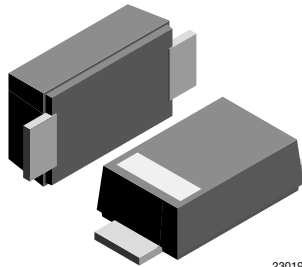
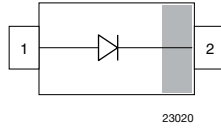


Schottky Rectifier Surface Mount

eSMP® Series



SMF (DO-219AB)



23020


RoHS
 COMPLIANT
 HALOGEN
FREE

FEATURES

- For surface mounted applications
- Low-profile package
- Ideal for automated placement
- Low power loss, high efficiency
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Meets JESD 201 class 2 whisker test
- Wave and reflow solderable
- AEC-Q101 qualified available
- Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade
- Base P/N-HM3 - halogen-free, RoHS-compliant, and AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

DESIGN SUPPORT TOOLS

[click logo to get started](#)


MECHANICAL DATA

Case: SMF (DO-219AB)

Polarity: color band denotes cathode end

Weight: approx. 15 mg

Packaging codes / options:

18/10K per 13" reel (8 mm tape), 50K/box

08/3K per 7" reel (8 mm tape), 30K/box

Circuit configuration: single

TYPICAL APPLICATIONS

For use in high frequency inverters, freewheeling, DC/DC converters, and polarity protection in commercial, industrial, and automotive applications.

| PARTS TABLE | | | |
|-------------|--|---------|---------------|
| PART | ORDERING CODE | MARKING | REMARKS |
| SL04-M | SL04-M3-18 or SL04-M3-08 SL04-HM3-18 or SL04-HM3-08 | U4 | Tape and reel |

| ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ °C}$, unless otherwise specified) | | | | |
|---|-----------------|-------------|-------|------|
| PARAMETER | TEST CONDITIONS | SYMBOL | VALUE | UNIT |
| Maximum repetitive peak reverse voltage | | V_{RRM} | 40 | V |
| Maximum average forward rectified current (fig. 4) | | $I_{F(AV)}$ | 1.1 | A |
| Peak forward surge current 8.3 ms single half sine-wave $T_{J(init)} = 25\text{ °C}$ | | I_{FSM} | 40 | A |

| THERMAL CHARACTERISTICS ($T_{amb} = 25\text{ °C}$, unless otherwise specified) | | | | |
|--|-----------------|------------|-------------|------|
| PARAMETER | TEST CONDITIONS | SYMBOL | VALUE | UNIT |
| Thermal resistance junction to lead | | R_{thJL} | 22 | K/W |
| Thermal resistance junction to ambient air ⁽¹⁾ | | R_{thJA} | 180 | K/W |
| Junction temperature in DC forward current without reverse bias | | T_j | 175 | °C |
| Storage temperature range | | T_{stg} | -55 to +175 | °C |

Note
⁽¹⁾ Mounted on epoxy substrate with 3 mm x 3 mm Cu pads ($\geq 40\text{ }\mu\text{m}$ thick)

| ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified) | | | | | | |
|---|-------------------------------|-------------------------|-------------------------------|------|------|------|
| PARAMETER | TEST CONDITIONS | | SYMBOL | TYP. | MAX. | UNIT |
| Instantaneous forward voltage | I _F = 0.5 A | T _J = 25 °C | V _F ⁽¹⁾ | 0.41 | 0.47 | V |
| | I _F = 1.1 A | | | 0.48 | 0.54 | |
| | I _F = 0.5 A | T _J = 100 °C | | 0.34 | - | |
| | I _F = 1.1 A | | | 0.43 | - | |
| | I _F = 0.5 A | T _J = 125 °C | | 0.31 | - | |
| | I _F = 1.1 A | | | 0.42 | - | |
| Reverse current | V _R = 40 V | T _J = 25 °C | I _R | 10 | 20 | μA |
| | | T _J = 100 °C | | 1.2 | 2.6 | mA |
| | | T _J = 125 °C | | 4.5 | 13 | mA |
| Typical junction capacitance | V _R = 4.0 V, 1 MHz | | C _D | 65 | - | pF |

