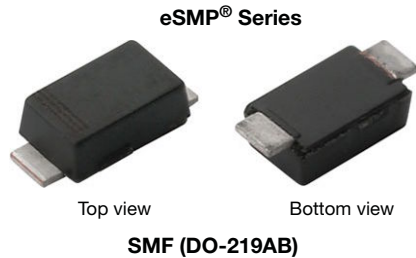


## Schottky Rectifier Surface Mount



### 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-E3 - RoHS-compliant, and commercial grade
- Base P/N-HE3 - RoHS-compliant, and AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

 AUTOMOTIVE  
GRADE  
Available

**RoHS**  
COMPLIANT

### 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        | SL04-E3-18 or SL04-E3-08<br>SL04-HE3-18 or SL04-HE3-08 | S4      | 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<br>$T_{J(\text{init})} = 25\text{ °C}$ |                 | $I_{FSM}$   | 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 <sup>(1)</sup>                        |                 | $R_{thJA}$ | 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

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

| <b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |                              |                                     |             |      |      |               |
|--|------------------------------|-------------------------------------|-------------|------|------|---------------|
| PARAMETER  | TEST CONDITIONS              |                                     | SYMBOL      | TYP. | MAX. | UNIT          |
| Instantaneous forward voltage  | $I_F = 0.5\text{ A}$         | $T_J = 25\text{ }^{\circ}\text{C}$  | $V_F^{(1)}$ | 0.41 | 0.47 | V             |
|  | $I_F = 1.1\text{ A}$         |                                     |             | 0.48 | 0.54 |               |
|  | $I_F = 0.5\text{ A}$         | $T_J = 100\text{ }^{\circ}\text{C}$ |             | 0.34 | -    |               |
|  | $I_F = 1.1\text{ A}$         |                                     |             | 0.43 | -    |               |
|  | $I_F = 0.5\text{ A}$         | $T_J = 125\text{ }^{\circ}\text{C}$ |             | 0.31 | -    |               |
|  | $I_F = 1.1\text{ A}$         |                                     |             | 0.42 | -    |               |
| Reverse current  | $V_R = 40\text{ V}$          | $T_J = 25\text{ }^{\circ}\text{C}$  | $I_R$       | 10   | 20   | $\mu\text{A}$ |
|  |                              | $T_J = 100\text{ }^{\circ}\text{C}$ |             | 1.2  | 2.6  | mA            |
|  |                              | $T_J = 125\text{ }^{\circ}\text{C}$ |             | 4.5  | 13   | mA            |
| Typical junction capacitance   | $V_R = 4.0\text{ V}$ , 1 MHz |                                     | $C_D$       | 65   | -    | pF            |

**Note**

 (1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

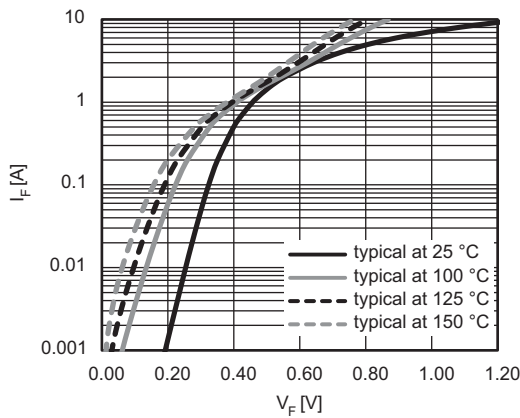
**RATINGS AND CHARACTERISTICS CURVES** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Typical Forward Characteristics

