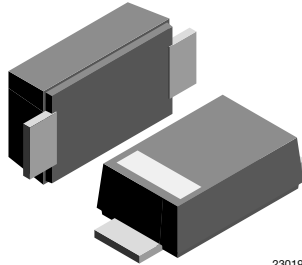


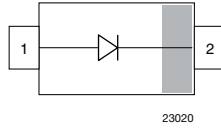
Standard Recovery Rectifier High Voltage Surface-Mount

eSMP® Series



SMF (DO-219AB)

23019



23020

LINKS TO ADDITIONAL RESOURCES



3D Models

FEATURES

- For surface mounted applications
- Low profile package
- Ideal for automated placement
- Glass passivated
- 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
- Base P/N-M3 - halogen-free, RoHS-compliant
Base P/N-M - 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



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)

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

Circuit configuration: single

| PARTS TABLE | | | |
|-------------|--------------------------|---------|---------------|
| PART | ORDERING CODE | MARKING | REMARKS |
| S07B-M | S07B-M3-18 or S07B-M3-08 | Y5 | Tape and reel |
| | S07B-M-18 or S07B-M-08 | UB | |
| S07D-M | S07D-M3-18 or S07D-M3-08 | Y6 | Tape and reel |
| | S07D-M-18 or S07D-M-08 | UD | |
| S07G-M | S07G-M3-18 or S07G-M3-08 | Y7 | Tape and reel |
| | S07G-M-18 or S07G-M-08 | UG | |
| S07J-M | S07J-M3-18 or S07J-M3-08 | Y8 | Tape and reel |
| | S07J-M-18 or S07J-M-08 | UJ | |
| S07M-M | S07M-M3-18 or S07M-M3-08 | Y9 | Tape and reel |
| | S07M-M-18 or S07M-M-08 | UM | |



| ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) | | | | | |
|--|--|--------|-------------|-------|------|
| PARAMETER | TEST CONDITION | PART | SYMBOL | VALUE | UNIT |
| Maximum repetitive peak reverse voltage | | S07B-M | V_{RRM} | 100 | V |
| | | S07D-M | V_{RRM} | 200 | V |
| | | S07G-M | V_{RRM} | 400 | V |
| | | S07J-M | V_{RRM} | 600 | V |
| | | S07M-M | V_{RRM} | 1000 | V |
| Maximum RMS voltage | | S07B-M | V_{RMS} | 70 | V |
| | | S07D-M | V_{RMS} | 140 | V |
| | | S07G-M | V_{RMS} | 280 | V |
| | | S07J-M | V_{RMS} | 420 | V |
| | | S07M-M | V_{RMS} | 700 | V |
| Maximum DC blocking voltage | | S07B-M | V_{DC} | 100 | V |
| | | S07D-M | V_{DC} | 200 | V |
| | | S07G-M | V_{DC} | 400 | V |
| | | S07J-M | V_{DC} | 600 | V |
| | | S07M-M | V_{DC} | 1000 | V |
| Maximum average forward rectified current | $T_L = 110\text{ }^{\circ}\text{C}$ ⁽¹⁾ | | $I_{F(AV)}$ | 1.5 | A |
| | $T_A = 65\text{ }^{\circ}\text{C}$ ⁽¹⁾ | | $I_{F(AV)}$ | 0.7 | A |
| Peak forward surge current 8.3 ms single half | $T_L = 25\text{ }^{\circ}\text{C}$ | | I_{FSM} | 25 | 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} | -65 to +175 | $^{\circ}\text{C}$ |

