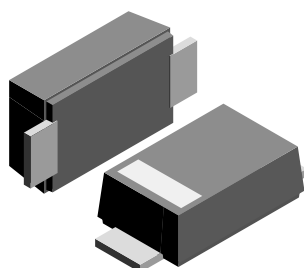




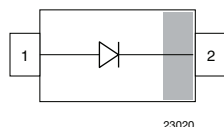
Standard Recovery Rectifier, High Voltage Surface Mount

eSMP® Series



SMF (DO-219AB)

23019



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
- 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



RoHS
COMPLIANT
HALOGEN
FREE

MECHANICAL DATA

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

LINKS TO ADDITIONAL RESOURCES



PARTS TABLE

| PART | ORDERING CODE | MARKING | REMARKS |
|---------|--------------------------|---------|---------------|
| S1FLB-M | S1FLB-M-18 or S1FLB-M-08 | HB | Tape and reel |
| S1FLD-M | S1FLD-M-18 or S1FLD-M-08 | HD | Tape and reel |
| S1FLG-M | S1FLG-M-18 or S1FLG-M-08 | HG | Tape and reel |
| S1FLJ-M | S1FLJ-M-18 or S1FLJ-M-08 | HJ | Tape and reel |
| S1FLK-M | S1FLK-M-18 or S1FLK-M-08 | HK | Tape and reel |
| S1FLM-M | S1FLM-M-18 or S1FLM-M-08 | HM | Tape and reel |

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ °C}$, unless otherwise specified)

| PARAMETER | TEST CONDITION | PART | SYMBOL | VALUE | UNIT |
|---|----------------|---------|-----------|-------|------|
| Maximum repetitive peak reverse voltage | | S1FLB-M | V_{RRM} | 100 | V |
| | | S1FLD-M | V_{RRM} | 200 | V |
| | | S1FLG-M | V_{RRM} | 400 | V |
| | | S1FLJ-M | V_{RRM} | 600 | V |
| | | S1FLK-M | V_{RRM} | 800 | V |
| | | S1FLM-M | V_{RRM} | 1000 | V |
| Maximum RMS voltage | | S1FLB-M | V_{RMS} | 70 | V |
| | | S1FLD-M | V_{RMS} | 140 | V |
| | | S1FLG-M | V_{RMS} | 280 | V |
| | | S1FLJ-M | V_{RMS} | 420 | V |
| | | S1FLK-M | V_{RMS} | 560 | V |
| | | S1FLM-M | V_{RMS} | 700 | V |



ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

| PARAMETER | TEST CONDITION | PART | SYMBOL | VALUE | UNIT |
|--|--|---------|-------------|-------|------|
| Maximum DC blocking voltage | | S1FLB-M | V_{DC} | 100 | V |
| | | S1FLD-M | V_{DC} | 200 | V |
| | | S1FLG-M | V_{DC} | 400 | V |
| | | S1FLJ-M | V_{DC} | 600 | V |
| | | S1FLK-M | V_{DC} | 800 | V |
| | | S1FLM-M | V_{DC} | 1000 | V |
| Maximum average forward rectified current | $T_L = 75\text{ }^{\circ}\text{C}$ ⁽¹⁾ | | $I_{F(AV)}$ | 1.5 | A |
| | $T_A = 25\text{ }^{\circ}\text{C}$ ⁽¹⁾ at $R_{thJA} < 110\text{ K/W}$ | | $I_{F(AV)}$ | 1 | A |
| | $T_A = 65\text{ }^{\circ}\text{C}$ ⁽¹⁾ | | $I_{F(AV)}$ | 0.7 | A |
| Peak forward surge current 8.3 ms half sine-wave | $T_L = 25\text{ }^{\circ}\text{C}$ | | I_{FSM} | 22 | A |

Note

⁽¹⁾ Averaged over any 20 ms period

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

| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
|---|----------------|----------------|-------------|--------------------|
| Thermal resistance junction to ambient air ⁽¹⁾ | | R_{thJA} | 180 | K/W |
| Operating junction and storage temperature range | | T_j, T_{stg} | -55 to +150 | $^{\circ}\text{C}$ |

Note

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

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

| PARAMETER | TEST CONDITION | PART | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|---|-------------------------------------|---------|--------|------|------|------|---------------|
| Instantaneous forward voltage | 1 A ⁽¹⁾ | S1FLB-M | V_F | | | 1.1 | V |
| | | S1FLD-M | V_F | | | 1.1 | V |
| | | S1FLG-M | V_F | | | 1.1 | V |
| | | S1FLJ-M | V_F | | | 1.1 | V |
| | | S1FLK-M | V_F | | | 1.1 | V |
| | | S1FLM-M | V_F | | | 1.1 | V |
| Maximum DC reverse current at rated DC blocking voltage | $T_A = 25\text{ }^{\circ}\text{C}$ | S1FLB-M | I_R | | | 10 | μA |
| | | S1FLD-M | I_R | | | 10 | μA |
| | | S1FLG-M | I_R | | | 10 | μA |
| | | S1FLJ-M | I_R | | | 10 | μA |
| | | S1FLK-M | I_R | | | 10 | μA |
| | | S1FLM-M | I_R | | | 10 | μA |
| | $T_A = 125\text{ }^{\circ}\text{C}$ | S1FLB-M | I_R | | | 50 | μA |
| | | S1FLD-M | I_R | | | 50 | μA |
| | | S1FLG-M | I_R | | | 50 | μA |
| | | S1FLJ-M | I_R | | | 50 | μA |
| | | S1FLK-M | I_R | | | 50 | μA |
| | | S1FLM-M | I_R | | | 50 | μA |

