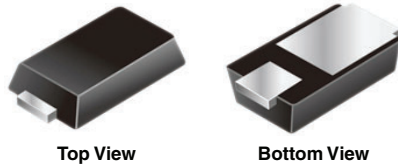


Surface Mount Schottky Barrier Rectifiers

eSMP® Series



Top View

Bottom View

MicroSMP (DO-219AD)

 Anode  Cathode

FEATURES

- Very low profile - typical height of 0.65 mm
- Ideal for automated placement
- Low forward voltage drop, low power losses
- High efficiency
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified available
 - Automotive ordering code: base P/NHM3
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

 AUTOMOTIVE
GRADE
Available

RoHS
COMPLIANT
HALOGEN
FREE

ADDITIONAL RESOURCES


[3D Models](#)

PRIMARY CHARACTERISTICS

| | |
|------------------------|---------------------|
| $I_{F(AV)}$ | 1.0 A |
| V_{RRM} | 50 V, 60 V |
| I_{FSM} | 25 A |
| V_F at $I_F = 1.0$ A | 0.52 V |
| T_J max. | 150 °C |
| Package | MicroSMP (DO-219AD) |
| Circuit configuration | Single |

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: MicroSMP (DO-219AD)

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

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

M3 suffix meets JESD 201 class 2 whisker test, 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 | MSS1P5 | MSS1P6 | UNIT |
|--|----------------|-------------|--------|------|
| Device marking code | | 15 | 16 | |
| Maximum repetitive peak reverse voltage | V_{RRM} | 50 | 60 | V |
| Maximum average forward rectified current (fig. 1) | $I_{F(AV)}$ | 1.0 | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 25 | | A |
| Operating junction and storage temperature range | T_J, T_{STG} | -55 to +150 | | °C |



| ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | | |
|--|----------------------|-----------------------------------|-------------|------|------|---------------|
| PARAMETER | TEST CONDITIONS | | SYMBOL | TYP. | MAX. | UNIT |
| Maximum instantaneous forward voltage | $I_F = 0.5\text{ A}$ | $T_J = 25\text{ }^\circ\text{C}$ | $V_F^{(1)}$ | 0.45 | - | V |
| | $I_F = 1.0\text{ A}$ | | | 0.56 | 0.68 | |
| | $I_F = 0.5\text{ A}$ | $T_J = 125\text{ }^\circ\text{C}$ | | 0.40 | - | |
| | $I_F = 1.0\text{ A}$ | | | 0.52 | 0.60 | |
| Maximum reverse current | Rated V_R | $T_J = 25\text{ }^\circ\text{C}$ | $I_R^{(2)}$ | 20 | 150 | μA |
| | | $T_J = 125\text{ }^\circ\text{C}$ | | 7.0 | 12 | mA |
| Typical junction capacitance | 4.0 V, 1 MHz | | C_J | 40 | - | pF |

Notes

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
- (2) Pulse test: Pulse width $\leq 40\text{ ms}$

| THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | |
|---|-----------------------|--------|--------|--------------------|
| PARAMETER | SYMBOL | MSS1P5 | MSS1P6 | UNIT |
| Typical thermal resistance | $R_{\theta JA}^{(1)}$ | 125 | | $^\circ\text{C/W}$ |
| | $R_{\theta JL}^{(1)}$ | 30 | | |
| | $R_{\theta JC}^{(1)}$ | 40 | | |

Note

- (1) Thermal resistance from junction to ambient and junction to lead mounted on PCB with 6.0 mm x 6.0 mm copper pad areas $R_{\theta JL}$ is measured at the terminal of cathode band. $R_{\theta JC}$ is measured at the top center of the body

| ORDERING INFORMATION (Example) | | | | |
|---------------------------------------|-----------------|------------------------|---------------|-----------------------------------|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| MSS1P6-M3/89A | 0.006 | 89A | 4500 | 7" diameter plastic tape and reel |
| MSS1P6HM3_A/H (1) | 0.006 | H | 4500 | 7" diameter plastic tape and reel |

