HALOGEN

FREE



Vishay General Semiconductor

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



SMA (DO-214AC)

Cathode O Anode

LINKS TO ADDITIONAL RESOURCES



| 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 | | | |

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

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

| 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 | | |
| Maying DC favrand assurant | | 3.0 | ^ | | |
| Maximum DC forward current | I _F ⁽²⁾ | 2.4 | A | | |
| Peak forward surge current 10 ms single half sine-wave superimposed on rated load | | 60 | А | | |
| Operating junction and storage temperature range | | -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 2 0 A | T _A = 25 °C T _A = 125 °C | V _F ⁽¹⁾ | 0.53 | 0.63 | - v |
| | I _F = 3.0 A | T _A = 125 °C | | 0.48 | 0.59 | |
| Reverse current | V _R = 60 V | T _A = 25 °C T _A = 125 °C | I _R ⁽²⁾ | - | 900 | μA |
| neverse current | v _R = 60 v | T _A = 125 °C | | 4 | 15 | mA |
| Typical junction capacitance | 4.0 V, 1 MHz | | CJ | 245 | - | pF |

Notes

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

(2) Pulse test: Pulse width \leq 40 ms



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| THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise specified) | | | | |
|---|---------------------------------|---------|------|--|
| PARAMETER | SYMBOL | VSSA36S | UNIT | |
| Typical thermal resistance | R _{θJA} ⁽¹⁾ | 120 | °C/W | |
| | R _{0JM} (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 °C unless otherwise noted)

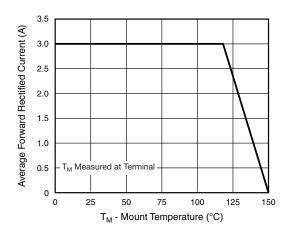


Fig. 1 - Maximum Forward Current Derating Curve

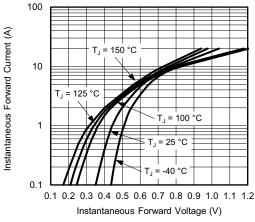


Fig. 3 - Typical Instantaneous Forward Characteristics

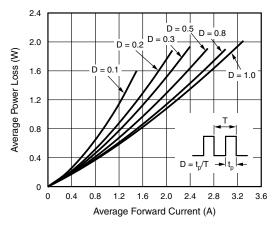


Fig. 2 - Forward Power Loss Characteristics

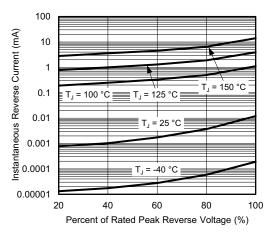


Fig. 4 - Typical Reverse Characteristics



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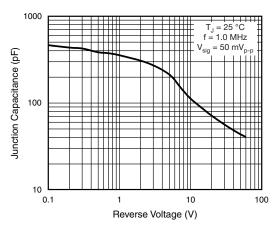


Fig. 5 - Typical Junction Capacitance

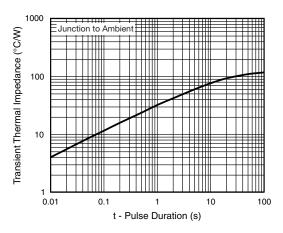
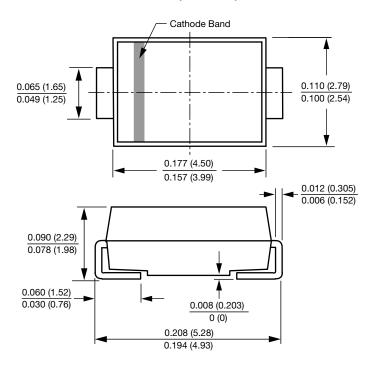


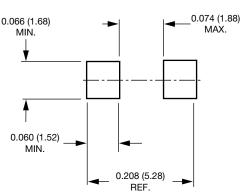
Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SMA (DO-214AC)



Mounting Pad Layout





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