

Surface-Mount Schottky Barrier Rectifier


SMC (DO-214AB)

Cathode Anode

LINKS TO ADDITIONAL RESOURCES


[3D Models](#)

| PRIMARY CHARACTERISTICS | |
|-------------------------|------------------|
| $I_{F(AV)}$ | 4.0 A |
| V_{RRM} | 20 V, 30 V, 40 V |
| I_{FSM} | 150 A |
| V_F | 0.31 V, 0.35 V |
| T_J max. | 125 °C |
| Package | SMC (DO-214AB) |
| 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


RoHS
 COMPLIANT
 HALOGEN
FREE
 Available

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: SMC (DO-214AB)

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 | SL42 | SL43 | SL44 | UNIT |
| Device marking code | | SL2 | SL3 | SL4 | |
| Maximum repetitive peak reverse voltage | V_{RRM} | 20 | 30 | 40 | V |
| Maximum RMS voltage | V_{RMS} | 14 | 21 | 28 | V |
| Maximum DC blocking voltage | V_{DC} | 20 | 30 | 40 | V |
| Maximum average forward rectified current ⁽¹⁾ at T_L (fig. 1) | $I_{F(AV)}$ | 4.0 | | | A |
| | | 8.0 | | | |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 150 | | | A |
| Operating junction temperature range | T_J | -55 to +125 | | | °C |
| Storage temperature range | T_{STG} | -55 to +150 | | | °C |

Note

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



| ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | | | |
|---|----------------------|-----------------------------------|--------|------|------|------|------|
| PARAMETER | TEST CONDITIONS | | SYMBOL | SL42 | SL43 | SL44 | UNIT |
| Maximum instantaneous forward voltage at ⁽¹⁾ | $I_F = 4.0\text{ A}$ | $T_A = 125\text{ }^\circ\text{C}$ | V_F | 0.31 | | 0.35 | V |
| | | $T_A = 25\text{ }^\circ\text{C}$ | | 0.42 | | 0.44 | |
| | $I_F = 8.0\text{ A}$ | $T_A = 125\text{ }^\circ\text{C}$ | | 0.37 | | 0.41 | |
| | | $T_A = 25\text{ }^\circ\text{C}$ | | 0.47 | | 0.50 | |
| Maximum DC reverse current at rated DC blocking voltage ⁽¹⁾ | | | I_R | 0.5 | | | mA |
| | | | | 35 | | | |

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 | SL42 | SL43 | SL44 | UNIT |
| Typical thermal resistance ⁽¹⁾ | $R_{\theta JA}$ | 50 | | | $^\circ\text{C/W}$ |
| | $R_{\theta JL}$ | 14 | | | |

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 |
| SL44-E3/57T | 0.235 | 57T | 850 | 7" diameter plastic tape and reel |
| SL44-E3/9AT | 0.235 | 9AT | 3500 | 13" diameter plastic tape and reel |
| SL44HE3_B/H ⁽¹⁾ | 0.235 | H | 850 | 7" diameter plastic tape and reel |
| SL44HE3_B/I ⁽¹⁾ | 0.235 | I | 3500 | 13" diameter plastic tape and reel |
| SL44-M3/57T | 0.235 | 57T | 850 | 7" diameter plastic tape and reel |
| SL44-M3/9AT | 0.235 | 9AT | 3500 | 13" diameter plastic tape and reel |
| SL44HM3_A/H ⁽¹⁾ | 0.235 | H | 850 | 7" diameter plastic tape and reel |
| SL44HM3_A/I ⁽¹⁾ | 0.235 | I | 3500 | 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)

