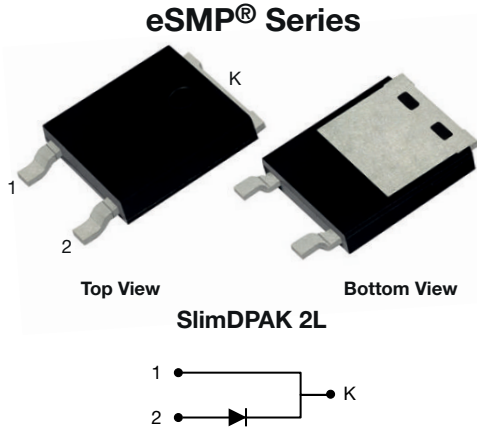


Surface-Mount Low V_F Standard Rectifier


 AUTOMOTIVE
GRADE

RoHS
COMPLIANT
HALOGEN
FREE

FEATURES

- Creepage and clearance distance 2.8 mm minimum
- Very low profile - typical height of 1.3 mm
- Ideal for automated placement
- Oxide planar chip junction
- Low forward voltage drop
- 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

TYPICAL APPLICATIONS

General purpose, power line polarity protection, in both industry and automotive on board charger applications.

LINKS TO ADDITIONAL RESOURCES



MECHANICAL DATA

Case: SlimDPAK 2L

Molding compound meets UL 94 V-0 flammability rating
Base P/N-M3 - halogen-free, RoHS-compliant
Base P/NHM3 - halogen-free, RoHS-compliant, and AEC-Q101 qualified

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

M3 and HM3 suffix meets JESD 201 class 2 whisker test

Polarity: as marked

| PRIMARY CHARACTERISTICS | |
|---|--------------|
| $I_{F(AV)}$ | 10 A |
| V_{RRM} | 400 V, 600 V |
| I_{FSM} | 150 A |
| V_F at $I_F = 10$ A ($T_J = 125$ °C) | 0.78 |
| T_J max. | 175 °C |
| Package | SlimDPAK 2L |
| Circuit configurations | Single |

| MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted) | | | | |
|---|-------------------|-------------|-------------|------|
| PARAMETER | SYMBOL | SE100PWTLG | SE100PWT LJ | UNIT |
| Device marking code | | SE100PWTLG | SE100PWT LJ | |
| Maximum repetitive peak reverse voltage | V_{RRM} | 400 | 600 | V |
| Maximum average forward rectified current (Fig. 1) | $I_{F(AV)}^{(1)}$ | 10 | | A |
| | $I_{F(AV)}^{(2)}$ | 2.9 | | |
| Peak forward surge current 10 ms single half sine-wave superimposed on rated load | I_{FSM} | 150 | | A |
| Operating junction and storage temperature range | T_J, T_{STG} | -55 to +175 | | °C |

Notes

- (1) With infinite heatsink
(2) Free air, mounted on recommended copper pad area



| ELECTRICAL CHARACTERISTICS (T _J = 25 °C unless otherwise noted) | | | | | | |
|--|--|-------------------------|-------------------------------|------|------|------|
| PARAMETER | TEST CONDITIONS | | SYMBOL | TYP. | MAX. | UNIT |
| Maximum Instantaneous forward voltage | I _F = 5.0 A | T _J = 25 °C | V _F ⁽¹⁾ | 0.84 | - | V |
| | I _F = 10.0 A | | | 0.91 | 0.96 | |
| | I _F = 5.0 A | T _J = 125 °C | | 0.7 | - | |
| | I _F = 10.0 A | | | 0.78 | 0.86 | |
| Reverse current | Rated V _R | T _J = 25 °C | I _R ⁽²⁾ | - | 5 | μA |
| | | T _J = 125 °C | | 12 | 70 | |
| Typical reverse recovery time | I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A | | t _{rr} | 300 | - | ns |
| Typical junction capacitance | 4.0 V, 1 MHz | | C _J | 96 | - | 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 | TYP. | MAX. | UNIT |
| Typical thermal resistance | R _{θJA} ⁽¹⁾⁽²⁾ | 75 | 94 | °C/W |
| | R _{θJM} ⁽³⁾ | 1.1 | 2 | |

