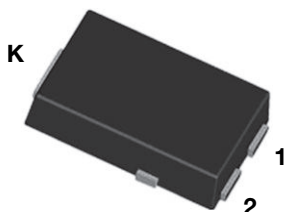
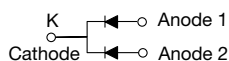


High Current Density Surface-Mount Schottky Barrier Rectifier

eSMP® Series



SMPC (TO-277A)



LINKS TO ADDITIONAL RESOURCES



| PRIMARY CHARACTERISTICS | |
|-------------------------|----------------|
| $I_{F(AV)}$ | 2 x 4.0 A |
| V_{RRM} | 20 V, 30 V |
| I_{FSM} | 120 A |
| E_{AS} | 20 mJ |
| V_F at $I_F = 4$ A | 0.41 V |
| T_J max. | 150 °C |
| Package | SMPC (TO-277A) |
| Circuit configuration | Common cathode |

FEATURES

- Very low profile - typical height of 1.1 mm
- Ideal for automated placement
- Low forward voltage drop, low power losses
- High efficiency
- Low thermal resistance
- Meets MSL level 1, per J-STD-020
- AEC-Q101 qualified available
- Automotive ordering code: base P/NHM3
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

TYPICAL APPLICATIONS

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

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 | SS8P2CL | SS8P3CL | UNIT |
| Device marking code | | S82C | S83C | |
| Maximum repetitive peak reverse voltage | V _{RRM} | 20 | 30 | V |
| Maximum average forward rectified current (fig. 1) | total device | 8.0 | | A |
| | per diode | 4.0 | | |
| Peak forward surge current 10 ms single half sine-wave superimposed on rated load | I _{FSM} | 120 | | A |
| Non-repetitive avalanche energy at 25 °C, I _{AS} = 2 A per diode | E _{AS} | 20 | | mJ |
| 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 |
|---|------------------------|-------------------------|-------------------------------|------|------|------|
| Instantaneous forward voltage per diode | I _F = 2.0 A | T _A = 25 °C | V _F ⁽¹⁾ | 0.42 | - | V |
| | I _F = 4.0 A | | | 0.50 | 0.54 | |
| | I _F = 2.0 A | T _A = 125 °C | | 0.32 | - | |
| | I _F = 4.0 A | | | 0.41 | 0.45 | |
| Reverse current per diode | Rated V _R | T _A = 25 °C | I _R ⁽²⁾ | 48 | 300 | μA |
| | | T _A = 125 °C | | 19 | 30 | mA |
| Typical junction capacitance per diode | 4.0 V, 1 MHz | | C _J | 250 | - | 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 specified)

| PARAMETER | SYMBOL | SS8P2C | SS8P3C | UNIT |
|--------------------------------------|-----------------------|--------|--------|------|
| Typical thermal resistance per diode | $R_{\theta JA}^{(1)}$ | 60 | | °C/W |
| | $R_{\theta JL}$ | 3 | | |

Note

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

ORDERING INFORMATION (Example)

| PREFERRED P/N | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
|-------------------------------|-----------------|--------------|---------------|------------------------------------|
| SS8P3CL-M3/86A | 0.10 | 86A | 1500 | 7" diameter plastic tape and reel |
| SS8P3CL-M3/87A | 0.10 | 87A | 6500 | 13" diameter plastic tape and reel |
| SS8P3CLHM3_A/H ⁽¹⁾ | 0.10 | H | 1500 | 7" diameter plastic tape and reel |
| SS8P3CLHM3_A/I ⁽¹⁾ | 0.10 | I | 6500 | 13" diameter plastic tape and reel |

Note

(1) AEC-Q101 qualified

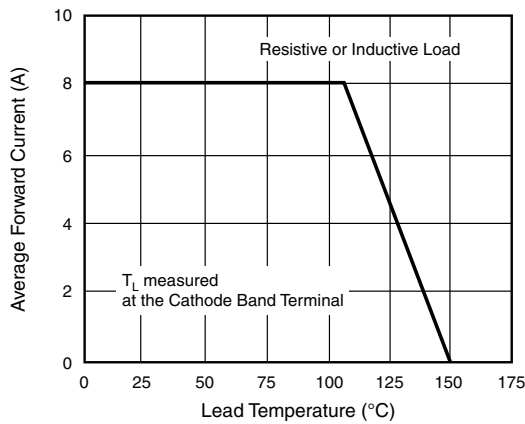
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)


