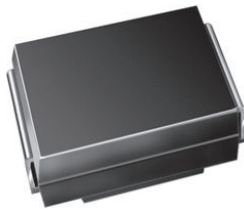


Surface-Mount Schottky Barrier Rectifier


SMB (DO-214AA)

Cathode Anode

LINKS TO ADDITIONAL RESOURCES


[3D Models](#)

PRIMARY CHARACTERISTICS

| | |
|-----------------------|----------------|
| $I_{F(AV)}$ | 2.0 A |
| V_{RRM} | 20 V, 30 V |
| I_{FSM} | 100 A |
| V_F | 0.32 V |
| T_J max. | 125 °C |
| Package | SMB (DO-214AA) |
| Circuit configuration | Single |

FEATURES

- Low profile package
- Ideal for automated placement
- Guardring for overvoltage protection
- Low power losses, high efficiency
- Very low forward voltage drop
- 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 ($T_A = 25\text{ °C}$ unless otherwise noted)

| PARAMETER | SYMBOL | SL22 | SL23 | UNIT |
|--|-------------|-------------|------|------------|
| Device marking code | | SL2 | SL3 | |
| Maximum repetitive peak reverse voltage | V_{RRM} | 20 | 30 | V |
| Maximum RMS voltage | V_{RMS} | 14 | 21 | V |
| Maximum DC blocking voltage | V_{DC} | 20 | 30 | V |
| Maximum average forward rectified current at T_L (fig.1) | $I_{F(AV)}$ | 2.0 | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 100 | | A |
| Voltage rate of change (rated V_R) | dV/dt | 10 000 | | V/ μ s |
| Operating junction temperature range | T_J | -55 to +125 | | °C |
| Storage temperature range | T_{STG} | -55 to +150 | | °C |



| ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | | |
|---|----------------------|-----------------------------------|--------|-------|------|------|
| PARAMETER | TEST CONDITIONS | | SYMBOL | SL22 | SL23 | UNIT |
| Maximum instantaneous forward voltage at ⁽¹⁾ | $I_F = 1.0\text{ A}$ | $T_A = 125\text{ }^\circ\text{C}$ | V_F | 0.280 | | V |
| | | $T_A = 25\text{ }^\circ\text{C}$ | | 0.395 | | |
| | $I_F = 2.0\text{ A}$ | $T_A = 125\text{ }^\circ\text{C}$ | | 0.320 | | |
| | | $T_A = 25\text{ }^\circ\text{C}$ | | 0.440 | | |
| Maximum DC reverse current at rated DC blocking voltage ⁽¹⁾ | | | I_R | 0.4 | | mA |
| | | | | 10 | | |

Note

⁽¹⁾ Pulse test: 300 μs pulse width, 1 % duty cycle

| THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | |
|--|-----------------|------|------|--------------------|
| PARAMETER | SYMBOL | SL22 | SL23 | UNIT |
| Maximum thermal resistance ⁽¹⁾ | $R_{\theta JA}$ | 75 | | $^\circ\text{C/W}$ |
| | $R_{\theta JL}$ | 17 | | |

Note

⁽¹⁾ PCB mounted 0.55" x 0.55" (14 mm x 14 mm) copper pad areas, $T_L = 90\text{ }^\circ\text{C}$

| ORDERING INFORMATION (Example) | | | | |
|--------------------------------|-----------------|------------------------|---------------|------------------------------------|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| SL23-E3/52T | 0.096 | 52T | 750 | 7" diameter plastic tape and reel |
| SL23-E3/5BT | 0.096 | 5BT | 3200 | 13" diameter plastic tape and reel |
| SL23HE3_A/H ⁽¹⁾ | 0.096 | H | 750 | 7" diameter plastic tape and reel |
| SL23HE3_A/I ⁽¹⁾ | 0.096 | I | 3200 | 13" diameter plastic tape and reel |
| SL23-M3/52T | 0.096 | 52T | 750 | 7" diameter plastic tape and reel |
| SL23-M3/5BT | 0.096 | 5BT | 3200 | 13" diameter plastic tape and reel |
| SL23HM3_A/H ⁽¹⁾ | 0.096 | H | 750 | 7" diameter plastic tape and reel |
| SL23HM3_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)

