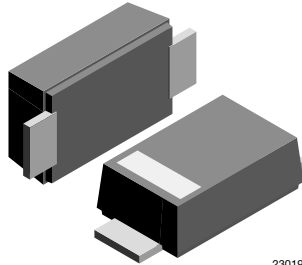
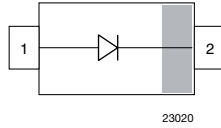


## Schottky Rectifier Surface-Mount

### eSMP® Series



SMF (DO-219AB)



23020

### 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
- Compatible to SOD-123W package case outline or SOD-123F and SOD-123FL
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



### LINKS TO ADDITIONAL RESOURCES



### 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), MOQ = 50K

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

**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<br>SL04-HM3_A-18 or SL04-HM3_A-08 | U4      | Tape and reel |

### ABSOLUTE MAXIMUM RATINGS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

| PARAMETER   | TEST CONDITIONS | SYMBOL             | VALUE | UNIT |
|---|-----------------|--------------------|-------|------|
| Maximum repetitive peak reverse voltage   |                 | V <sub>RRM</sub>   | 40    | V    |
| Maximum average forward rectified current (fig. 4)                                      |                 | I <sub>F(AV)</sub> | 1.1   | A    |
| Peak forward surge current 8.3 ms single half sine-wave<br>T <sub>J(init)</sub> = 25 °C |                 | I <sub>FSM</sub>   | 40    | A    |

### THERMAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

| PARAMETER   | TEST CONDITIONS | SYMBOL            | VALUE       | UNIT |
|---|-----------------|-------------------|-------------|------|
| Thermal resistance junction to lead                             |                 | R <sub>thJL</sub> | 22          | K/W  |
| Thermal resistance junction to ambient air <sup>(1)</sup>       |                 | R <sub>thJA</sub> | 180         | K/W  |
| Junction temperature in DC forward current without reverse bias |                 | T <sub>J</sub>    | 175         | °C   |
| Storage temperature range                                       |                 | T <sub>stg</sub>  | -55 to +175 | °C   |

#### Note

<sup>(1)</sup> Mounted on epoxy substrate with 3 mm x 3 mm Cu pads (≥ 40 μm thick)



| ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified) |                               |                         |                               |      |      |      |
|---|-------------------------------|-------------------------|-------------------------------|------|------|------|
| PARAMETER   | TEST CONDITIONS               |                         | SYMBOL                        | TYP. | MAX. | UNIT |
| Instantaneous forward voltage   | I <sub>F</sub> = 0.5 A        | T <sub>J</sub> = 25 °C  | V <sub>F</sub> <sup>(1)</sup> | 0.41 | 0.47 | V    |
|   | I <sub>F</sub> = 1.1 A        |                         |                               | 0.48 | 0.54 |      |
|   | I <sub>F</sub> = 0.5 A        | T <sub>J</sub> = 100 °C |                               | 0.34 | -    |      |
|   | I <sub>F</sub> = 1.1 A        |                         |                               | 0.43 | -    |      |
|   | I <sub>F</sub> = 0.5 A        | T <sub>J</sub> = 125 °C |                               | 0.31 | -    |      |
|   | I <sub>F</sub> = 1.1 A        |                         |                               | 0.42 | -    |      |
| Reverse current   | V <sub>R</sub> = 40 V         | T <sub>J</sub> = 25 °C  | I <sub>R</sub>                | 10   | 20   | μA   |
|   |                               | T <sub>J</sub> = 100 °C |                               | 1.2  | 2.6  | mA   |
|   |                               | T <sub>J</sub> = 125 °C |                               | 4.5  | 13   | mA   |
| Typical junction capacitance  | V <sub>R</sub> = 4.0 V, 1 MHz |                         | C <sub>D</sub>                | 65   | -    | pF   |