Fig. 1 - Maximum Forward Current Derating Curve

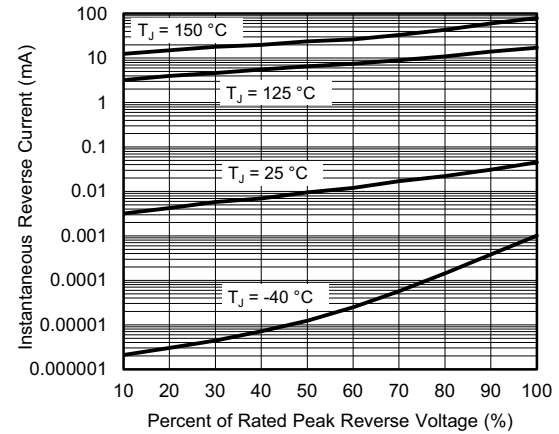


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

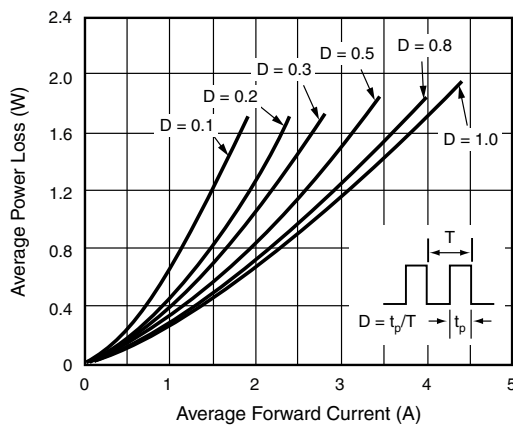


Fig. 2 - Forward Power Loss Characteristics Per Diode

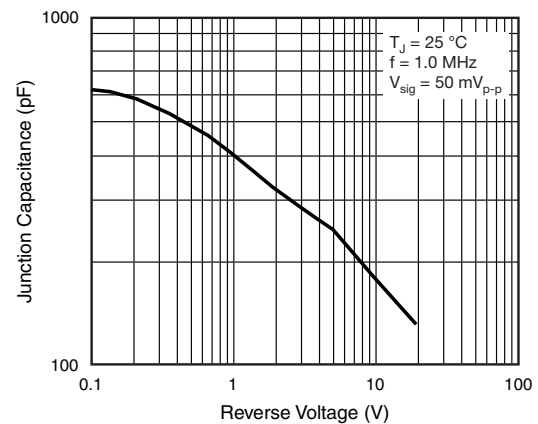


Fig. 5 - Typical Junction Capacitance Per Diode