Note

- (1) AEC-Q101 qualified

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

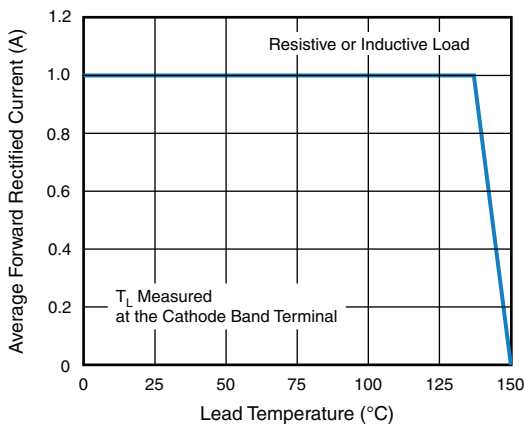


Fig. 1 - Maximum Forward Current Derating Curve

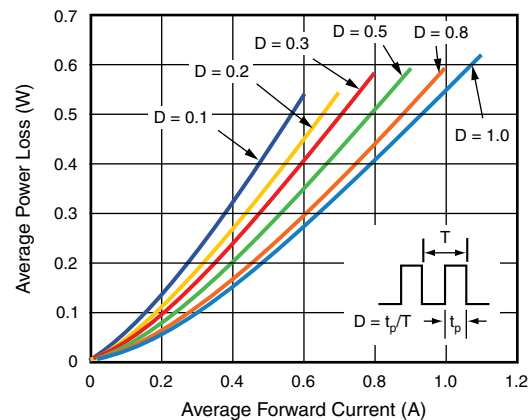


Fig. 2 - Forward Power Loss Characteristics

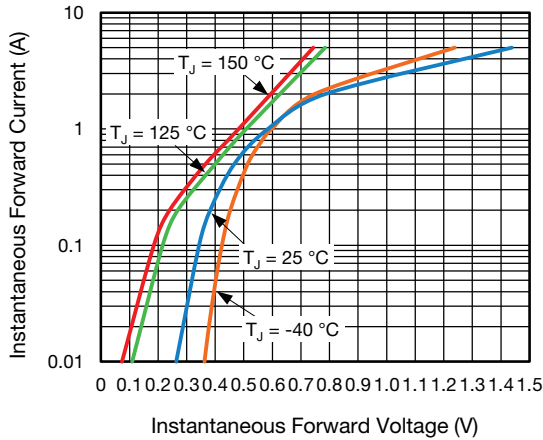


Fig. 3 - Typical Instantaneous Forward Characteristics

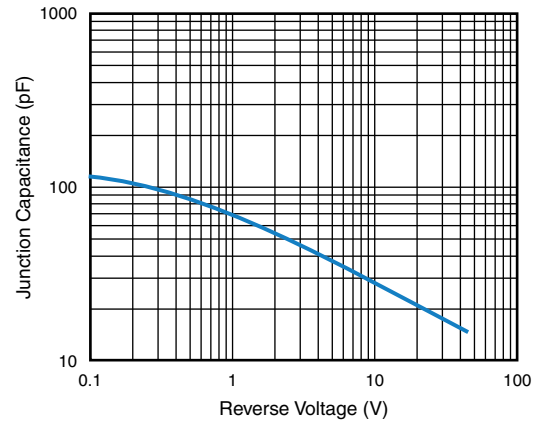


Fig. 5 - Typical Junction Capacitance

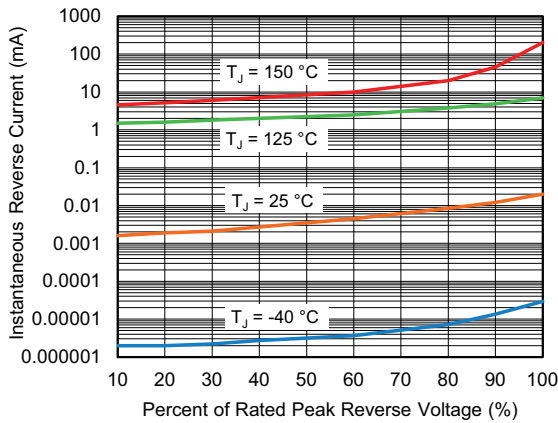


Fig. 4 - Typical Reverse Characteristics

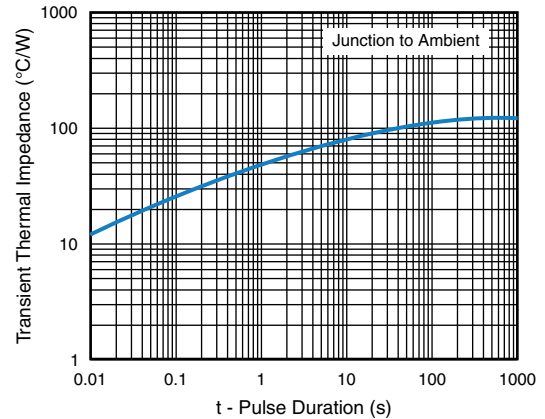
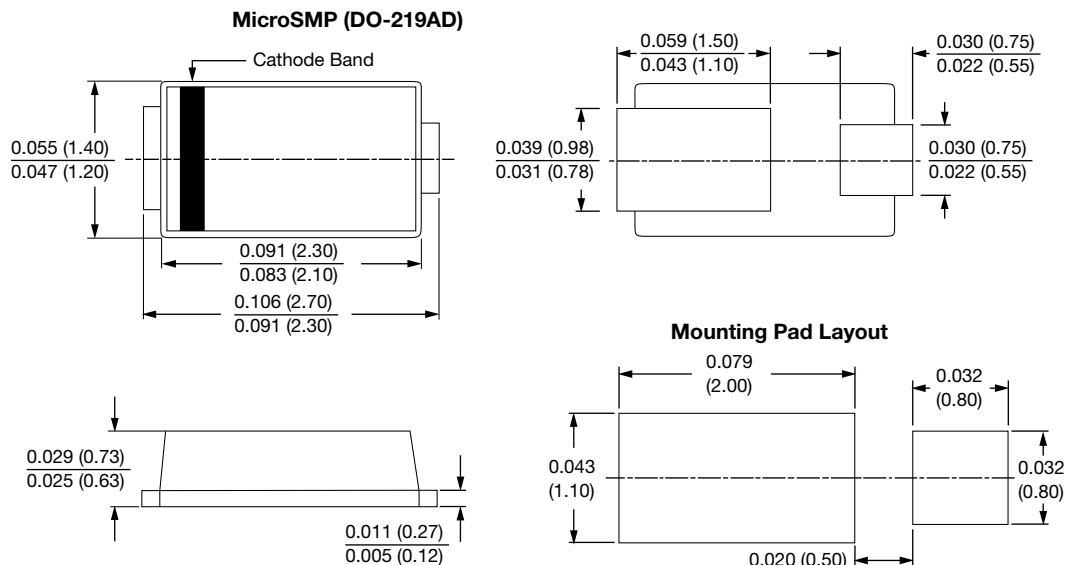


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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