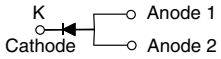
# THE DATASHEET OF

# SS8P3LHM3_A/I

# High Current Density Surface-Mount Schottky Barrier Rectifiers

eSMP® Series

SMPC (TO-277A)




## FEATURES

- Very low profile - typical height of 1.1 mm
- Ideal for automated placement
- Low forward voltage drop
- Low power loss, high efficiency
- Low thermal resistance
- 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

## LINKS TO ADDITIONAL RESOURCES

3D Models

| PRIMARY CHARACTERISTICS | |
|---|---|
| $I_{F(AV)}$ | 8.0 A |
| $V_{RRM}$ | 20 V, 30 V |
| $I_{FSM}$ | 150 A |
| $E_{AS}$ | 20 mJ |
| $V_F$ at $I_F$ = 8.0 A | 0.472 V |
| $T_J$ max. | 150 °C |
| Package | SMPC (TO-277A) |
| Circuit configuration | Single |

## TYPICAL APPLICATIONS

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

## MECHANICAL DATA

**Case:** SMPC (TO-277A)

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

**MAXIMUM RATINGS** ($T_A$ = 25 °C unless otherwise noted)

| PARAMETER | SYMBOL | SS8P2L | SS8P3L | UNIT |
|---|---|---|---|---|
| Device marking code | | S82 | S83 | |
| Maximum repetitive peak reverse voltage | $V_{RRM}$ | 20 | 30 | V |
| Maximum average forward rectified current (fig. 1) | $I_{F(AV)}$ | 8.0 | | A |
| Peak forward surge current 10 ms single half sine-wave superimposed on rated load | $I_{FSM}$ | 150 | | A |
| Non-repetitive avalanche energy at $I_{AS}$ = 2 A, $T_J$ = 25 °C | $E_{AS}$ | 20 | | mJ |
| Operating junction and storage temperature range | $T_J$, $T_{STG}$ | -55 to +150 | | °C |



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| **ELECTRICAL CHARACTERISTICS** ($T_A$ = 25 °C unless otherwise noted) | | | | | | |
|---|---|---|---|---|---|---|
| **PARAMETER** | **SYMBOL** | **TEST CONDITIONS** | | **TYP.** | **MAX.** | **UNIT** |
| Maximum instantaneous forward voltage | $V_F$ (1) | $I_F$ = 4.0 A | $T_A$ = 25 °C | 0.447 | - | V |
| | | $I_F$ = 8.0 A | | 0.533 | 0.57 | |
| | | $I_F$ = 4.0 A | $T_A$ = 125 °C | 0.357 | - | |
| | | $I_F$ = 8.0 A | | 0.472 | 0.49 | |
| Maximum reverse current | $I_{R\ (2)}$ | $V_R$ = 30 V | $T_A$ = 25 °C | 55 | 200 | µA |
| | | | $T_A$ = 125 °C | 24 | 35 | mA |
| Typical junction capacitance | $C_J$ | 4.0 V, 1 MHz | | 330 | - | pF |

**Notes**

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

(2) Pulse test: Pulse width ≤ 40 ms

| **THERMAL CHARACTERISTICS** ($T_A$ = 25 °C unless otherwise noted) | | | | |
|---|---|---|---|---|
| **PARAMETER** | **SYMBOL** | **SS8P2L** | **SS8P3L** | **UNIT** |
| Typical thermal resistance | $R_{\theta JA}$ (1) | 60 | | °C/W |
| | $R_{\theta JL}$ | 3.5 | | |

**Note**

(1) Units mounted on recommended PCB 1 oz. pad layout

| **ORDERING INFORMATION** (Example) | | | | |
|---|---|---|---|---|
| **PREFERRED P/N** | **UNIT WEIGHT (g)** | **PREFERRED PACKAGE CODE** | **BASE QUANTITY** | **DELIVERY MODE** |
| SS8P3L-M3/86A | 0.1 | 86A | 1500 | 7" diameter plastic tape and reel |
| SS8P3L-M3/87A | 0.1 | 87A | 6500 | 13" diameter plastic tape and reel |
| SS8P3LHM3_A/H (1) | 0.1 | H | 1500 | 7" diameter plastic tape and reel |
| SS8P3LHM3_A/I (1) | 0.1 | I | 6500 | 13" diameter plastic tape and reel |