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

| PARAMETER | TEST CONDITION | PART | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|-----------------------|--|---------|----------|------|------|------|------|
| Reverse recovery time | $I_F = 0.5\text{ A}$, $I_R = 1\text{ A}$, $I_{rr} = 0.25\text{ A}$ | S1FLB-M | t_{rr} | | | 1800 | ns |
| | | S1FLD-M | t_{rr} | | | 1800 | ns |
| | | S1FLG-M | t_{rr} | | | 1800 | ns |
| | | S1FLJ-M | t_{rr} | | | 1800 | ns |
| | | S1FLK-M | t_{rr} | | | 1800 | ns |
| | | S1FLM-M | t_{rr} | | | 1800 | ns |
| Typical capacitance | 4 V, 1 MHz | S1FLB-M | C_j | | 4 | | pF |
| | | S1FLD-M | C_j | | 4 | | pF |
| | | S1FLG-M | C_j | | 4 | | pF |
| | | S1FLJ-M | C_j | | 4 | | pF |
| | | S1FLK-M | C_j | | 4 | | pF |
| | | S1FLM-M | C_j | | 4 | | pF |

Note

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



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

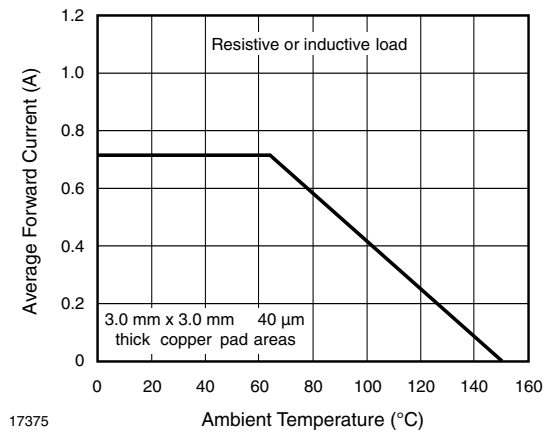


Fig. 1 - Forward Current Derating Curve

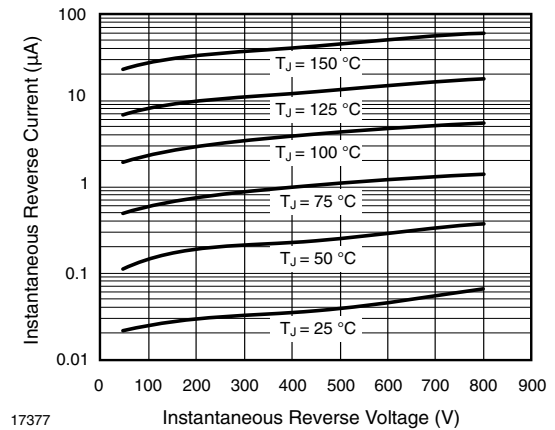


Fig. 3 - Typical Instantaneous Reverse Characteristics

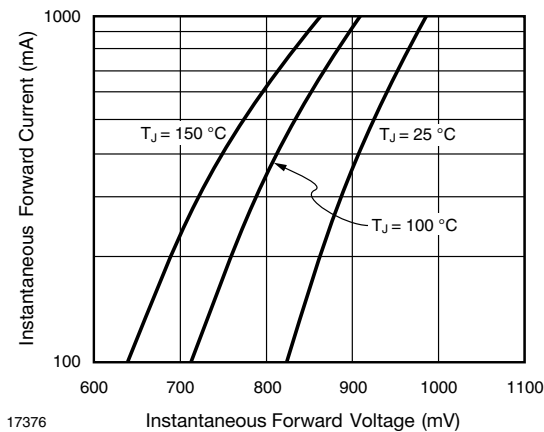


Fig. 2 - Typical Instantaneous Forward Characteristics

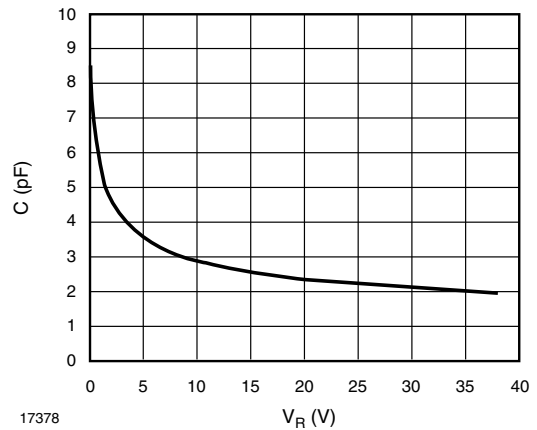
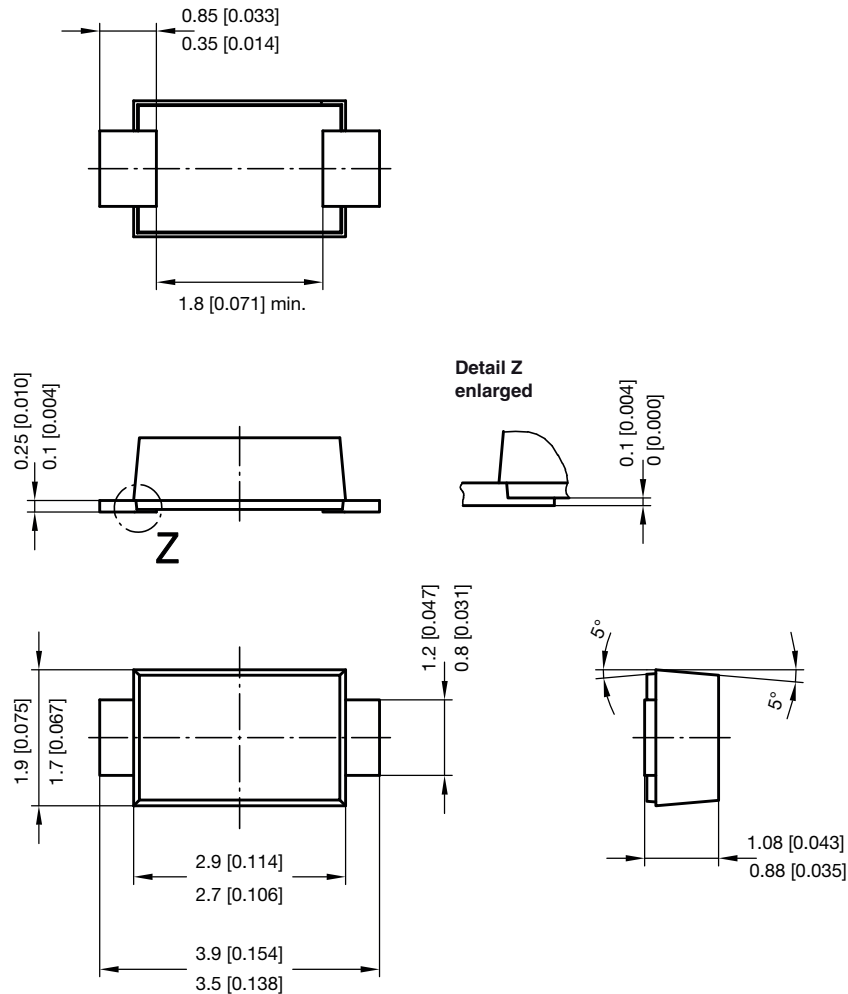


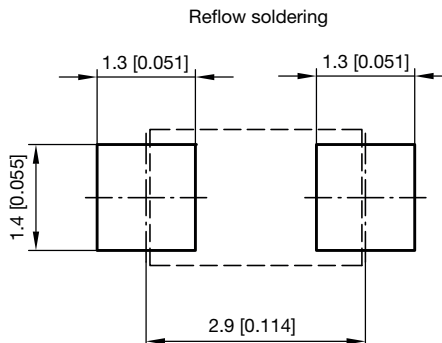
Fig. 4 - Capacitance vs. Reverse Voltage



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



foot print recommendation:



Created - Date: 15. February 2005

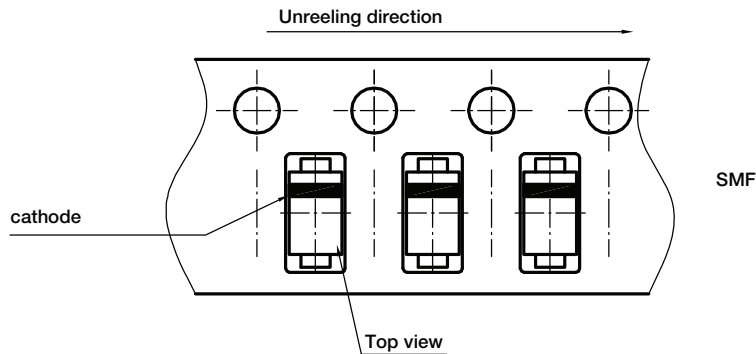
Rev. 6 - Date: 24.Feb.2021

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



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Created - Date: 09. Feb. 2010

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