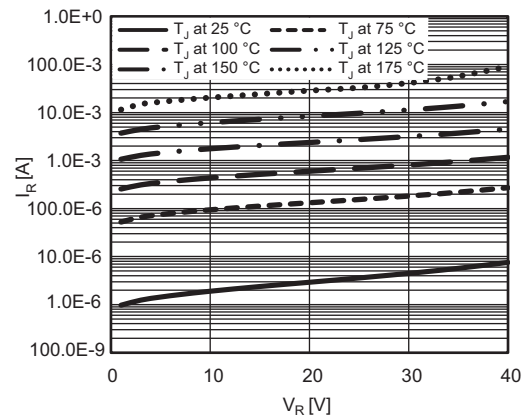


Fig. 3 - Typical Reverse Characteristics

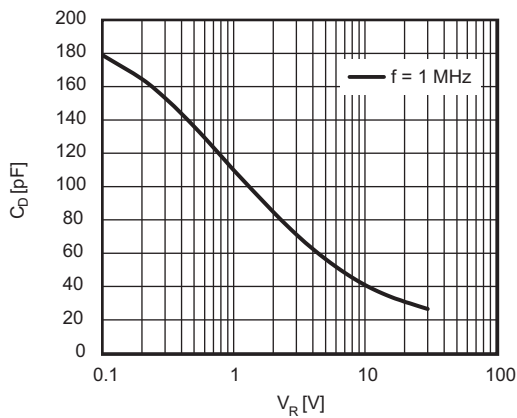


Fig. 2 - Typical Diode Capacitance vs. Reverse Voltage

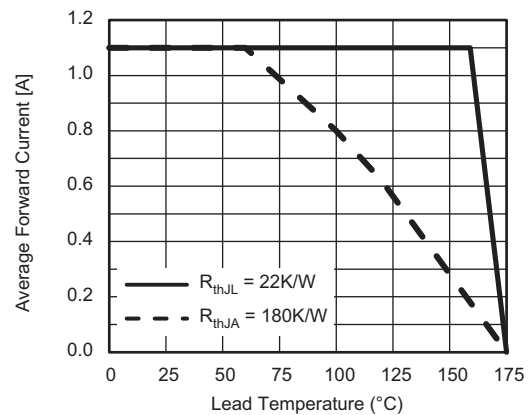


Fig. 4 - Forward Current Derating Curve

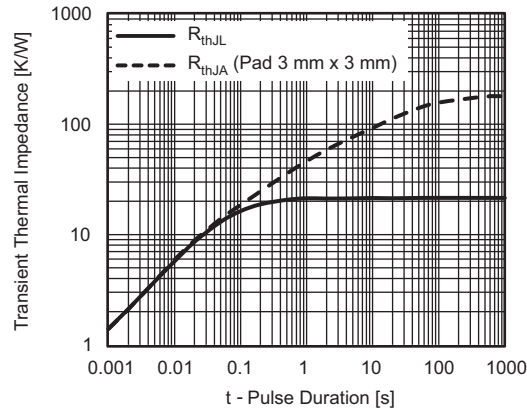
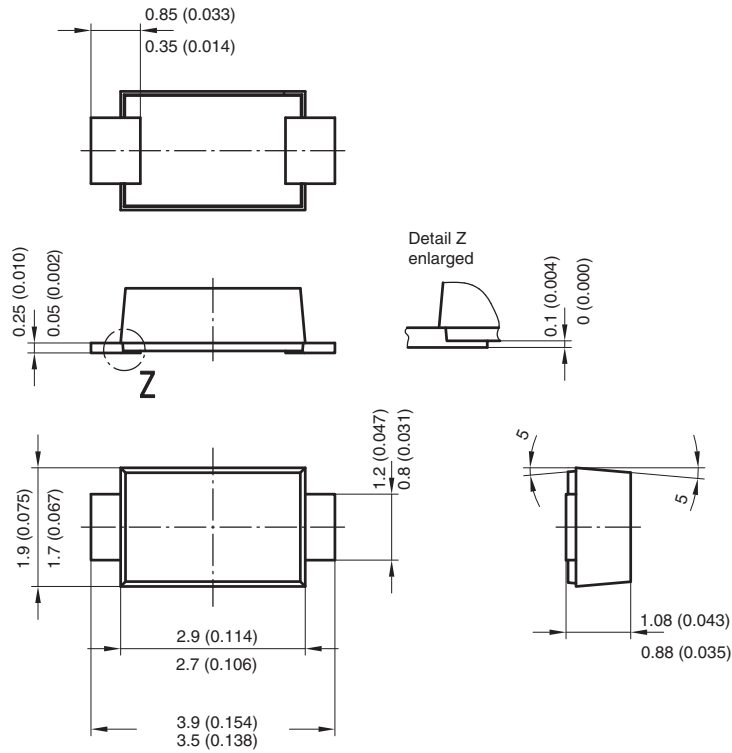
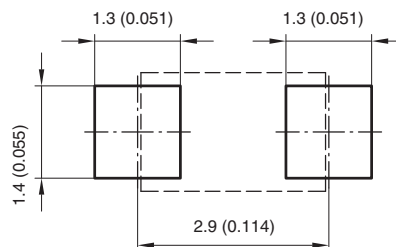


