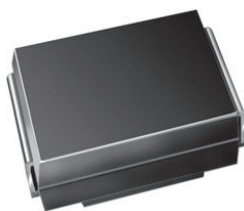


# Surface-Mount Schottky Barrier Rectifier


**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](http://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/ $\mu$ 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 <sup>(1)</sup>                | I <sub>F</sub> = 1.0 A | T <sub>A</sub> = 125 °C | V <sub>F</sub> | 0.280 |      | V    |
|                                                                        |                        | T <sub>A</sub> = 25 °C  |                | 0.395 |      |      |
|                                                                        | I <sub>F</sub> = 2.0 A | T <sub>A</sub> = 125 °C |                | 0.320 |      |      |
|                                                                        |                        | T <sub>A</sub> = 25 °C  |                | 0.440 |      |      |
| Maximum DC reverse current at rated DC blocking voltage <sup>(1)</sup> |                        | T <sub>A</sub> = 25 °C  | I <sub>R</sub> | 0.4   |      | mA   |
|                                                                        |                        | T <sub>A</sub> = 100 °C |                | 10    |      |      |

**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           | SL22 | SL23 | UNIT |
|-------------------------------------------|------------------|------|------|------|
| Maximum thermal resistance <sup>(1)</sup> | R <sub>θJA</sub> | 75   |      | °C/W |
|                                           | R <sub>θJL</sub> | 17   |      |      |

**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                      |
|----------------------------|-----------------|------------------------|---------------|------------------------------------|
| 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 <sup>(1)</sup> | 0.096           | H                      | 750           | 7" diameter plastic tape and reel  |
| SL23HE3_A/I <sup>(1)</sup> | 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 <sup>(1)</sup> | 0.096           | H                      | 750           | 7" diameter plastic tape and reel  |
| SL23HM3_A/I <sup>(1)</sup> | 0.096           | I                      | 3200          | 13" diameter plastic tape and reel |

**Note**

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

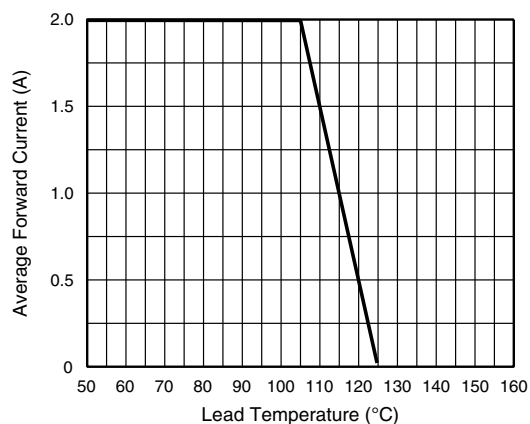
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)


Fig. 1 - Forward Derating Curve

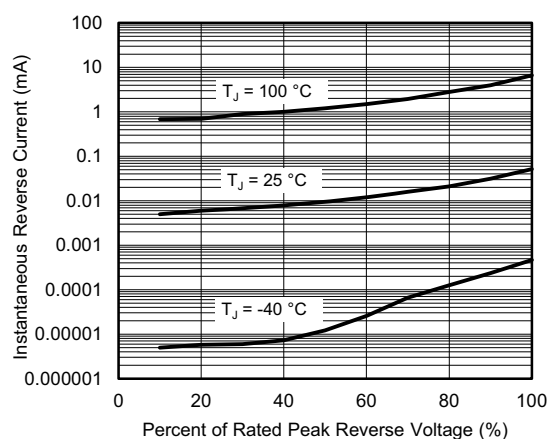


Fig. 4 - Typical Reverse Current Characteristics

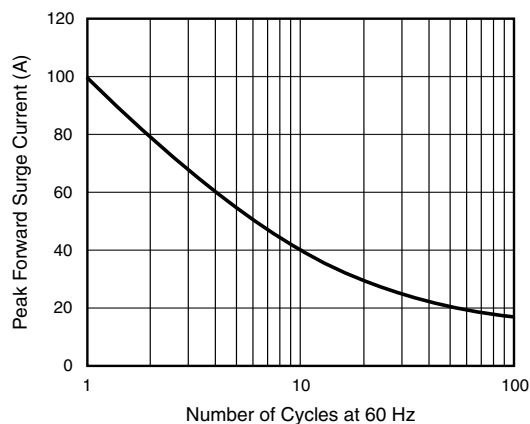


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

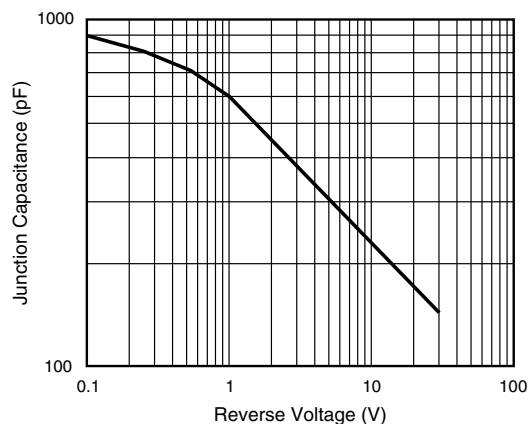


Fig. 5 - Typical Junction Capacitance

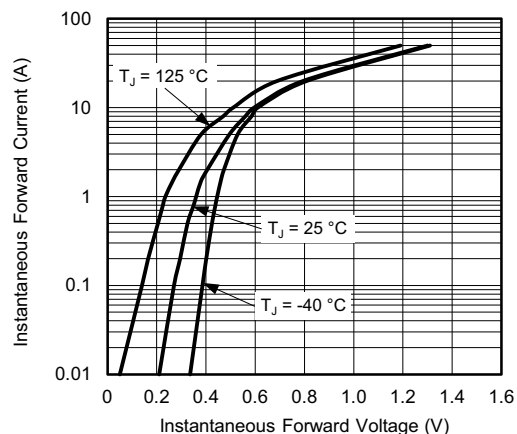
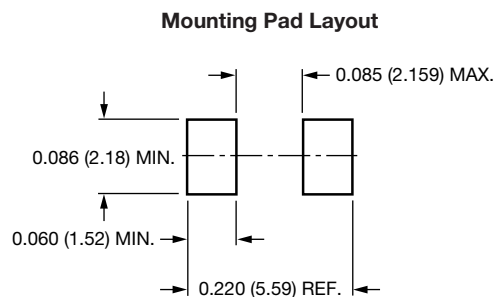
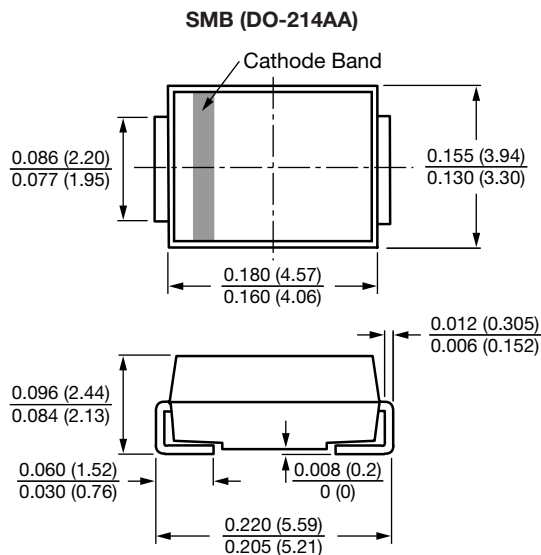


Fig. 3 - Typical Instantaneous Forward Characteristics



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





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