

Surface-Mount TMBS[®] (Trench MOS Barrier Schottky) Rectifier


SMA (DO-214AC)

Cathode Anode

FEATURES

- Low profile package
- Ideal for automated placement
- Trench MOS Schottky technology
- Low power losses, high efficiency
- Low forward voltage drop
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Not recommended for PCB bottom side wave mounting
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
 COMPLIANT
 HALOGEN
FREE
LINKS TO ADDITIONAL RESOURCES


3D Models

TYPICAL APPLICATIONS

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

MECHANICAL DATA
Case: SMA (DO-214AC)

Molding compound meets UL 94 V-0 flammability rating Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 suffix meets JESD 201 class 2 whisker test

Polarity: color band denotes the cathode end

| PRIMARY CHARACTERISTICS | |
|-------------------------|----------------|
| $I_{F(AV)}$ | 3.0 A |
| V_{RRM} | 60 V |
| I_{FSM} | 60 A |
| V_F at $I_F = 3.0$ A | 0.48 V |
| T_J max. | 150 °C |
| Package | SMA (DO-214AC) |
| Circuit configuration | Single |

| MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted) | | | |
|---|----------------|-------------|------|
| PARAMETER | SYMBOL | VSSA36S | UNIT |
| Device marking code | | V36 | |
| Maximum repetitive peak reverse voltage | V_{RRM} | 60 | V |
| Maximum DC forward current | $I_F^{(1)}$ | 3.0 | A |
| | $I_F^{(2)}$ | 2.4 | |
| Peak forward surge current 10 ms single half sine-wave superimposed on rated load | I_{FSM} | 60 | A |
| Operating junction and storage temperature range | T_J, T_{STG} | -55 to +150 | °C |

Notes

(1) Mounted on 8 mm x 8 mm pad areas, 1 oz. FR4 PCB

(2) Free air, mounted on recommended copper pad area

| ELECTRICAL CHARACTERISTICS ($T_A = 25$ °C unless otherwise noted) | | | | | | |
|--|-----------------|----------------|-------------|------|------|------|
| PARAMETER | TEST CONDITIONS | | SYMBOL | TYP. | MAX. | UNIT |
| Instantaneous forward voltage | $I_F = 3.0$ A | $T_A = 25$ °C | $V_F^{(1)}$ | 0.53 | 0.63 | V |
| | | $T_A = 125$ °C | | 0.48 | 0.59 | |
| Reverse current | $V_R = 60$ V | $T_A = 25$ °C | $I_R^{(2)}$ | - | 900 | μA |
| | | $T_A = 125$ °C | | 4 | 15 | mA |
| Typical junction capacitance | 4.0 V, 1 MHz | | C_J | 245 | - | pF |

Notes

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

(2) Pulse test: Pulse width ≤ 40 ms



THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise specified)

| PARAMETER | SYMBOL | VSSA36S | UNIT |
|----------------------------|-----------------------|---------|--------------------|
| Typical thermal resistance | $R_{\theta JA}^{(1)}$ | 120 | $^\circ\text{C/W}$ |
| | $R_{\theta JM}^{(2)}$ | 20 | |

Notes

- (1) Free air, mounted on recommended PCB, 1 oz. pad area; thermal resistance $R_{\theta JA}$ - junction to ambient
- (2) Mounted on 8 mm x 8 mm pad areas, 1 oz. FR4 PCB; $R_{\theta JM}$ - junction to mount

ORDERING INFORMATION (Example)

| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
|----------------|-----------------|------------------------|---------------|------------------------------------|
| VSSA36S-M3/61T | 0.064 | 61T | 1800 | 7" diameter plastic tape and reel |
| VSSA36S-M3/5AT | 0.064 | 5AT | 7500 | 13" diameter plastic tape and reel |