Notes

- (1) The heat generated must be less than thermal conductivity from junction-to-ambient: dP_D/dT_J < 1/R_{θJA}
- (2) Thermal resistance junction to ambient to follow JEDEC® 51-2A, device mounted on FR4 PCB, 2 oz., standard footprint
- (3) Thermal resistance junction-to-mount to follow JEDEC® 51-14 transient dual interface test method (TDIM)

| ORDERING INFORMATION (Example) | | | | |
|--------------------------------|-----------------|------------------------|---------------|------------------------------------|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| SE100PWTLJ-M3/I | 0.185 | I | 4500 | 13" diameter plastic tape and reel |
| SE100PWTLJHM3/I ⁽¹⁾ | 0.185 | I | 4500 | 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)

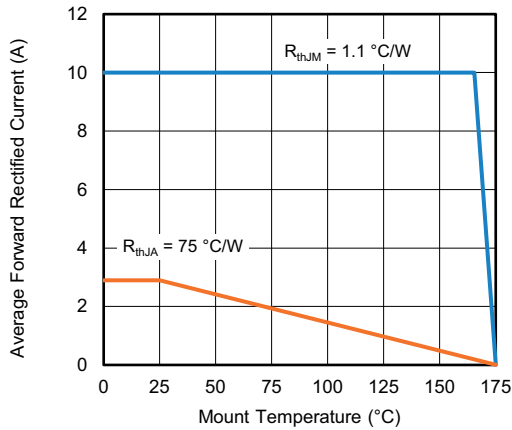


Fig. 1 - Maximum Forward Current Derating Curve

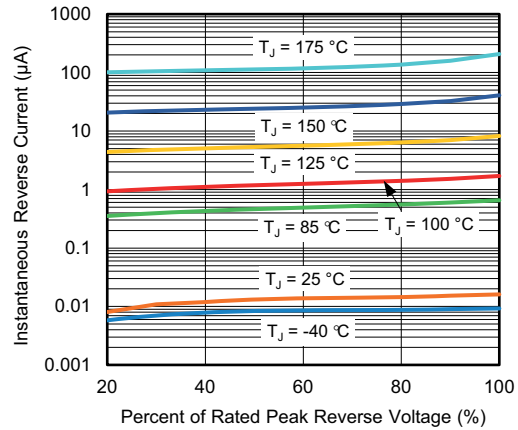


