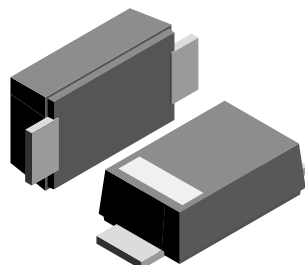
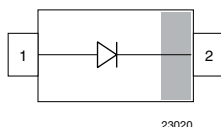


## Standard Recovery Rectifier, High Voltage Surface Mount

### eSMP® Series



SMF (DO-219AB)



### FEATURES

- For surface mounted applications
- Low profile package
- Ideal for automated placement
- Glass passivated
- High temperature soldering: 260 °C / 10 s at terminals
- Wave and reflow solderable
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


RoHS  
COMPLIANT

### MECHANICAL DATA

**Case:** SMF (DO-219AB)

**Polarity:** band denotes cathode end

**Weight:** approx. 15 mg

**Packaging codes / options:**

GS18/10K per 13" reel (8 mm tape), 50K/box

GS08/3K per 7" reel (8 mm tape), 30K/box

**Circuit configuration:** single

### DESIGN SUPPORT TOOLS

[click logo to get started](#)


### PARTS TABLE

| PART  | ORDERING CODE            | MARKING | REMARKS       |
|-------|--------------------------|---------|---------------|
| S1FLB | S1FLB-GS18 or S1FLB-GS08 | FB      | Tape and reel |
| S1FLD | S1FLD-GS18 or S1FLD-GS08 | FD      | Tape and reel |
| S1FLG | S1FLG-GS18 or S1FLG-GS08 | FG      | Tape and reel |
| S1FLJ | S1FLJ-GS18 or S1FLJ-GS08 | FJ      | Tape and reel |
| S1FLK | S1FLK-GS18 or S1FLK-GS08 | FK      | Tape and reel |
| S1FLM | S1FLM-GS18 or S1FLM-GS08 | FM      | Tape and reel |

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

| PARAMETER                                               | TEST CONDITION                        | PART  | SYMBOL             | VALUE | UNIT |
|---------------------------------------------------------|---------------------------------------|-------|--------------------|-------|------|
| Maximum repetitive peak reverse voltage                 |                                       | S1FLB | V <sub>RRM</sub>   | 100   | V    |
|                                                         |                                       | S1FLD | V <sub>RRM</sub>   | 200   | V    |
|                                                         |                                       | S1FLG | V <sub>RRM</sub>   | 400   | V    |
|                                                         |                                       | S1FLJ | V <sub>RRM</sub>   | 600   | V    |
|                                                         |                                       | S1FLK | V <sub>RRM</sub>   | 800   | V    |
|                                                         |                                       | S1FLM | V <sub>RRM</sub>   | 1000  | V    |
| Maximum RMS voltage                                     |                                       | S1FLB | V <sub>RMS</sub>   | 70    | V    |
|                                                         |                                       | S1FLD | V <sub>RMS</sub>   | 140   | V    |
|                                                         |                                       | S1FLG | V <sub>RMS</sub>   | 280   | V    |
|                                                         |                                       | S1FLJ | V <sub>RMS</sub>   | 420   | V    |
|                                                         |                                       | S1FLK | V <sub>RMS</sub>   | 560   | V    |
|                                                         |                                       | S1FLM | V <sub>RMS</sub>   | 700   | V    |
| Maximum DC blocking voltage                             |                                       | S1FLB | V <sub>DC</sub>    | 100   | V    |
|                                                         |                                       | S1FLD | V <sub>DC</sub>    | 200   | V    |
|                                                         |                                       | S1FLG | V <sub>DC</sub>    | 400   | V    |
|                                                         |                                       | S1FLJ | V <sub>DC</sub>    | 600   | V    |
|                                                         |                                       | S1FLK | V <sub>DC</sub>    | 800   | V    |
|                                                         |                                       | S1FLM | V <sub>DC</sub>    | 1000  | V    |
| Maximum average forward rectified current               | T <sub>L</sub> = 75 °C                |       | I <sub>F(AV)</sub> | 1.5   | A    |
|                                                         | T <sub>A</sub> = 65 °C <sup>(1)</sup> |       | I <sub>F(AV)</sub> | 0.7   | A    |
| Peak forward surge current 8.3 ms single half sine-wave | T <sub>L</sub> = 25 °C                |       | I <sub>FSM</sub>   | 22    | A    |