Note

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

RATINGS AND CHARACTERISTICS CURVES (T_{amb} = 25 °C, unless otherwise specified)

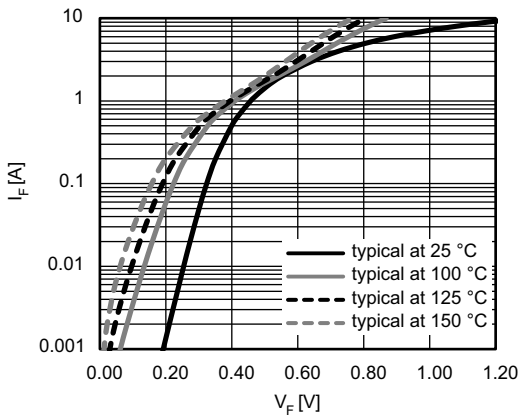


Fig. 1 - Typical Forward Characteristics

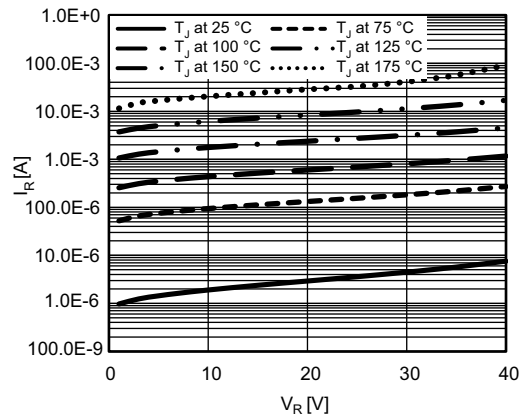


Fig. 3 - Typical Reverse Characteristics