Fig. 4 - Typical Reverse Leakage Characteristics

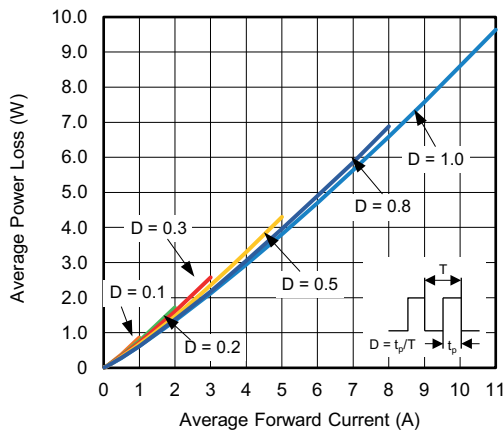


Fig. 2 - Forward Power Loss Characteristics

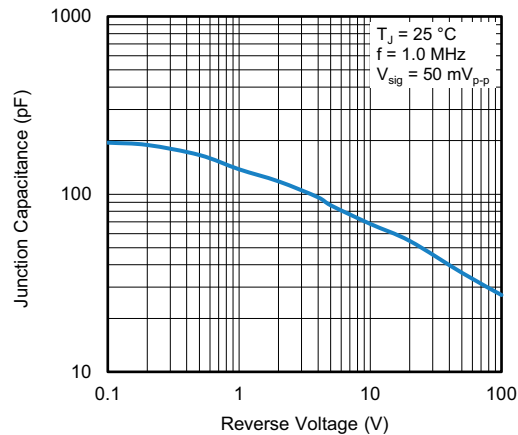


Fig. 5 - Typical Junction Capacitance

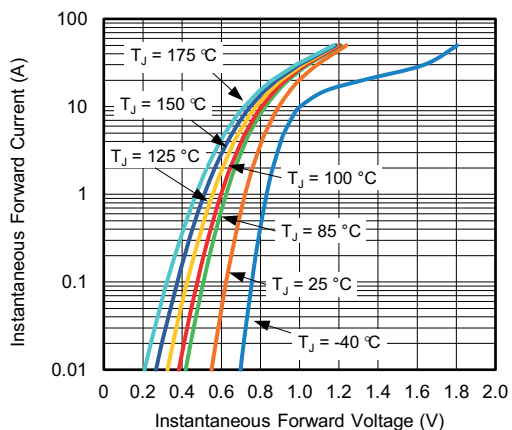


Fig. 3 - Typical Instantaneous Forward Characteristics

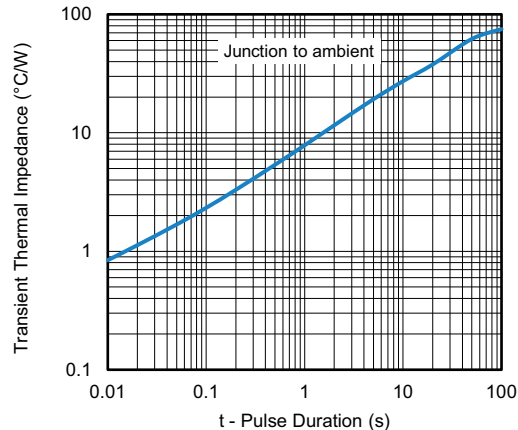
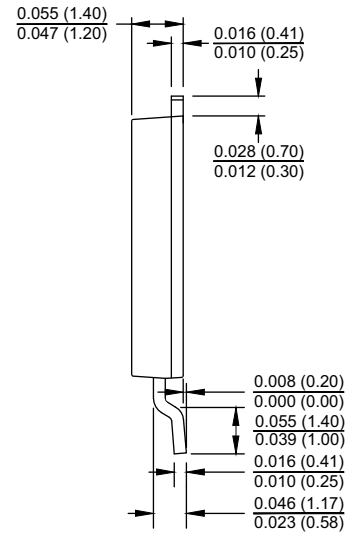
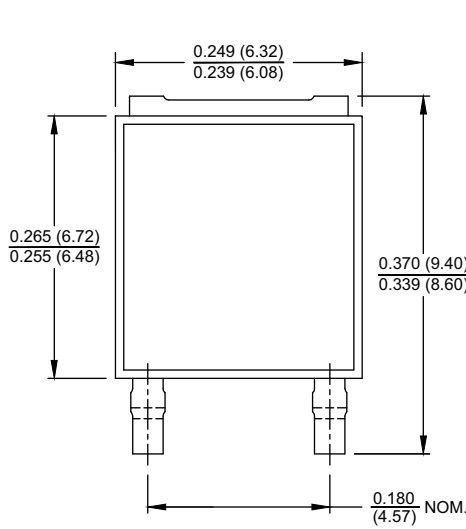


Fig. 6 - Typical Transient Thermal Impedance



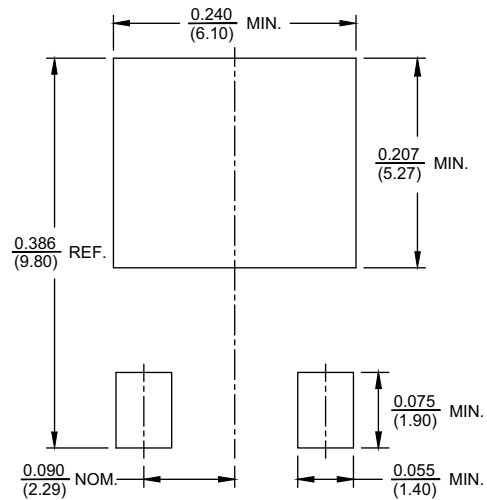
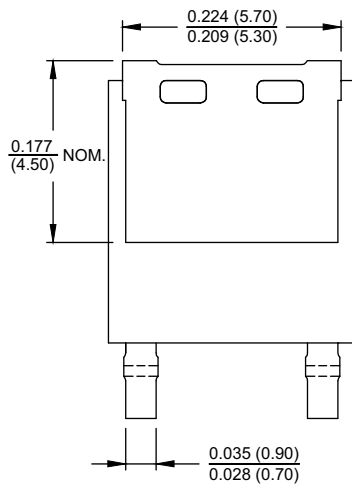
PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SlimDPAK 2L



0.177 (4.50) NOM.

Mounting Pad Layout



Note

- The suggested mounting pad layout is provided for reference only, as actual pad layouts may vary depending on application



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