#### Note

<sup>(1)</sup> Averaged over any 20 ms period



| <b>THERMAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |                |                |             |                    |
|-------------------------------------------------------------------------------------------------------|----------------|----------------|-------------|--------------------|
| PARAMETER                                                                                             | TEST CONDITION | SYMBOL         | VALUE       | UNIT               |
| Thermal resistance junction to ambient air <sup>(1)</sup>                                             |                | $R_{thJA}$     | 180         | K/W                |
| Operating junction and storage temperature range                                                      |                | $T_j, T_{stg}$ | -55 to +150 | $^{\circ}\text{C}$ |

**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 CONDITION                                                 | PART  | SYMBOL   | MIN. | TYP. | MAX. | UNIT          |
| Maximum instantaneous forward voltage                                                                    | 1 A <sup>(1)</sup>                                             | S1FLB | $V_F$    |      |      | 1.1  | V             |
|                                                                                                          |                                                                | S1FLD | $V_F$    |      |      | 1.1  | V             |
|                                                                                                          |                                                                | S1FLG | $V_F$    |      |      | 1.1  | V             |
|                                                                                                          |                                                                | S1FLJ | $V_F$    |      |      | 1.1  | V             |
|                                                                                                          |                                                                | S1FLK | $V_F$    |      |      | 1.1  | V             |
|                                                                                                          |                                                                | S1FLM | $V_F$    |      |      | 1.1  | V             |
| Maximum DC reverse current at rated DC blocking voltage                                                  | $T_A = 25\text{ }^{\circ}\text{C}$                             | S1FLB | $I_R$    |      |      | 10   | $\mu\text{A}$ |
|                                                                                                          |                                                                | S1FLD | $I_R$    |      |      | 10   | $\mu\text{A}$ |
|                                                                                                          |                                                                | S1FLG | $I_R$    |      |      | 10   | $\mu\text{A}$ |
|                                                                                                          |                                                                | S1FLJ | $I_R$    |      |      | 10   | $\mu\text{A}$ |
|                                                                                                          |                                                                | S1FLK | $I_R$    |      |      | 10   | $\mu\text{A}$ |
|                                                                                                          |                                                                | S1FLM | $I_R$    |      |      | 10   | $\mu\text{A}$ |
|                                                                                                          | $T_A = 125\text{ }^{\circ}\text{C}$                            | S1FLB | $I_R$    |      |      | 50   | $\mu\text{A}$ |
|                                                                                                          |                                                                | S1FLD | $I_R$    |      |      | 50   | $\mu\text{A}$ |
|                                                                                                          |                                                                | S1FLG | $I_R$    |      |      | 50   | $\mu\text{A}$ |
|                                                                                                          |                                                                | S1FLJ | $I_R$    |      |      | 50   | $\mu\text{A}$ |
|                                                                                                          |                                                                | S1FLK | $I_R$    |      |      | 50   | $\mu\text{A}$ |
|                                                                                                          |                                                                | S1FLM | $I_R$    |      |      | 50   | $\mu\text{A}$ |
| Reverse recovery time                                                                                    | $I_F = 0.5\text{ A}, I_R = 1\text{ A}, I_{rr} = 0.25\text{ A}$ | S1FLB | $t_{rr}$ |      |      | 1800 | ns            |
|                                                                                                          |                                                                | S1FLD | $t_{rr}$ |      |      | 1800 | ns            |
|                                                                                                          |                                                                | S1FLG | $t_{rr}$ |      |      | 1800 | ns            |
|                                                                                                          |                                                                | S1FLJ | $t_{rr}$ |      |      | 1800 | ns            |
|                                                                                                          |                                                                | S1FLK | $t_{rr}$ |      |      | 1800 | ns            |
|                                                                                                          |                                                                | S1FLM | $t_{rr}$ |      |      | 1800 | ns            |
| Typical capacitance                                                                                      | 4 V, 1 MHz                                                     | S1FLB | $C_j$    |      | 4    |      | pF            |
|                                                                                                          |                                                                | S1FLD | $C_j$    |      | 4    |      | pF            |
|                                                                                                          |                                                                | S1FLG | $C_j$    |      | 4    |      | pF            |
|                                                                                                          |                                                                | S1FLJ | $C_j$    |      | 4    |      | pF            |
|                                                                                                          |                                                                | S1FLK | $C_j$    |      | 4    |      | pF            |
|                                                                                                          |                                                                | S1FLM | $C_j$    |      | 4    |      | pF            |