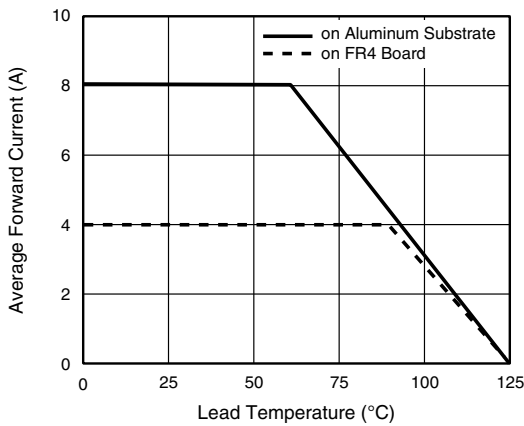


Fig. 1 - Forward Current Derating Curve

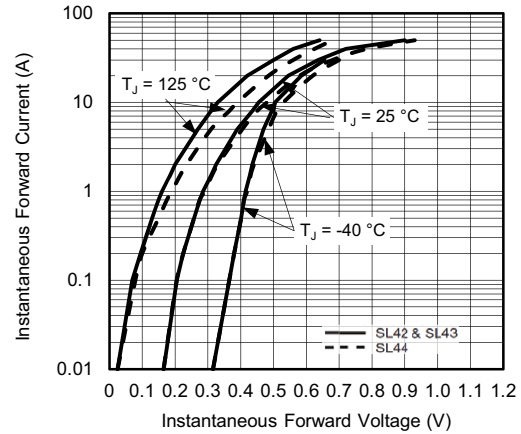


Fig. 3 - Typical Instantaneous Forward Characteristics

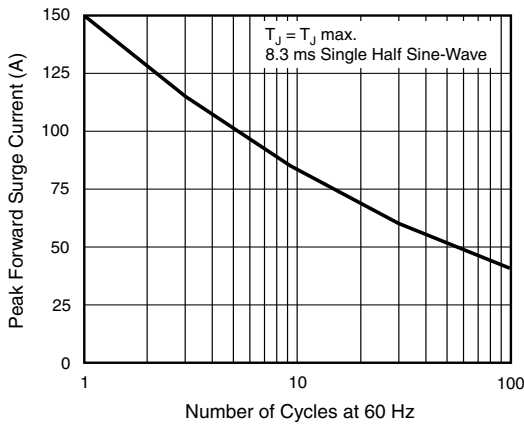


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

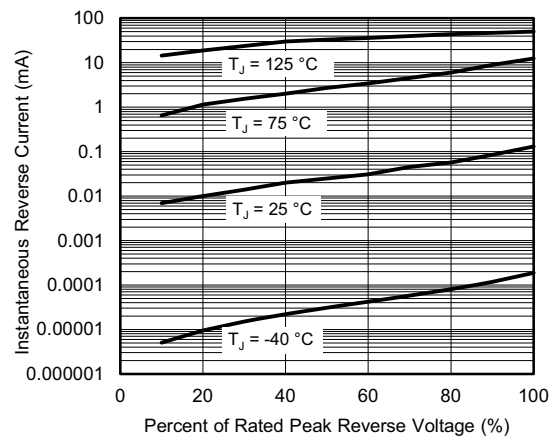


Fig. 4 - Typical Reverse Characteristics

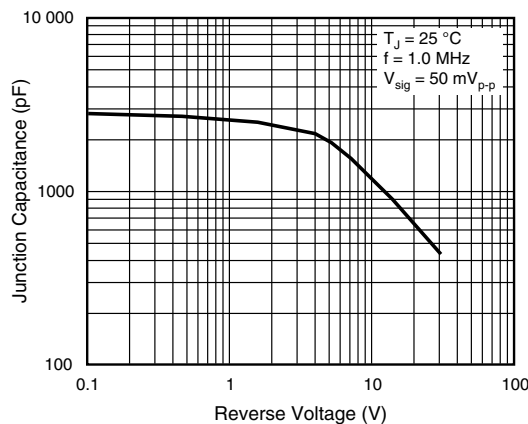
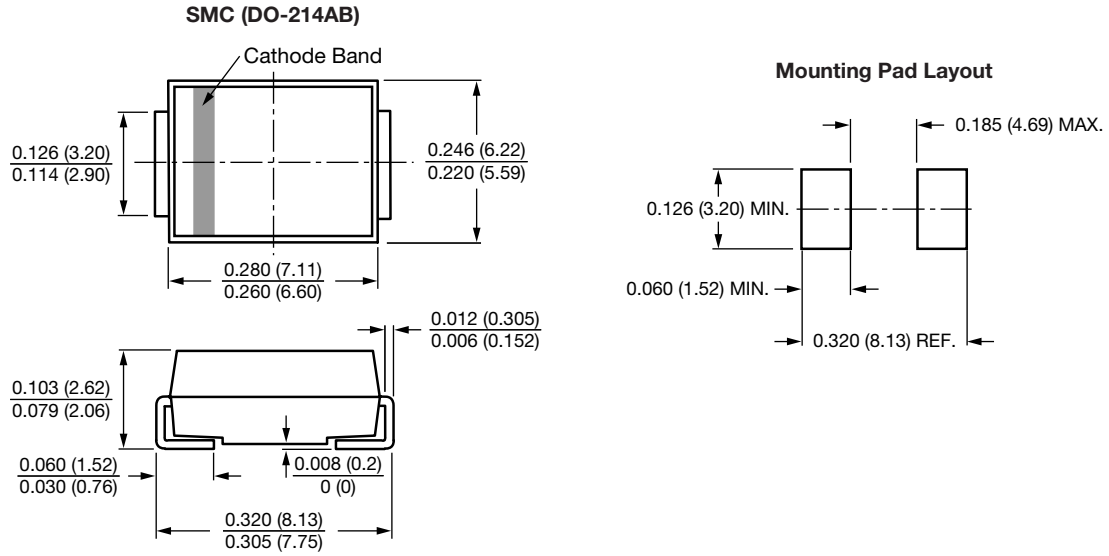


Fig. 5 - Typical Junction Capacitance



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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