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

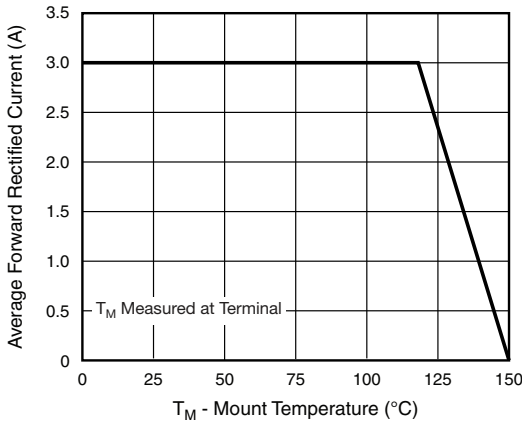


Fig. 1 - Maximum Forward Current Derating Curve

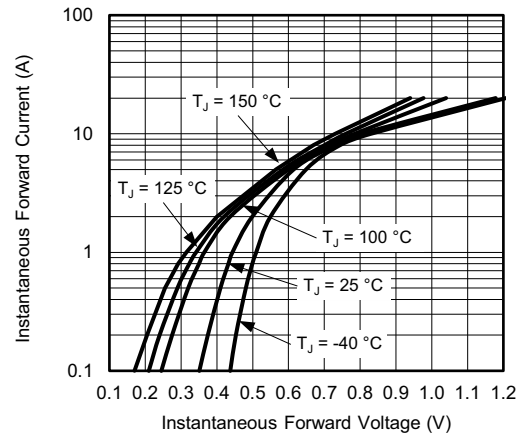


Fig. 3 - Typical Instantaneous Forward Characteristics

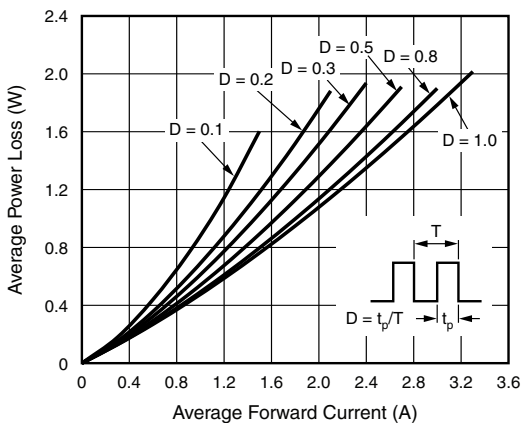


Fig. 2 - Forward Power Loss Characteristics