**Note**

(1) AEC-Q101 qualified


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## RATINGS AND CHARACTERISTICS CURVES ($T_A$ = 25 °C unless otherwise noted)

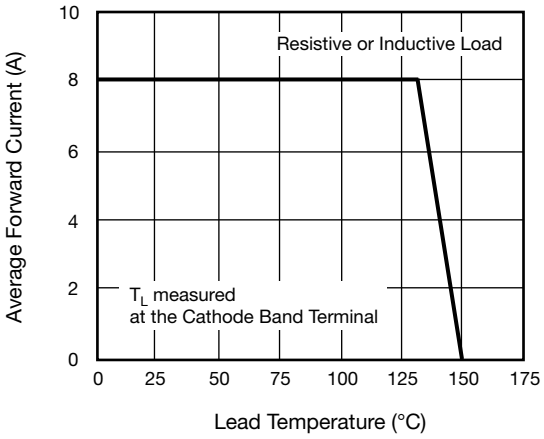


Fig. 1 - Maximum Forward Current Derating Curve

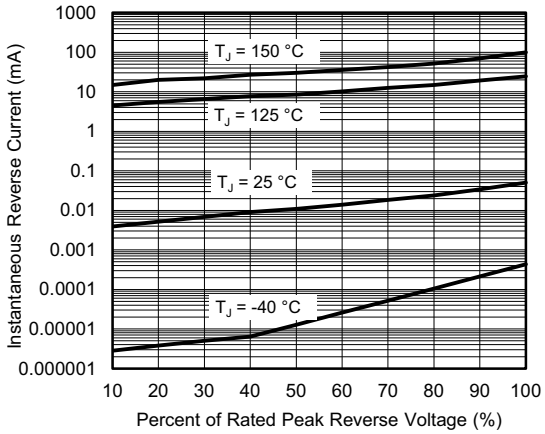


Fig. 4 - Typical Reverse Leakage Characteristics

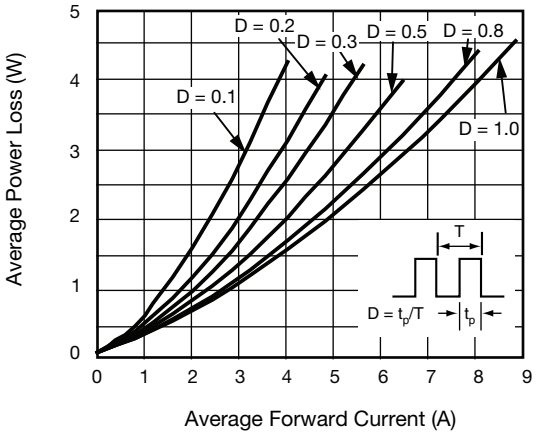


Fig. 2 - Forward Power Loss Characteristics

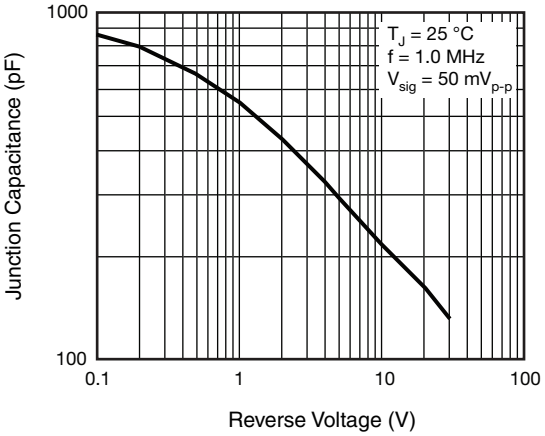