Fig. 5 - Typical Transient Thermal Impedance

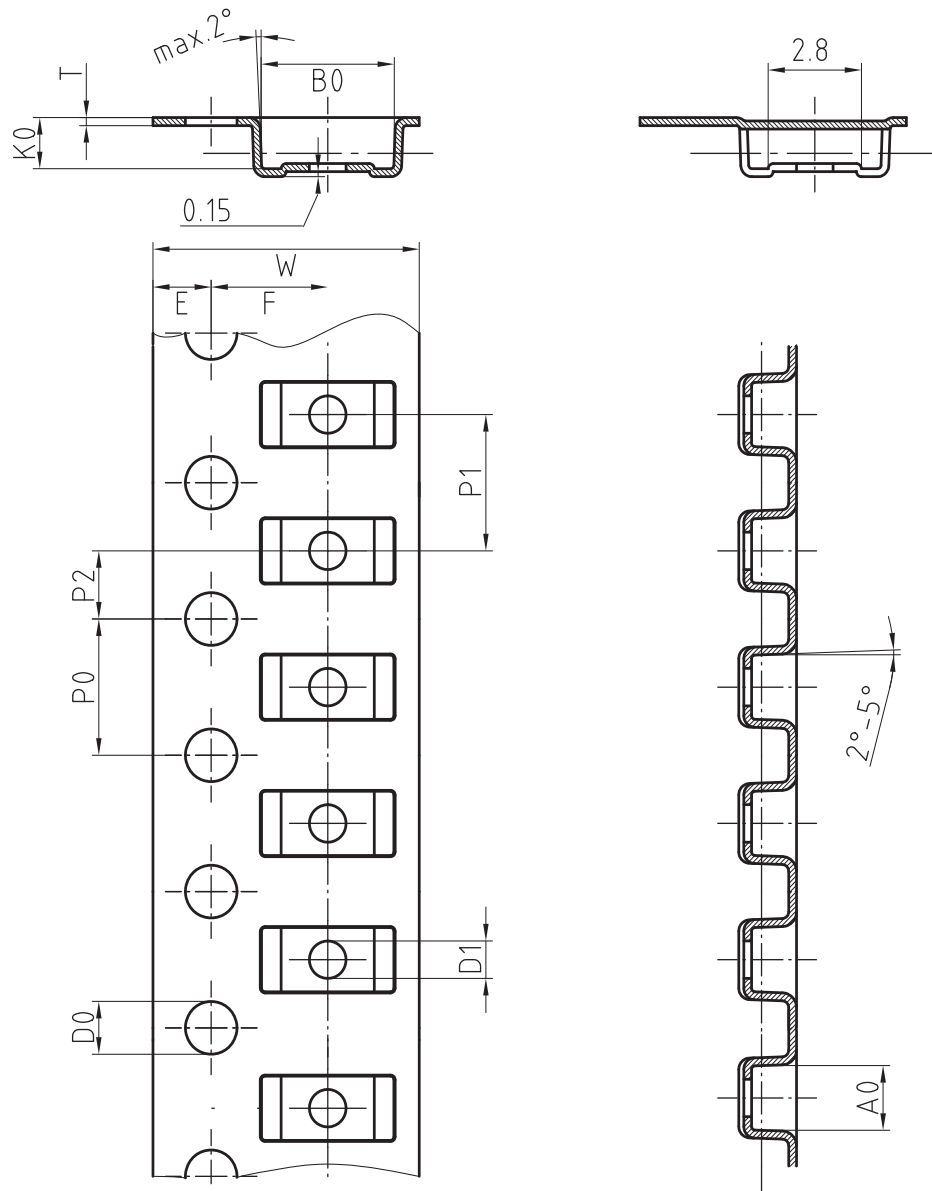
**PACKAGE DIMENSIONS** in millimeters (inches): **SMF (DO-219AB)**



Foot print recommendation:



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

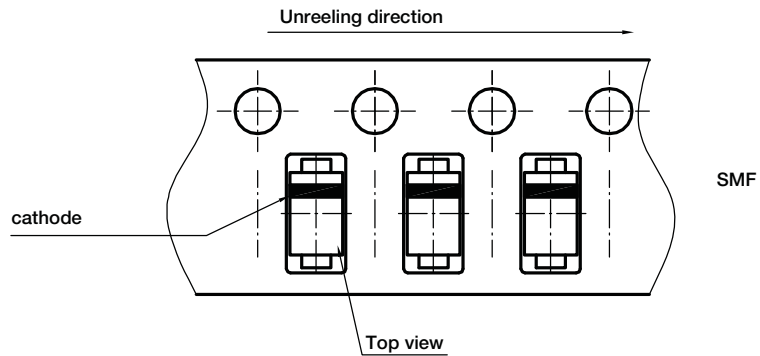
**BLISTER TAPE DIMENSIONS** in millimeters: **SMF (DO-219AB)**


| 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 |

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**ORIENTATION IN CARRIER TAPE - SMF**



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Created - Date: 09. Feb. 2010  
22670



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