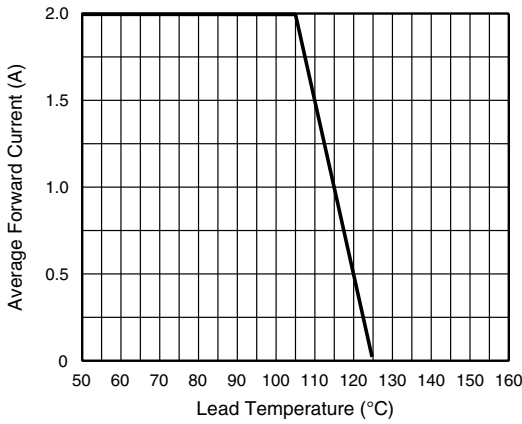


Fig. 1 - Forward Derating Curve

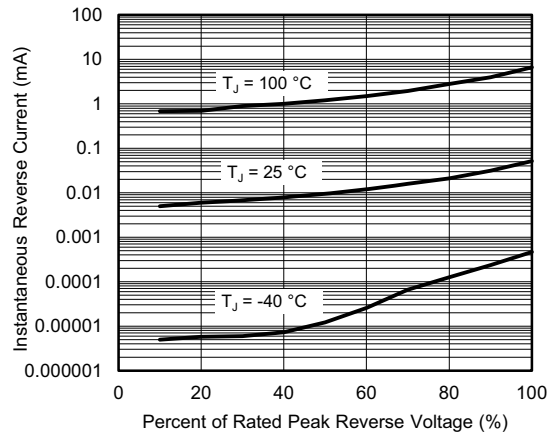


Fig. 4 - Typical Reverse Current Characteristics

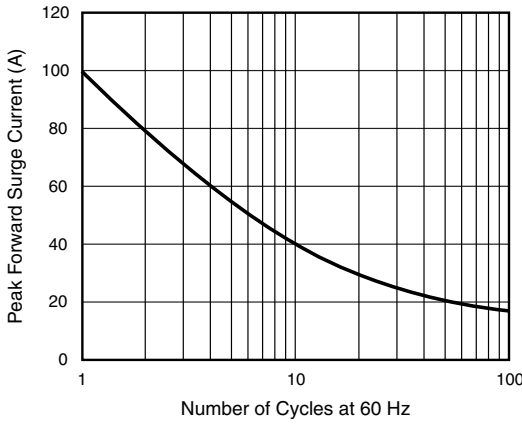


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

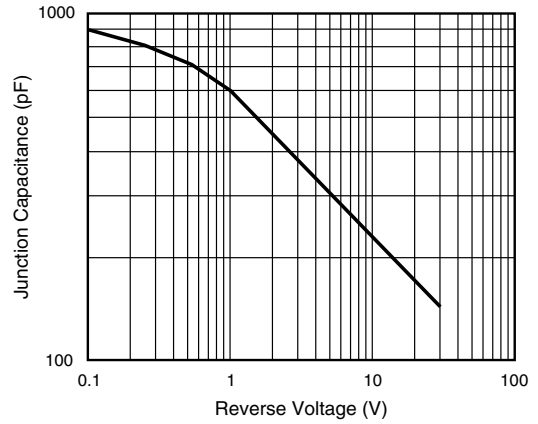


Fig. 5 - Typical Junction Capacitance

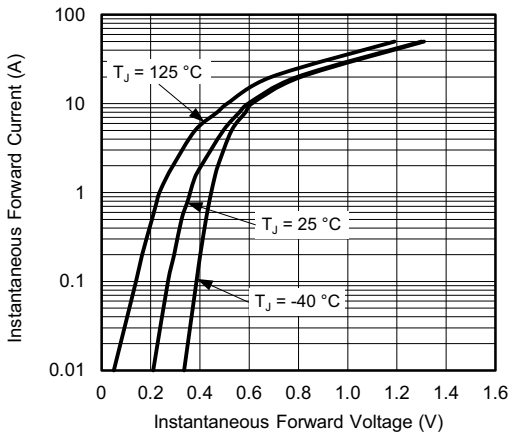
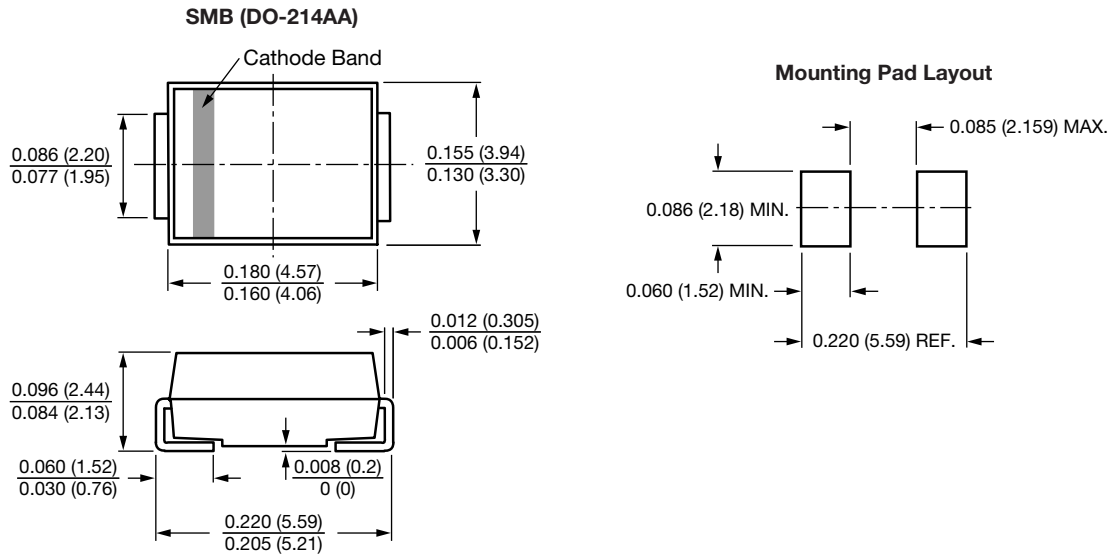


Fig. 3 - Typical Instantaneous Forward Characteristics



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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