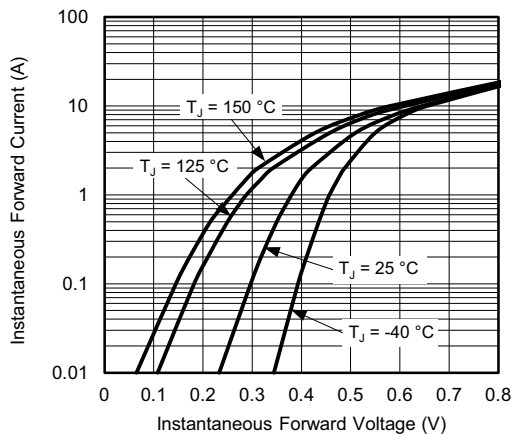


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

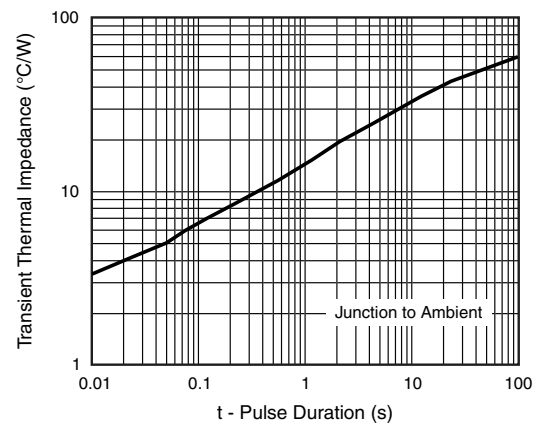
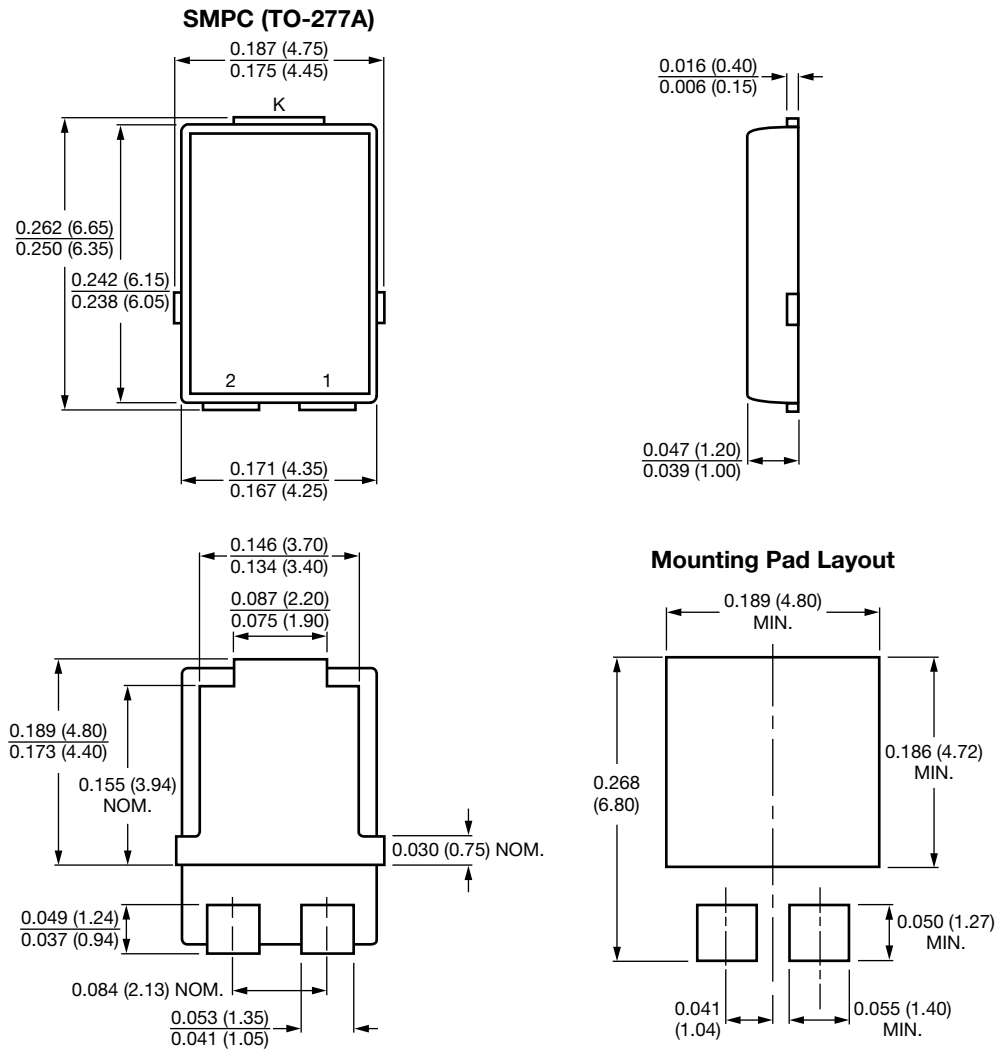


Fig. 6 - Typical Transient Thermal Impedance Per Diode



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



Conform to JEDEC® TO-277A



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