**Note**

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



## TYPICAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

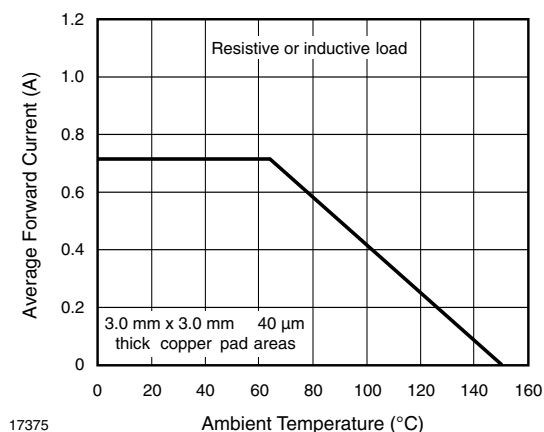


Fig. 1 - Forward Current Derating Curve

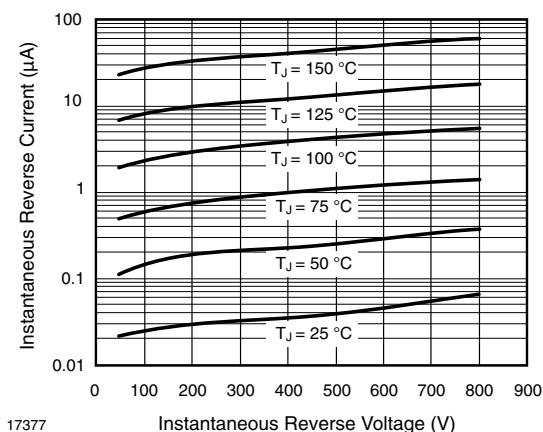


Fig. 3 - Typical Instantaneous Reverse Characteristics