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 | $I_F = 1\text{ A}$ ⁽¹⁾ | S07B-M | V_F | | | 1.1 | V | |
| | | S07D-M | V_F | | | 1.1 | V | |
| | | S07G-M | V_F | | | 1.1 | V | |
| | | S07J-M | V_F | | | 1.1 | V | |
| | | S07M-M | V_F | | | 1.1 | V | |
| Maximum DC reverse current at rated DC blocking voltage | $T_A = 25\text{ }^{\circ}\text{C}$ | S07B-M | I_R | | | 10 | μA | |
| | | S07D-M | I_R | | | 10 | μA | |
| | | S07G-M | I_R | | | 10 | μA | |
| | | S07J-M | I_R | | | 10 | μA | |
| | | S07M-M | I_R | | | 10 | μA | |
| | $T_A = 125\text{ }^{\circ}\text{C}$ | S07B-M | I_R | | | | 50 | μA |
| | | S07D-M | I_R | | | | 50 | μA |
| | | S07G-M | I_R | | | | 50 | μA |
| | | S07J-M | I_R | | | | 50 | μA |
| | | S07M-M | I_R | | | | 50 | μA |
| Reverse recovery time | $I_F = 0.5\text{ A}, I_R = 1\text{ A}, I_{rr} = 0.25\text{ A}$ | S07B-M | t_{rr} | | | 1800 | ns | |
| | | S07D-M | t_{rr} | | | 1800 | ns | |
| | | S07G-M | t_{rr} | | | 1800 | ns | |
| | | S07J-M | t_{rr} | | | 1800 | ns | |
| | | S07M-M | t_{rr} | | | 1800 | ns | |
| Typical capacitance | 4 V, 1 MHz | S07B-M | C_j | | 4 | | pF | |
| | | S07D-M | C_j | | 4 | | pF | |
| | | S07G-M | C_j | | 4 | | pF | |
| | | S07J-M | C_j | | 4 | | pF | |
| | | S07M-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)