Fig. 5 - Typical Junction Capacitance

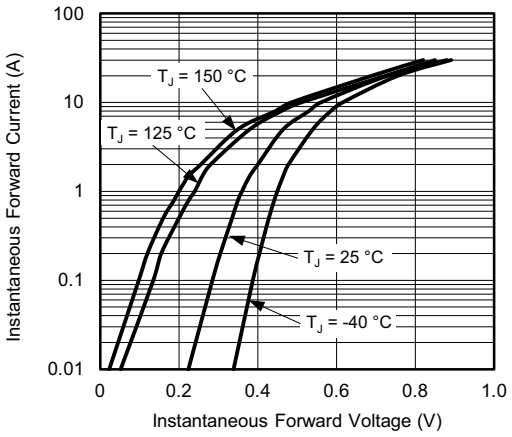


Fig. 3 - Typical Instantaneous Forward Characteristics

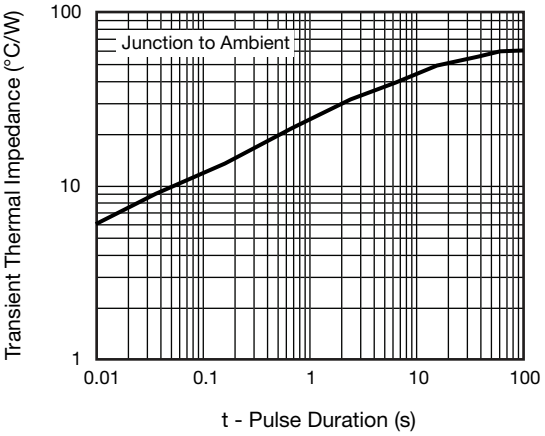


Fig. 6 - Typical Transient Thermal Impedance



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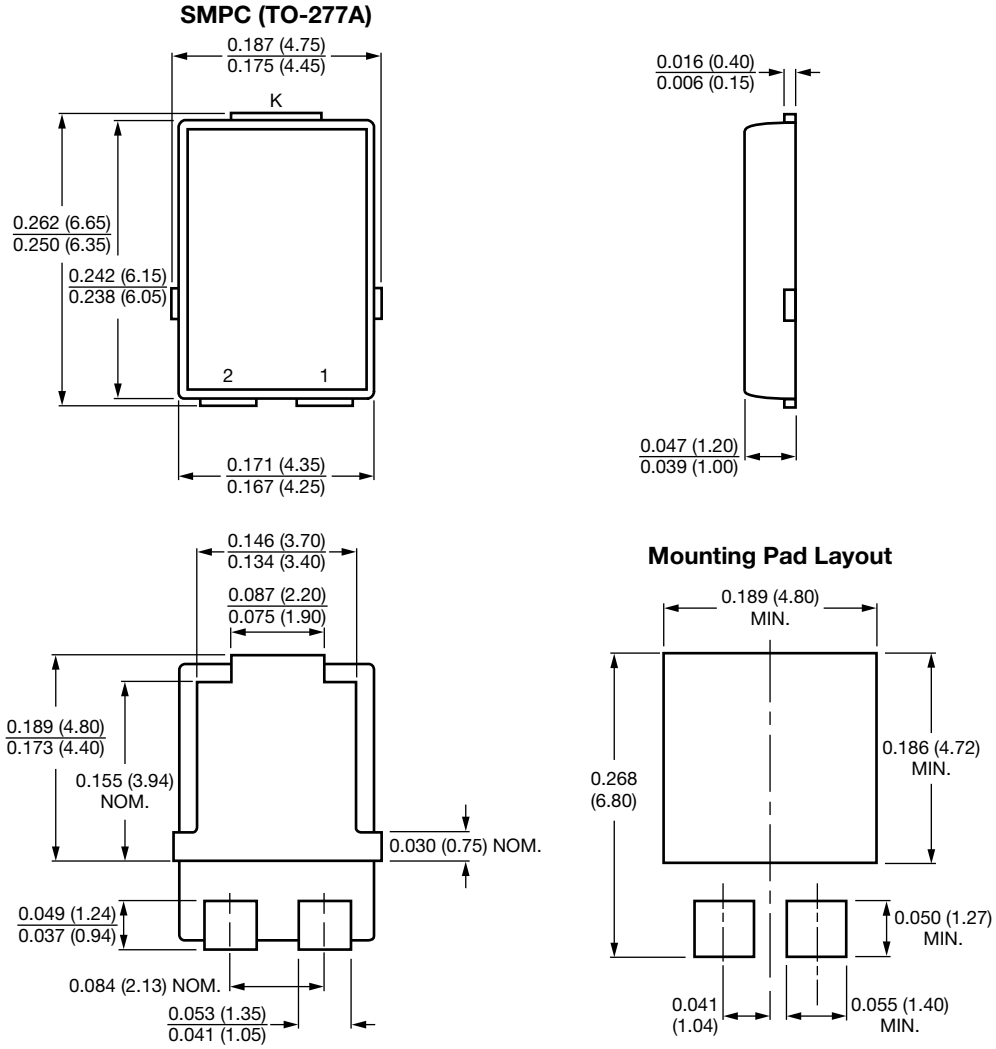
**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)




Conform to JEDEC® TO-277A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