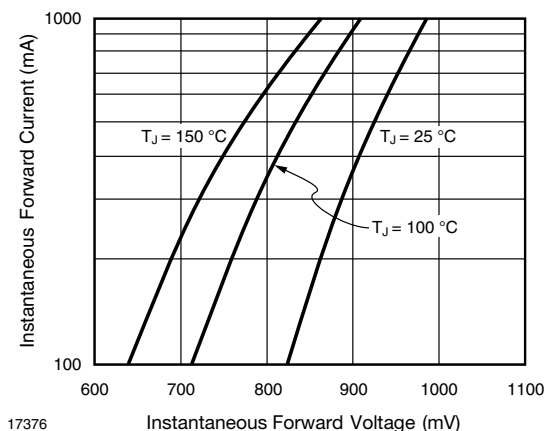


Fig. 2 - Typical Instantaneous Forward Characteristics

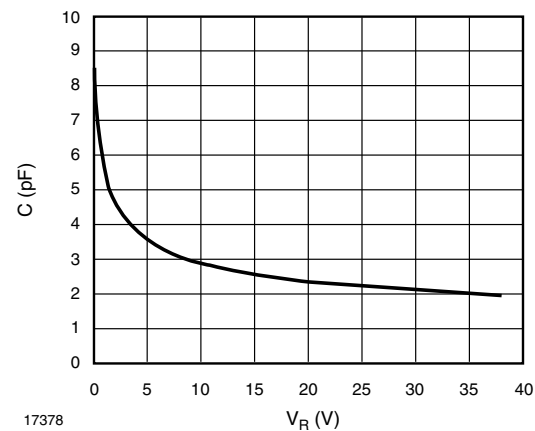
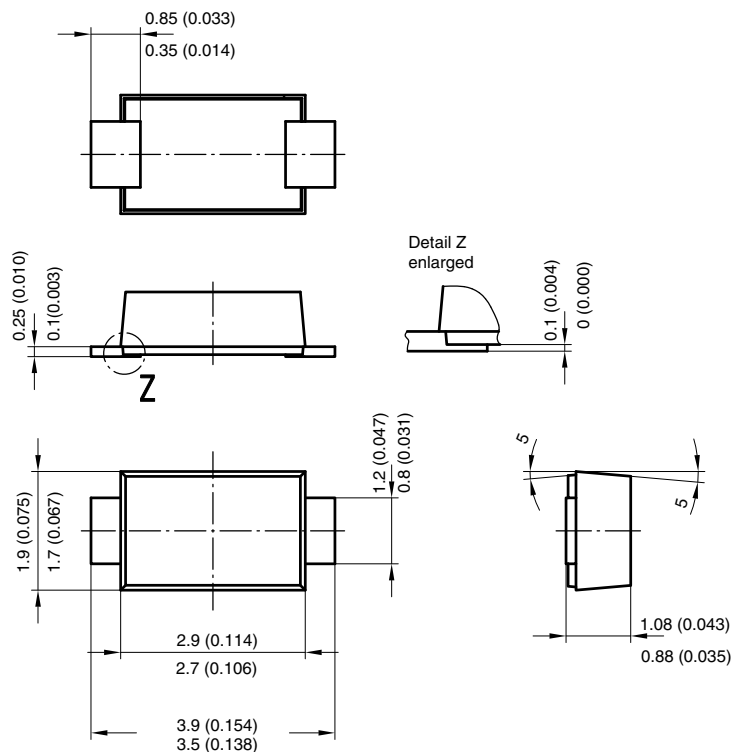


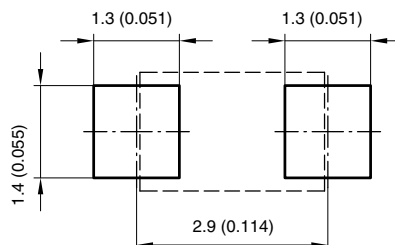
Fig. 4 - Capacitance vs. Reverse Voltage