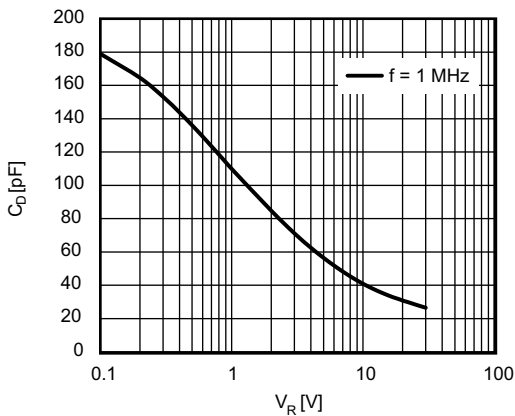


Fig. 2 - Typical Diode Capacitance vs. Reverse Voltage

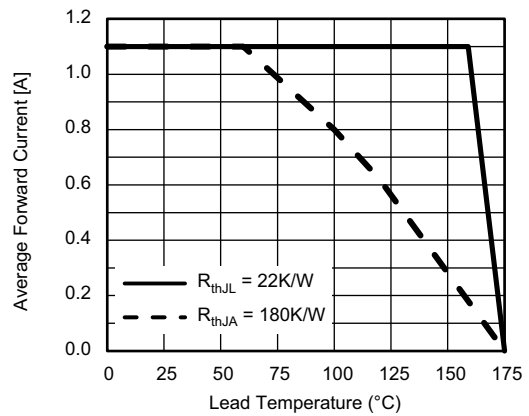


Fig. 4 - Forward Current Derating Curve

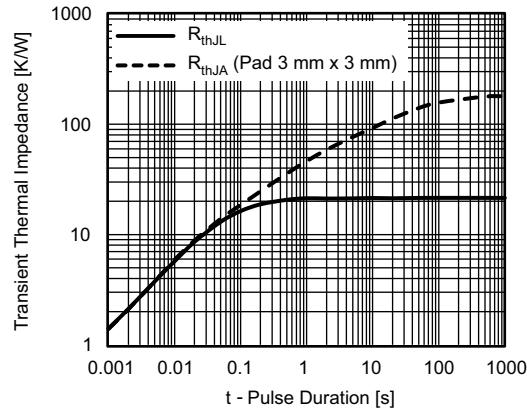
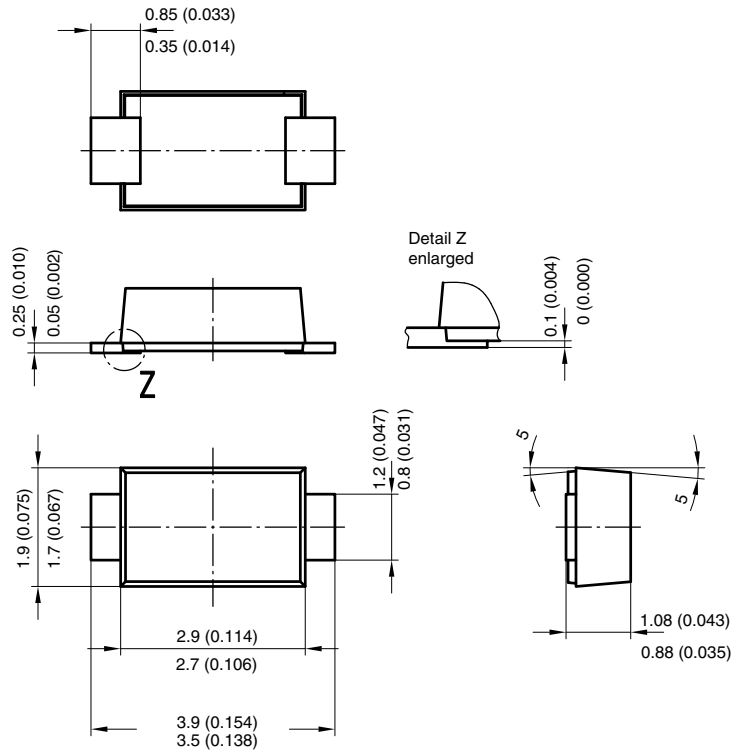
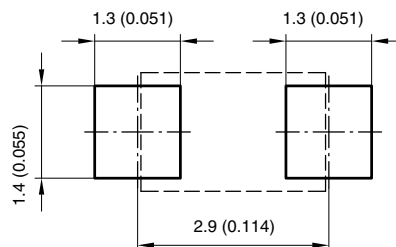


