



**THE DATASHEET OF  
SS32-M3/9AT**



## Surface-Mount Schottky Barrier Rectifier


**SMC (DO-214AB)**

Cathode Anode

### LINKS TO ADDITIONAL RESOURCES



Design Tools



Related Documents



3D Models



SPICE Models



Application Notes



Marking

| 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                       |

### 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](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      | 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 $T_A = 25\text{ °C}$ , $I_{AS} = 2.0\text{ A}$ , $L = 10\text{ mH}$ | $E_{AS}$    | 20          |      |      |      |      |      | mJ         |
| Voltage rate of change (rated $V_R$ )  | $dV/dt$     | 10 000      |      |      |      |      |      | V/ $\mu$ s |
| Operating junction temperature range   | $T_J$       | -55 to +150 |      |      |      |      |      | °C         |
| Storage temperature range  | $T_{STG}$   | -55 to +150 |      |      |      |      |      | °C         |



| ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                         |                |      |      |      |      |      |      |
|--|-------------------------|----------------|------|------|------|------|------|------|
| PARAMETER  | TEST CONDITIONS         | SYMBOL         | SS32 | SS33 | SS34 | SS35 | SS36 | UNIT |
| Maximum instantaneous forward voltage (1)                                  | 3.0 A                   | V <sub>F</sub> | 0.5  |      |      | 0.75 |      | V    |
| Maximum DC reverse current at rated DC blocking voltage (1)                | T <sub>A</sub> = 25 °C  | I <sub>R</sub> | 0.5  |      |      |      |      | mA   |
|  | T <sub>A</sub> = 100 °C |                | 20   |      | 10   |      |      |      |

**Note**

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

| THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                  |      |      |      |      |      |      |  |
|---|------------------|------|------|------|------|------|------|--|
| PARAMETER   | SYMBOL           | SS32 | SS33 | SS34 | SS35 | SS36 | UNIT |  |
| Typical thermal resistance (1)  | R <sub>θJA</sub> | 55   |      |      |      |      | °C/W |  |
|   | R <sub>θJL</sub> | 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<sub>A</sub> = 25 °C unless otherwise noted)**



Fig. 1 - Forward Current Derating Curve



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

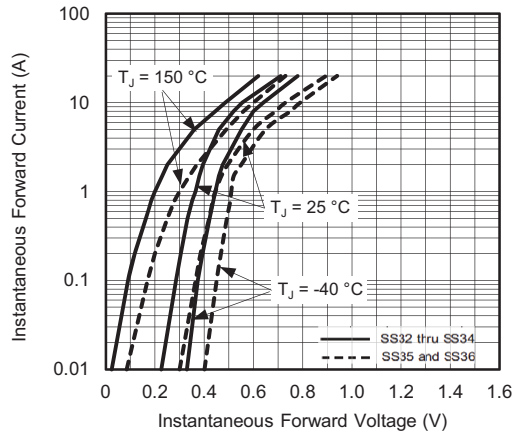


Fig. 3 - Typical Instantaneous Forward Characteristics



Fig. 5 - Typical Junction Capacitance

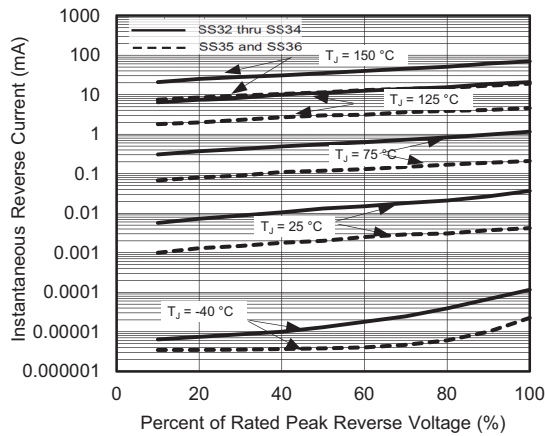
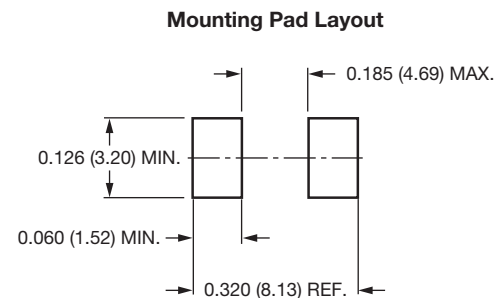
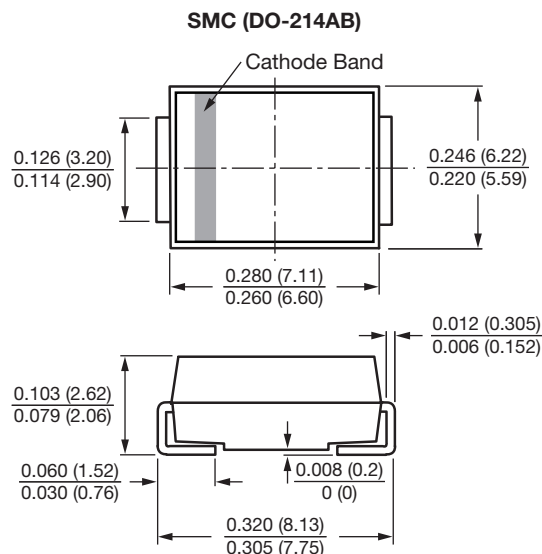


Fig. 4 - Typical Reverse Current Characteristics



Fig. 6 - Typical Transient Thermal Impedance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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