# High Current Density Surface-Mount Schottky Rectifier

**SMB (DO-214AA)**

Cathode ○—▶|—○ Anode

## FEATURES

- Guardring for overvoltage protection
- Low profile package
- Ideal for automated placement
- Low power loss, high efficiency
- Very low forward voltage drop
- High surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT
HALOGEN FREE Available

## LINKS TO ADDITIONAL RESOURCES

3D Models

| PRIMARY CHARACTERISTICS | |
|---|---|
| $I_{F(AV)}$ | 3.0 A |
| $V_{RRM}$ | 40 V |
| $I_{FSM}$ | 100 A |
| $V_F$ at $I_F$ = 3.0 A | 0.34 V |
| $T_J$ max. | 150 °C |
| Package | SMB (DO-214AA) |
| Circuit configurations | Single |

## TYPICAL APPLICATIONS

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

## 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

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
E3 and M3 suffix meets JESD 201 class 2 whisker test

**Polarity:** color band denotes cathode end

| MAXIMUM RATINGS ($T_A$ = 25 °C unless otherwise noted) | | | |
|---|---|---|---|
| **PARAMETER** | **SYMBOL** | **B340LB** | **UNIT** |
| Device marking code | | B34 | |
| Maximum repetitive peak reverse voltage | $V_{RRM}$ | 40 | V |
| Maximum RMS voltage | $V_{RMS}$ | 28 | |
| Maximum DC blocking voltage | $V_{DC}$ | 40 | |
| Maximum average forward rectified current at $T_L$ (fig. 1) | $I_{F(AV)}$ | 3.0 | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | $I_{FSM}$ | 100 | |
| Voltage rate of change (rated $V_R$) | dV/dt | 10 000 | V/µs |
| Operating junction and storage temperature range | $T_J$, $T_{STG}$ | -65 to +150 | °C |

| ELECTRICAL CHARACTERISTICS ($T_A$ = 25 °C unless otherwise noted) | | | | | | |
|---|---|---|---|---|---|---|
| **PARAMETER** | **SYMBOL** | **TEST CONDITIONS** | | **TYP.** | **MAX.** | **UNIT** |
| Maximum instantaneous forward voltage | $V_F$ (1) | 3.0 A | $T_J$ = 25 °C | 0.43 | 0.45 | V |
| | | | $T_J$ = 125 °C | 0.34 | 0.38 | |
| Maximum reverse current at | $I_R$ (2) | Rated $V_R$ | $T_J$ = 25 °C | - | 0.4 | mA |
| | | | $T_J$ = 125 °C | 26 | 40 | |

**Notes**
(1) Pulse test: 300 µs pulse width, 1 % duty cycle
(2) Pulse test: Pulse width ≤ 40 ms

| THERMAL CHARACTERISTICS ($T_A$ = 25 °C unless otherwise noted) | | | |
|---|---|---|---|
| **PARAMETER** | **SYMBOL** | **B340LB** | **UNIT** |
| Typical thermal resistance | $R_{\theta JA}$ | 70 | °C/W |
| | $R_{\theta JL}$ | 25 | |

| ORDERING INFORMATION (Example) | | | | | |
|---|---|---|---|---|---|
| **PACKAGE** | **PREFERRED P/N** | **UNIT WEIGHT (g)** | **PACKAGE CODE** | **BASE QUANTITY** | **DELIVERY MODE** |
| DO-214AA (SMB) | B340LB-E3/52T | 0.096 | 52T | 750 | 7" diameter tape and reel |
| DO-214AA (SMB) | B340LB-E3/5BT | 0.096 | 5BT | 3200 | 13" diameter tape and reel |