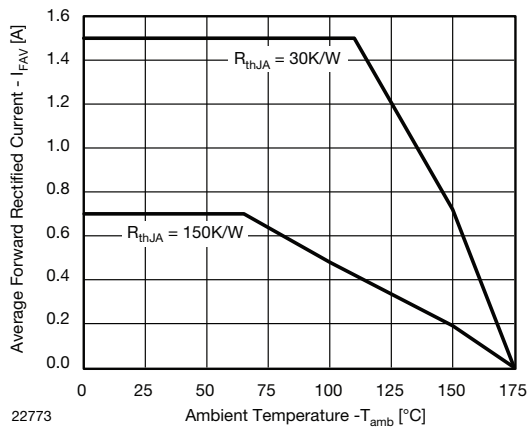


Fig. 1 - Forward Current Derating Curve

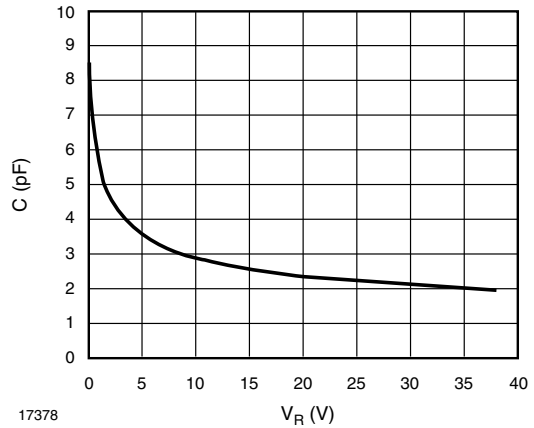


Fig. 4 - Capacitance vs. Reverse Voltage

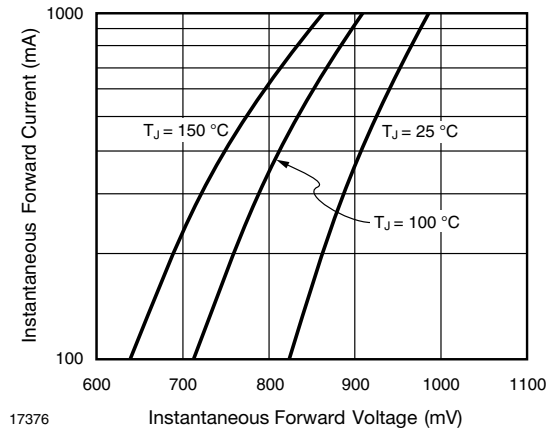


Fig. 2 - Typical Instantaneous Forward Characteristics

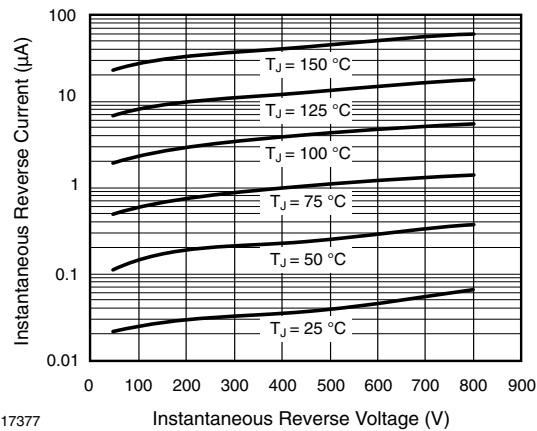
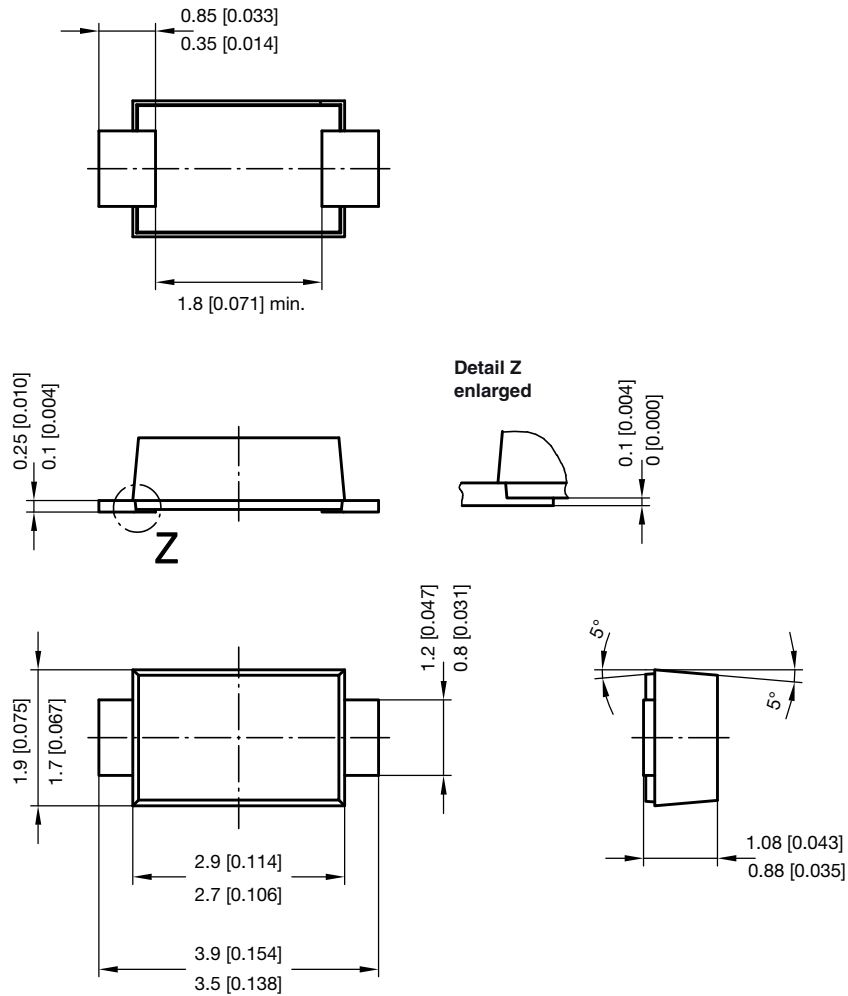


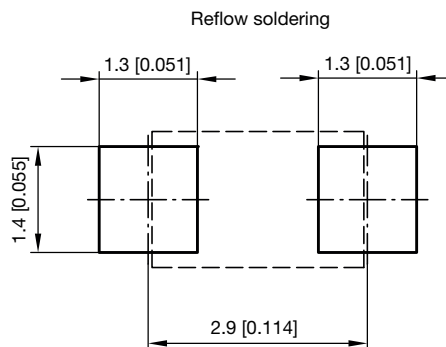
Fig. 3 - Typical Instantaneous Reverse Characteristics



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



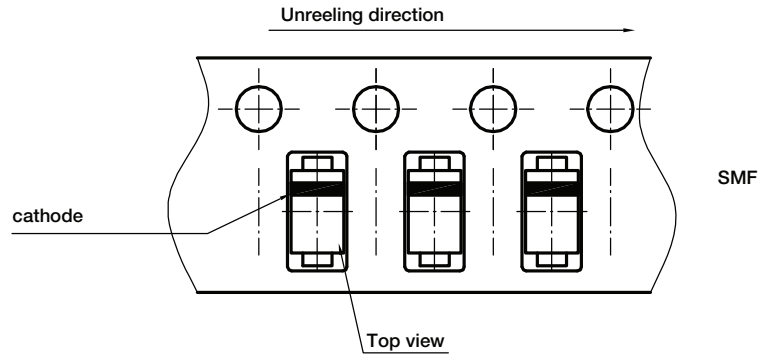
foot print recommendation:



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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