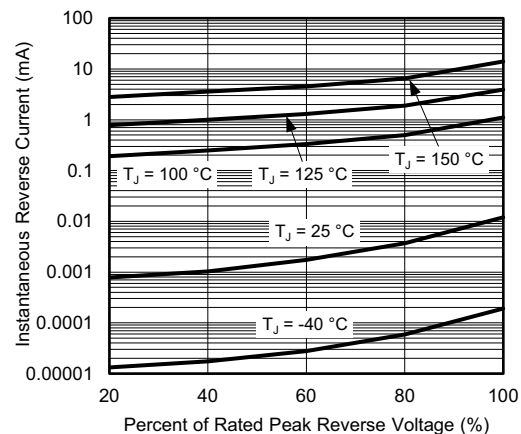


Fig. 4 - Typical Reverse Characteristics

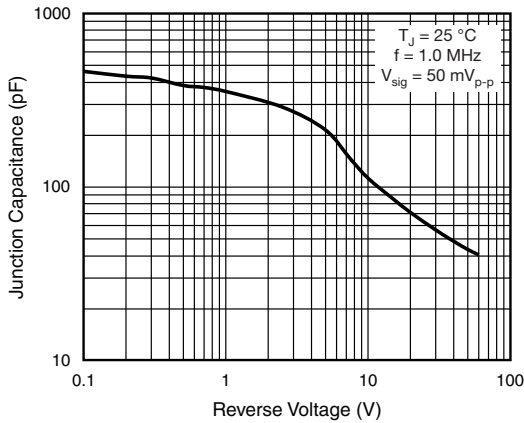


Fig. 5 - Typical Junction Capacitance

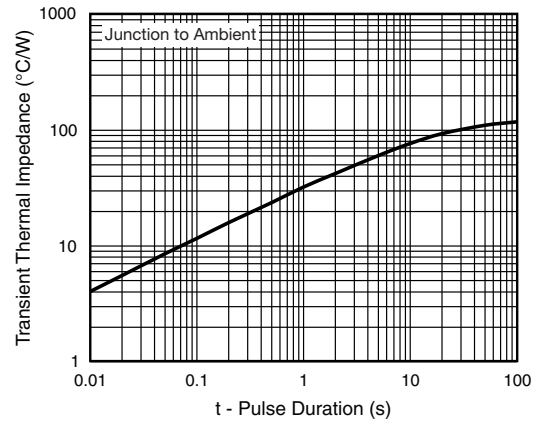
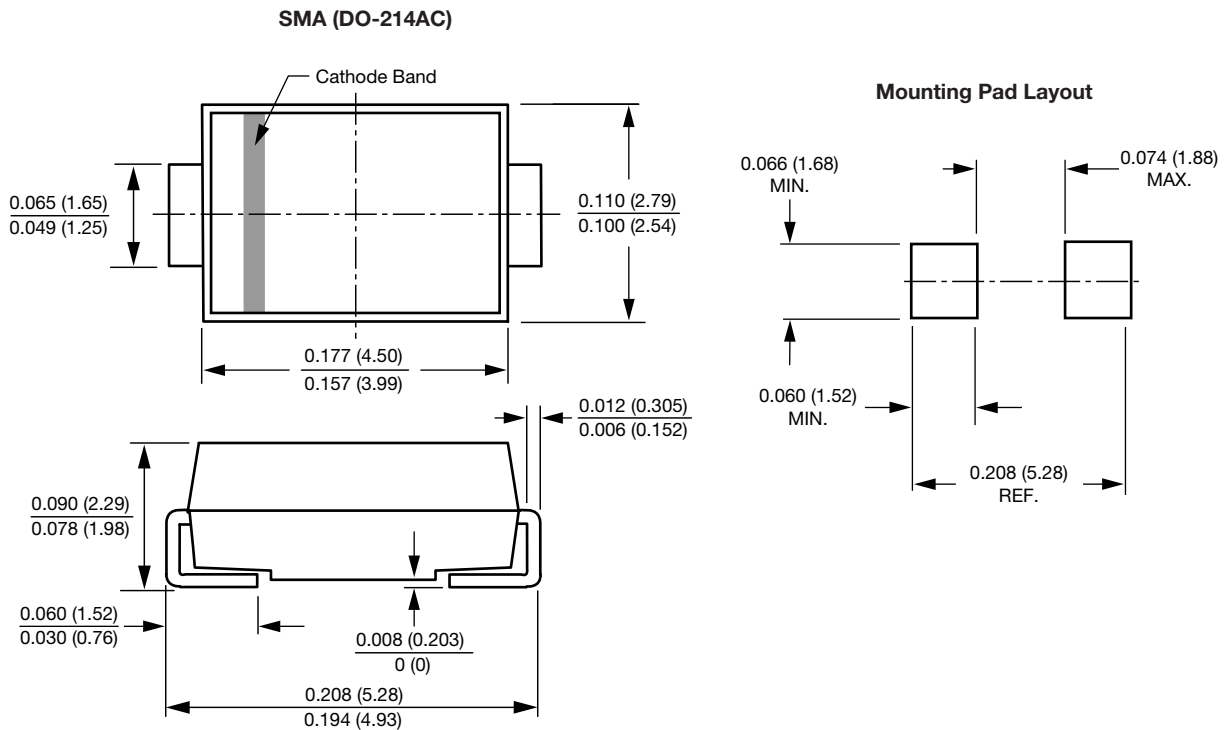


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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