## RATINGS AND CHARACTERISTICS CURVES ($T_A$ = 25 °C unless otherwise noted)

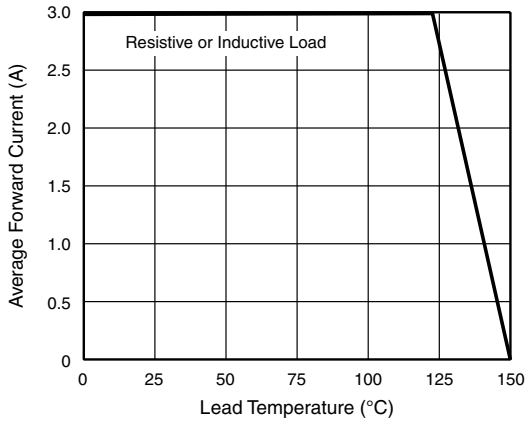



Fig. 1 - Forward Current Derating Curve

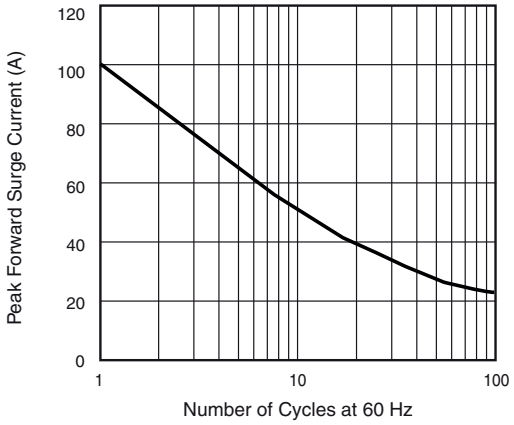



Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current

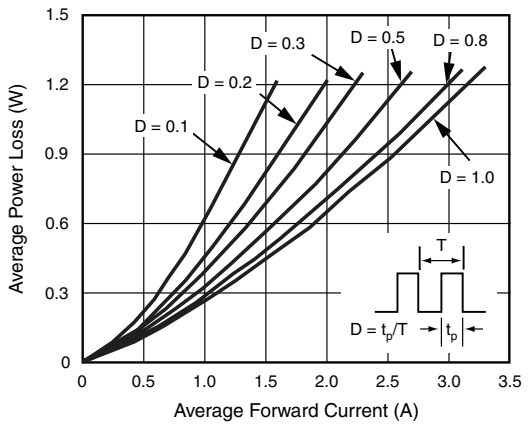



Fig. 2 - Forward Power Loss Characteristics

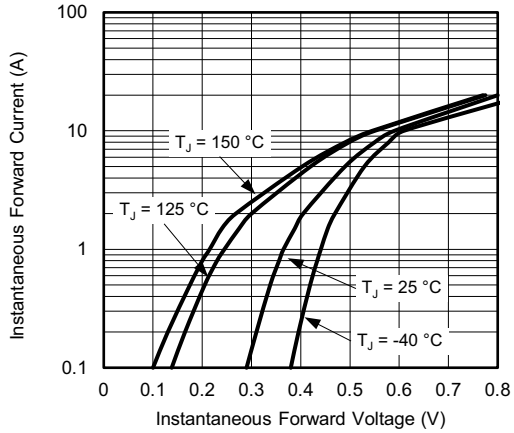



Fig. 4 - Typical Instantaneous Forward Characteristics

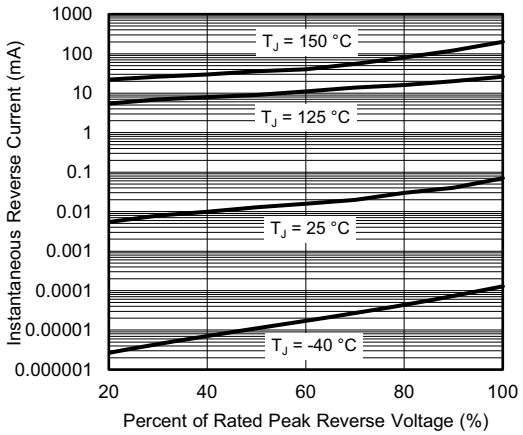



Fig. 5 - Typical Reverse Characteristics

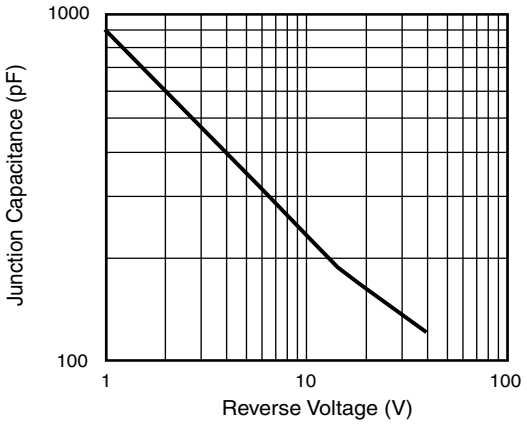
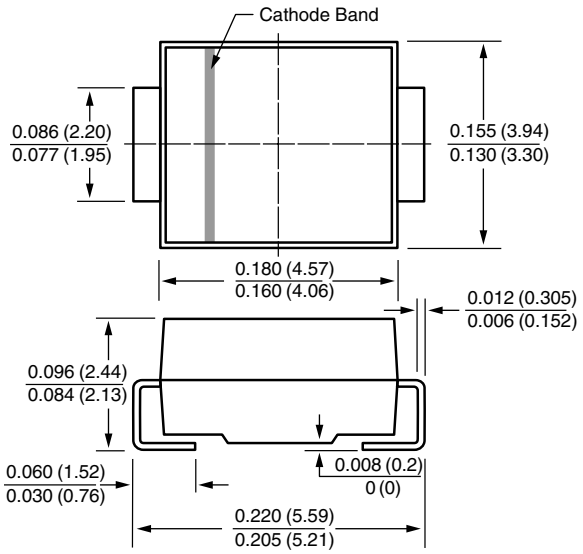


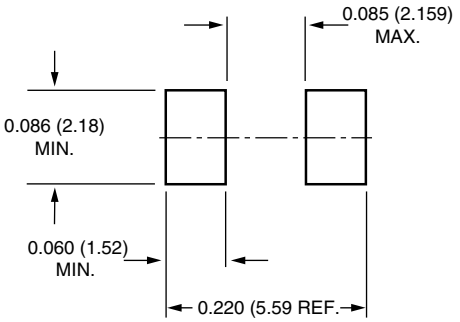

Fig. 6 - Typical Junction Capacitance

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

### SMB (DO-214AA)




### Mounting Pad Layout



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