**Note**

<sup>(1)</sup> Pulse test: 300 μs pulse width, 1 % duty cycle

**RATINGS AND CHARACTERISTICS CURVES (T<sub>amb</sub> = 25 °C, unless otherwise specified)**

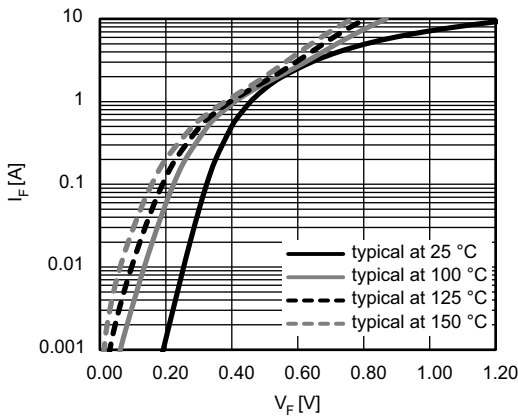


Fig. 1 - Typical Forward Characteristics

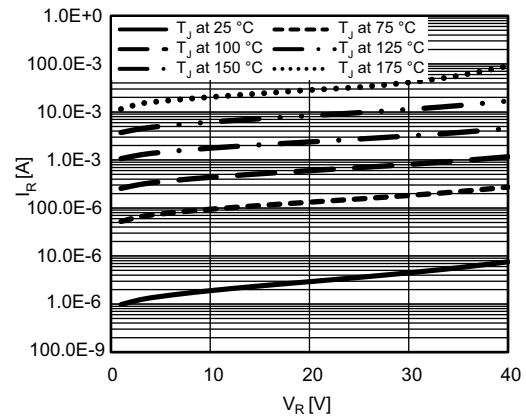


Fig. 3 - Typical Reverse Characteristics

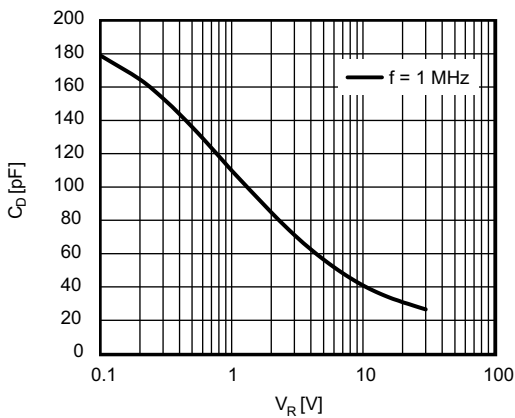


Fig. 2 - Typical Diode Capacitance vs. Reverse Voltage

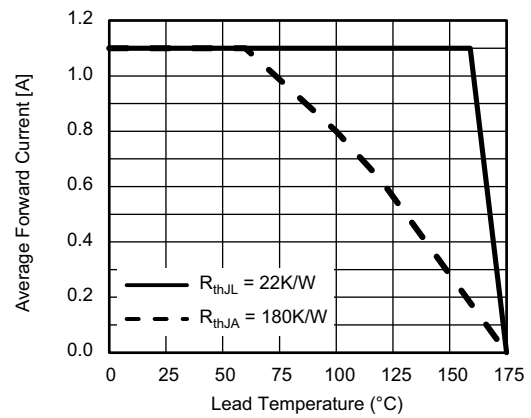


Fig. 4 - Forward Current Derating Curve

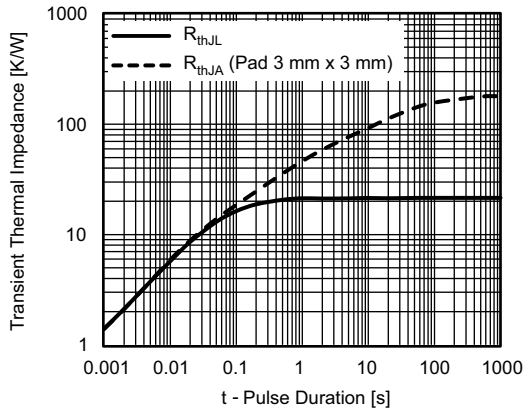