Fig. 5 - Typical Transient Thermal Impedance

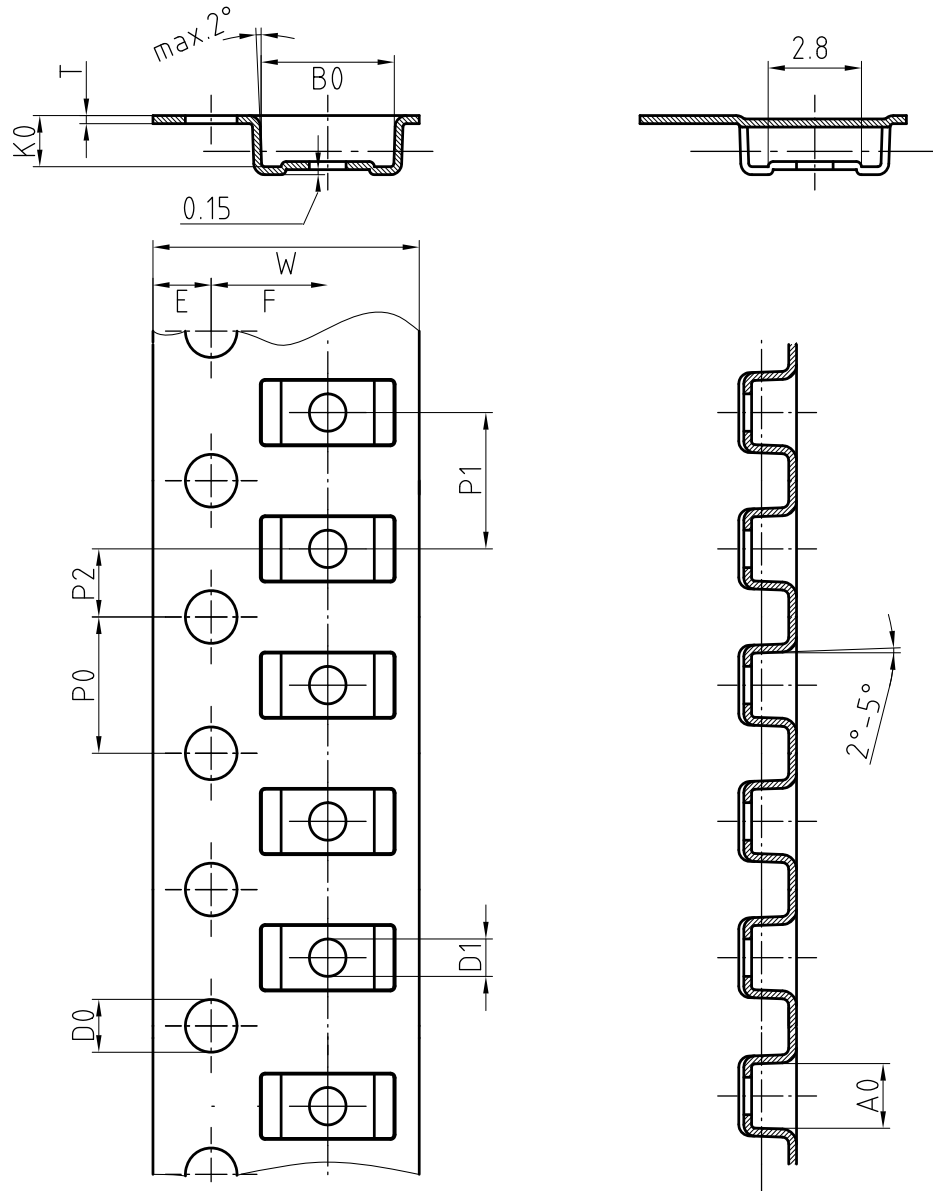
PACKAGE DIMENSIONS in millimeters (inches): **SMF (DO-219AB)**



Foot print recommendation:



Created - Date: 15. February 2005
 Rev. 3 - Date: 13. March 2007
 Document no.:S8-V-3915.01-001 (4)
 17247

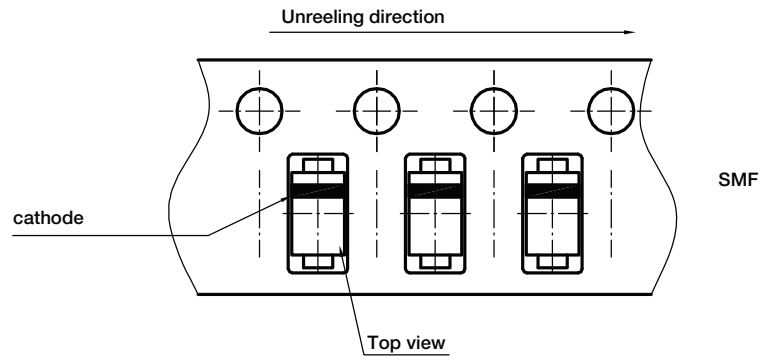
BLISTERTAPE DIMENSIONS in millimeters: **SMF (DO-219AB)**


| Mat: | A0 | B0 | K0 | W | T | P0 | P2 | P1 | D0 | D1 | E | F |
|------|-----|-----|-----|-----|-------|-----|-----|-----|-----|----|------|-----|
| PS | 1.9 | 4.0 | 1.5 | 8.0 | 0.235 | 4.0 | 2.0 | 4.0 | 1.5 | 1 | 1.75 | 3.5 |

Document-No.: S8-V-3717.02-001 (3)

18513

ORIENTATION IN CARRIER TAPE - SMF



Document no.: S8-V-3717.02-003 (4)
Created - Date: 09. Feb. 2010
22670



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