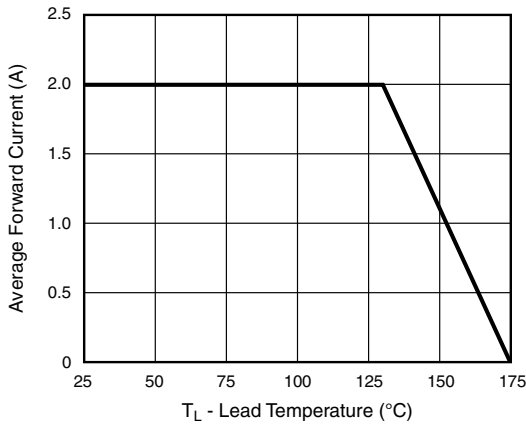


Fig. 1 - Forward Current Derating Curve

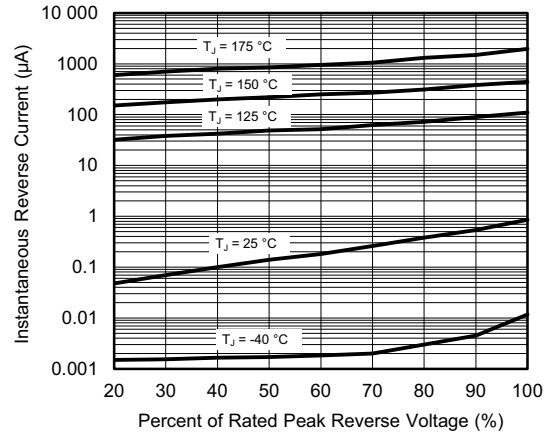


Fig. 4 - Typical Reverse Characteristics

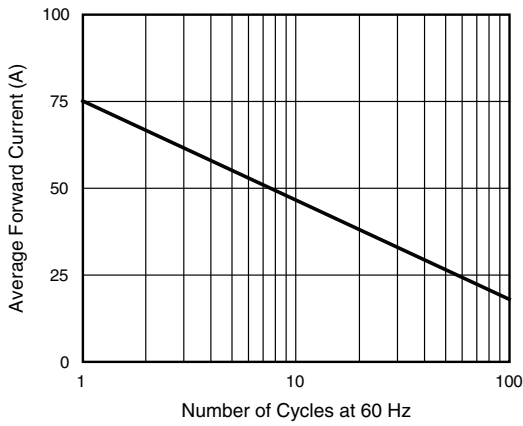


Fig. 2 - Max Non-Repetitive Peak Forward Surge Current

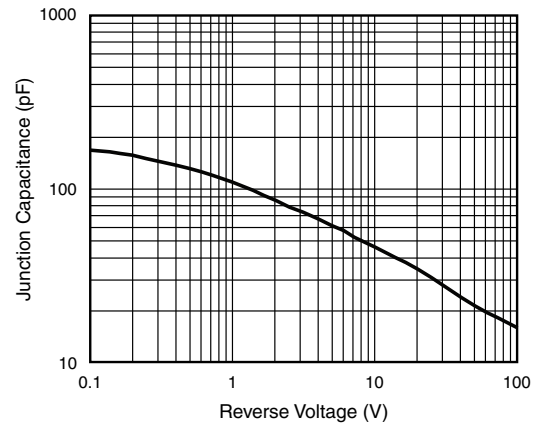


Fig. 5 - Typical Junction Capacitance

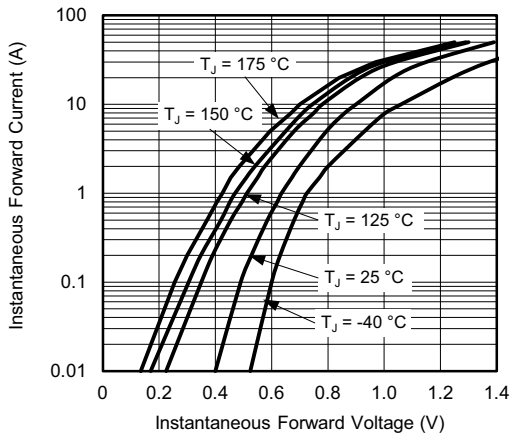


Fig. 3 - Typical Instantaneous Forward Characteristics

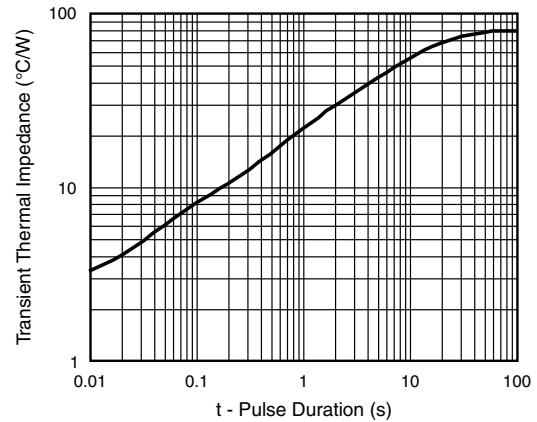
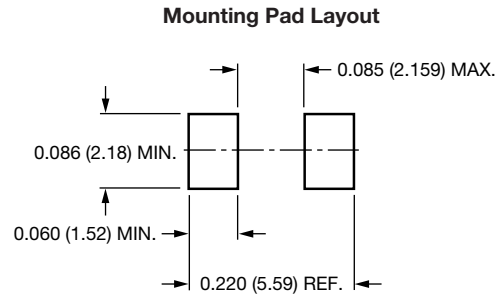
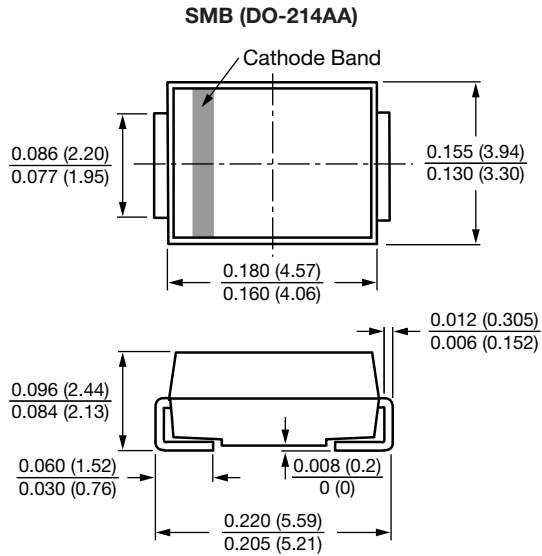


Fig. 6 - Typical Transient Thermal Impedance Per Leg



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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