# THE DATASHEET OF

# SS34HE3_B/I

## Surface-Mount Schottky Barrier Rectifier

SMC (DO-214AB)

Cathode ○—|◀—○ Anode

### LINKS TO ADDITIONAL RESOURCES

Design Tools | Related Documents | 3D Models | Models | Application Notes | Marking

### FEATURES

- Low profile package
- Ideal for automated placement
- Guardring for overvoltage protection
- Low power losses, high efficiency
- 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

AUTOMOTIVE GRADE Available

RoHS COMPLIANT

HALOGEN FREE Available

### TYPICAL APPLICATIONS

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

| PRIMARY CHARACTERISTICS | |
|---|---|
| $I_{F(AV)}$ | 3.0 A |
| $V_{RRM}$ | 20 V, 30 V, 40 V, 50 V, 60 V |
| $I_{FSM}$ | 100 A |
| EAS | 20 mJ |
| $V_F$ | 0.5 V, 0.75 V |
| $T_J$ max. | 150 °C |
| Package | SMC (DO-214AB) |
| Circuit configuration | Single |

### 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 °C unless otherwise noted)

| PARAMETER | SYMBOL | SS32 | SS33 | SS34 | SS35 | SS36 | UNIT |
|---|---|---|---|---|---|---|---|
| Device marking code | | S2 | S3 | S4 | S5 | S6 | |
| Maximum repetitive peak reverse voltage | $V_{RRM}$ | 20 | 30 | 40 | 50 | 60 | V |
| Maximum RMS voltage | $V_{RMS}$ | 14 | 21 | 28 | 35 | 42 | V |
| Maximum DC blocking voltage | $V_{DC}$ | 20 | 30 | 40 | 50 | 60 | V |
| 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 | | | | | A |
| Non-repetitive avalanche energy at $T_A$ = 25 °C, $I_{AS}$ = 2.0 A, L = 10 mH | $E_{AS}$ | 20 | | | | | mJ |
| Voltage rate of change (rated $V_R$) | dV/dt | 10 000 | | | | | V/µs |
| Operating junction temperature range | $T_J$ | -55 to +150 | | | | | °C |
| Storage temperature range | $T_{STG}$ | -55 to +150 | | | | | °C |


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| ELECTRICAL CHARACTERISTICS ($T_A$ = 25 °C unless otherwise noted) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| PARAMETER | TEST CONDITIONS | | SYMBOL | SS32 | SS33 | SS34 | SS35 | SS36 | UNIT |
| Maximum instantaneous forward voltage (1) | 3.0 A | | $V_F$ | 0.5 | | | 0.75 | | V |
| Maximum DC reverse current at rated DC blocking voltage (1) | | $T_A$ = 25 °C | $I_R$ | 0.5 | | | | | mA |
| | | $T_A$ = 100 °C | | 20 | | | 10 | | |

**Note**

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

| THERMAL CHARACTERISTICS ($T_A$ = 25 °C unless otherwise noted) | | | | | | | |
|---|---|---|---|---|---|---|---|
| PARAMETER | SYMBOL | SS32 | SS33 | SS34 | SS35 | SS36 | UNIT |
| Typical thermal resistance (1) | $R_{\theta JA}$ | 55 | | | | | °C/W |
| | $R_{\theta JL}$ | 17 | | | | | |

**Note**

(1) PCB mounted with 0.55" x 0.55" (14 mm x 14 mm) copper pad areas

| ORDERING INFORMATION (Example) | | | | |
|---|---|---|---|---|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| SS36-E3/57T | 0.235 | 57T | 850 | 7" diameter plastic tape and reel |
| SS36-E3/9AT | 0.235 | 9AT | 3500 | 13" diameter plastic tape and reel |
| SS36HE3_B/H (1) | 0.235 | H | 850 | 7" diameter plastic tape and reel |
| SS36HE3_B/I (1) | 0.235 | I | 3500 | 13" diameter plastic tape and reel |
| SS36-M3/57T | 0.235 | 57T | 850 | 7" diameter plastic tape and reel |
| SS36-M3/9AT | 0.235 | 9AT | 3500 | 13" diameter plastic tape and reel |
| SS36HM3_A/H (1) | 0.235 | H | 850 | 7" diameter plastic tape and reel |
| SS36HM3_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 °C unless otherwise noted)

