

## 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](http://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 <sup>(1)</sup> 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

<sup>(1)</sup> 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 <sup>(1)</sup>                               | $I_F = 4.0\text{ A}$ | $T_A = 125\text{ }^\circ\text{C}$ | $V_F$  | 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 <sup>(1)</sup>                |                      |                                   | $I_R$  | 0.5                               |      |      | mA   |
|   |                      |                                   |        | $T_A = 100\text{ }^\circ\text{C}$ |      |      |      |

**Note**

<sup>(1)</sup> Pulse test: 300  $\mu\text{s}$  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 <sup>(1)</sup>  | $R_{\theta JA}$ | 50   |      |      | $^\circ\text{C/W}$ |
|  | $R_{\theta JL}$ | 14   |      |      |                    |

**Note**

<sup>(1)</sup> 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 <sup>(1)</sup>     | 0.235           | H                      | 850           | 7" diameter plastic tape and reel  |
| SL44HE3_B/I <sup>(1)</sup>     | 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 <sup>(1)</sup>     | 0.235           | H                      | 850           | 7" diameter plastic tape and reel  |
| SL44HM3_A/I <sup>(1)</sup>     | 0.235           | I                      | 3500          | 13" diameter plastic tape and reel |

**Note**

<sup>(1)</sup> AEC-Q101 qualified

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

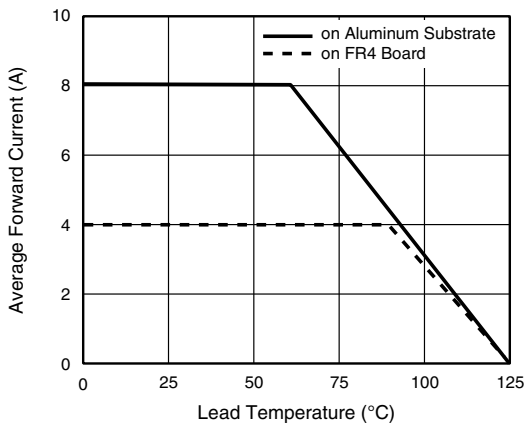


Fig. 1 - Forward Current Derating Curve

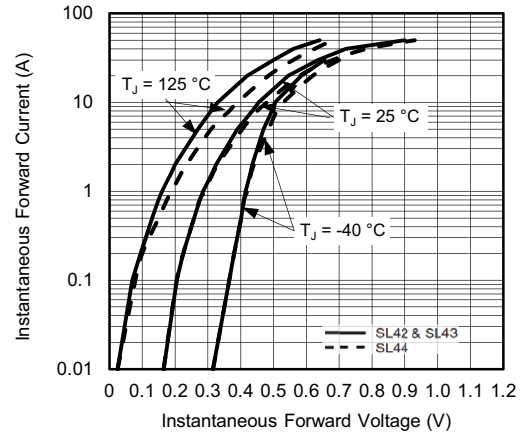


Fig. 3 - Typical Instantaneous Forward Characteristics

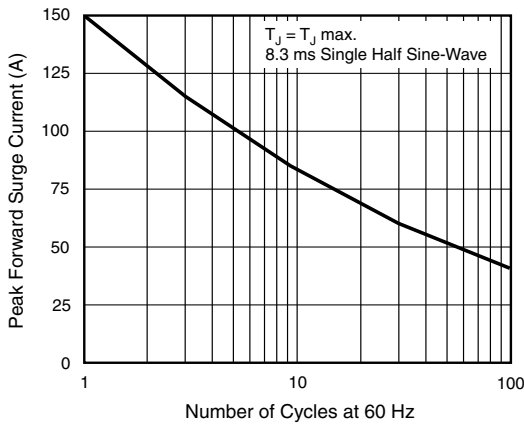


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

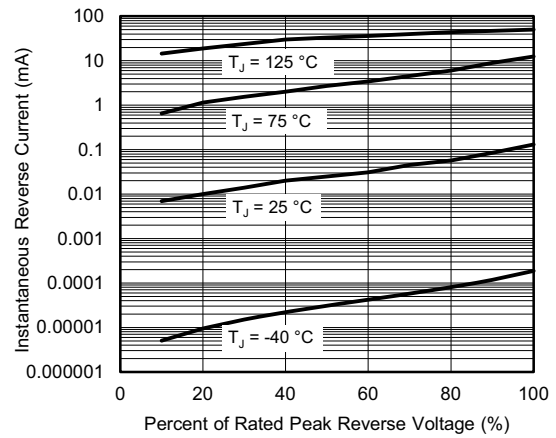


Fig. 4 - Typical Reverse Characteristics

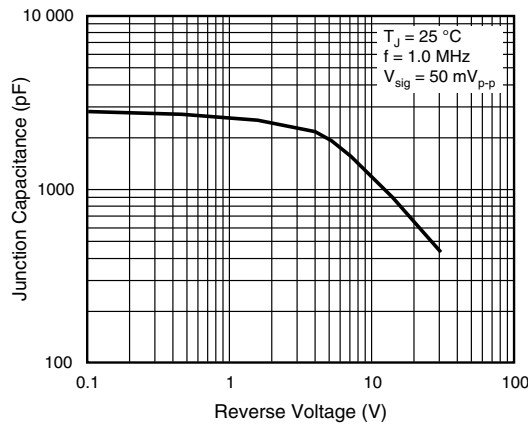
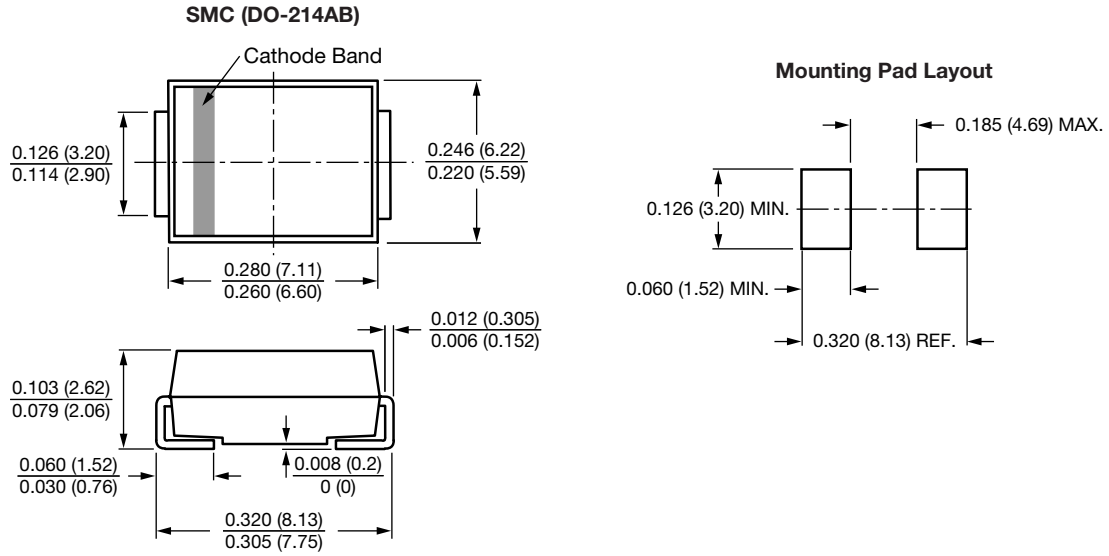


Fig. 5 - Typical Junction Capacitance



**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)





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