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



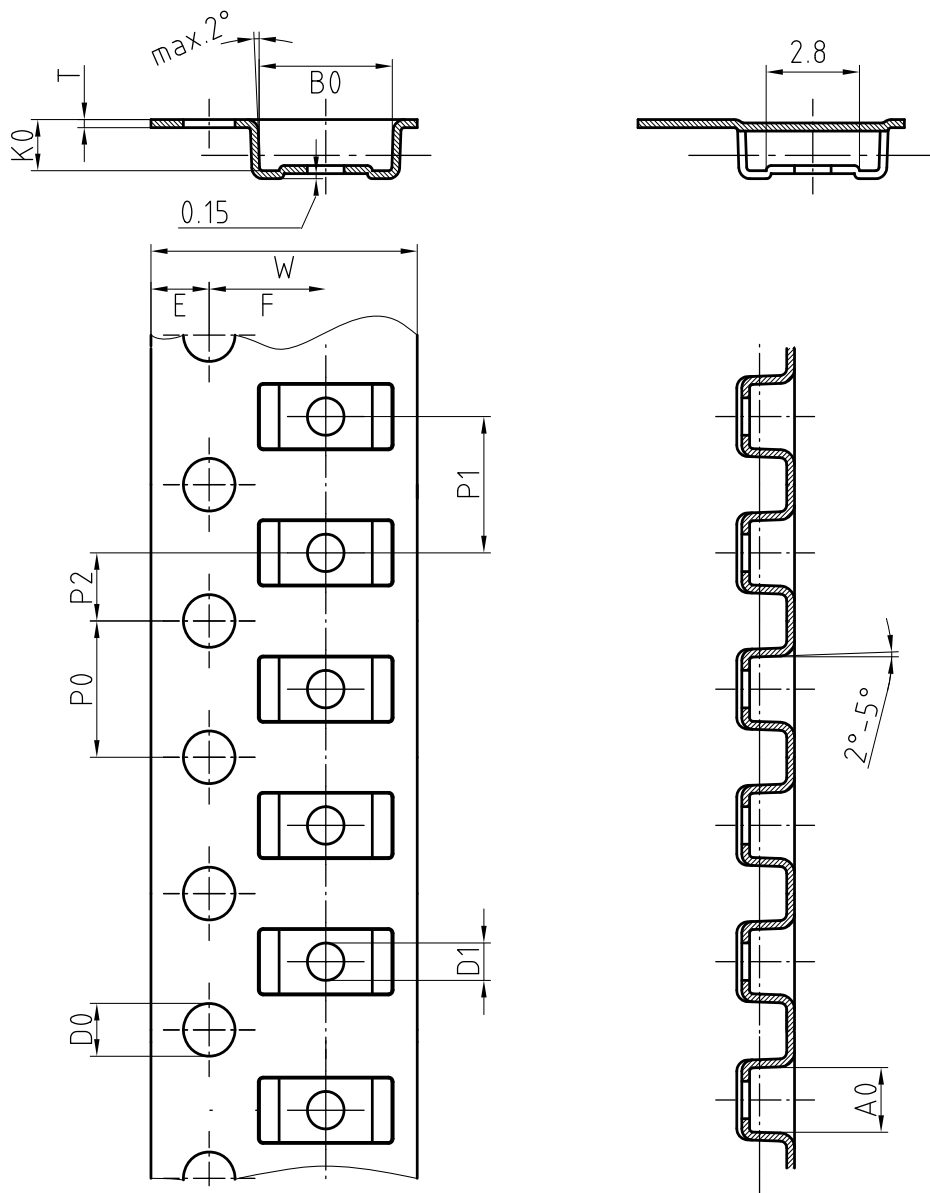
Foot print recommendation:



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)



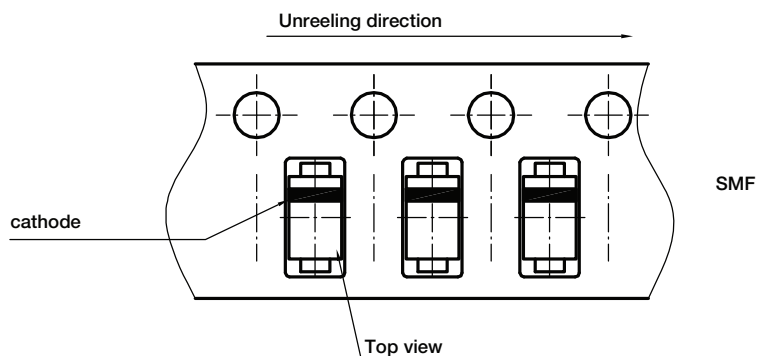
| Mat: | A0  | B0  | K0  | W   | T     | P0  | P2  | P1  | D0  | D1 | E    | F   |
|------|-----|-----|-----|-----|-------|-----|-----|-----|-----|----|------|-----|
| PS   | 1.9 | 4.0 | 1.5 | 8.0 | 0.235 | 4.0 | 2.0 | 4.0 | 1.5 | 1  | 1.75 | 3.5 |

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

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## ORIENTATION IN CARRIER TAPE - SMF



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



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