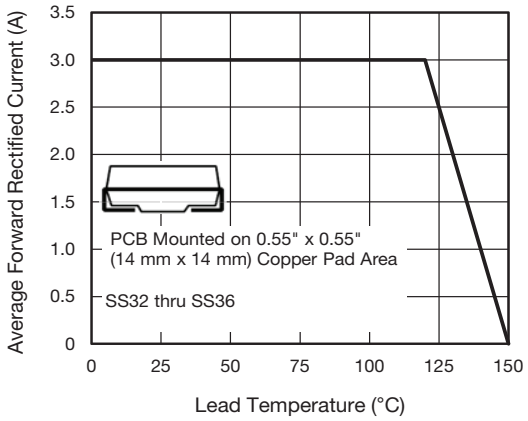


Fig. 1 - Forward Current Derating Curve

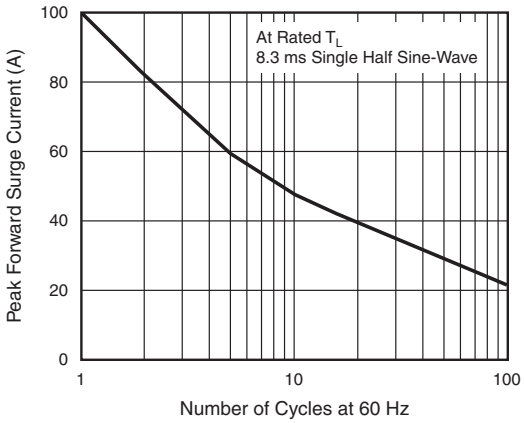


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current


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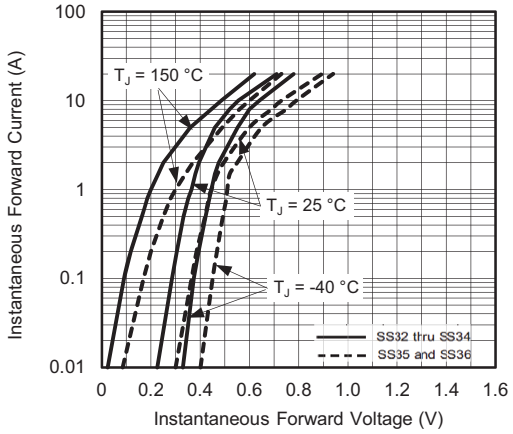



Fig. 3 - Typical Instantaneous Forward Characteristics

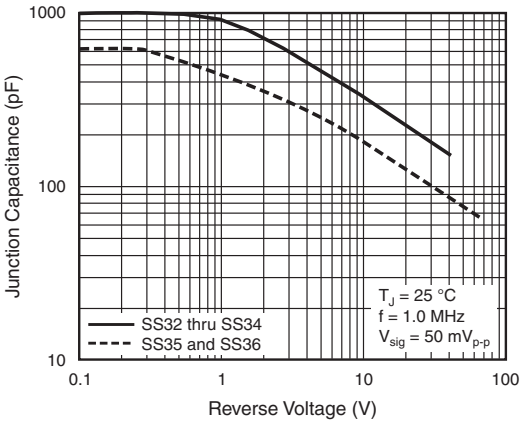



Fig. 5 - Typical Junction Capacitance

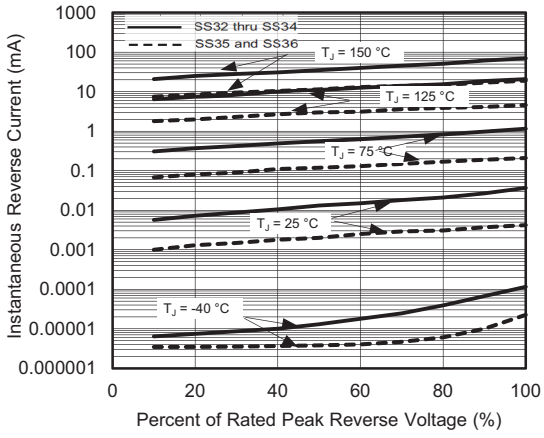



Fig. 4 - Typical Reverse Current Characteristics

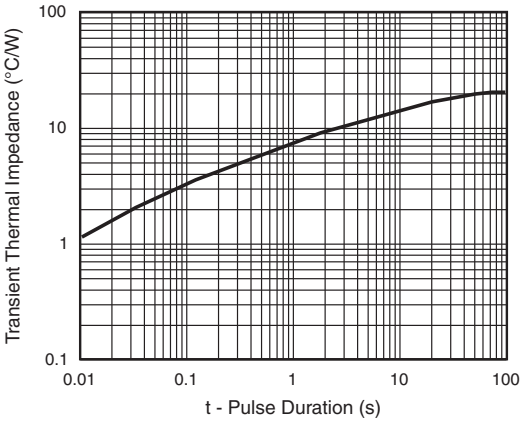
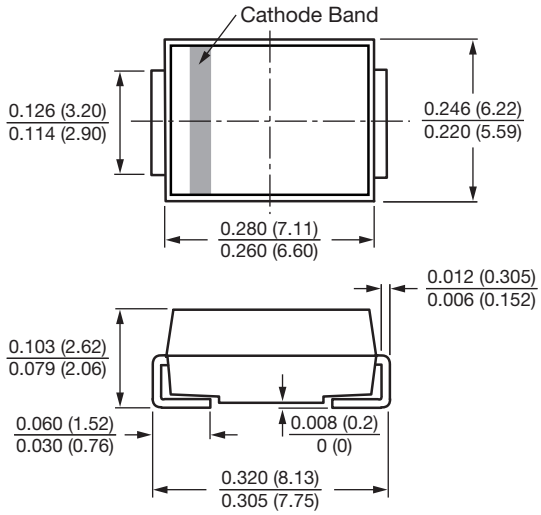


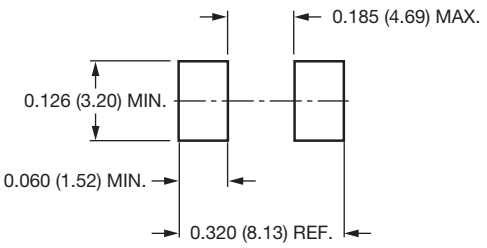

Fig. 6 - Typical Transient Thermal Impedance

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

**SMC (DO-214AB)**




**Mounting Pad Layout**



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