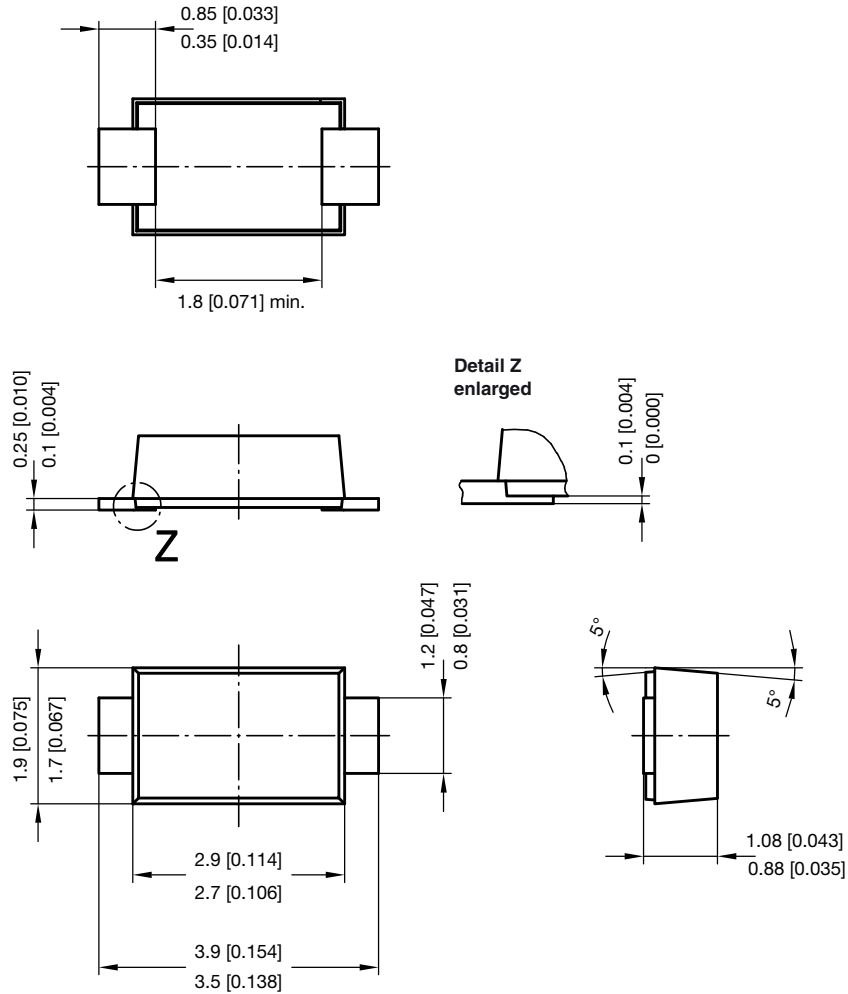
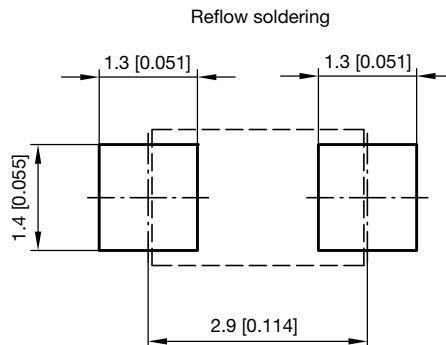


Fig. 5 - Typical Transient Thermal Impedance

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

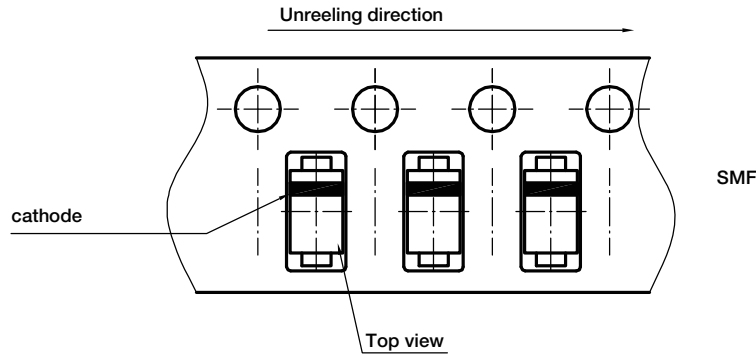


foot print recommendation:



Created - Date: 15. February 2005  
 Rev. 6 - Date: 24.Feb.2021  
 Document no.: S8-V-3915.01-001 (4)  
 22989

**ORIENTATION IN CARRIER TAPE - SMF (DO-219AB)**



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



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