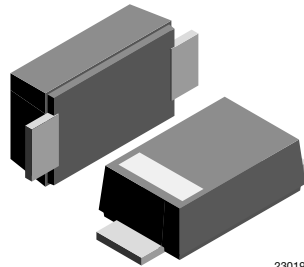


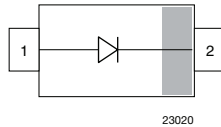
Standard Recovery Rectifier High Voltage Surface Mount

eSMP® Series



SMF (DO-219AB)

23019



23020

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-E3 - RoHS-compliant
Base P/N-GS - 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

LINKS TO ADDITIONAL RESOURCES



3D Models

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)

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

Circuit configuration: single

| PARTS TABLE | | | |
|-------------|--------------------------|---------|---------------|
| PART | ORDERING CODE | MARKING | REMARKS |
| S07B | S07B-E3-18 or S07B-E3-08 | Y0 | Tape and reel |
| | S07B-GS18 or S07B-GS08 | SB | |
| S07D | S07D-E3-18 or S07D-E3-08 | Y1 | Tape and reel |
| | S07D-GS18 or S07D-GS08 | SD | |
| S07G | S07G-E3-18 or S07G-E3-08 | Y2 | Tape and reel |
| | S07G-GS18 or S07G-GS08 | SG | |
| S07J | S07J-E3-18 or S07J-E3-08 | Y3 | Tape and reel |
| | S07J-GS18 or S07J-GS08 | SJ | |
| S07M | S07M-E3-18 or S07M-E3-08 | Y4 | Tape and reel |
| | S07M-GS18 or S07M-GS08 | SM | |



| ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified) | | | | | |
|---|--|------|--------------------|-------|------|
| PARAMETER | TEST CONDITION | PART | SYMBOL | VALUE | UNIT |
| Maximum repetitive peak reverse voltage | | S07B | V _{RRM} | 100 | V |
| | | S07D | V _{RRM} | 200 | V |
| | | S07G | V _{RRM} | 400 | V |
| | | S07J | V _{RRM} | 600 | V |
| | | S07M | V _{RRM} | 1000 | V |
| Maximum RMS voltage | | S07B | V _{RMS} | 70 | V |
| | | S07D | V _{RMS} | 140 | V |
| | | S07G | V _{RMS} | 280 | V |
| | | S07J | V _{RMS} | 420 | V |
| | | S07M | V _{RMS} | 700 | V |
| Maximum DC blocking voltage | | S07B | V _{DC} | 100 | V |
| | | S07D | V _{DC} | 200 | V |
| | | S07G | V _{DC} | 400 | V |
| | | S07J | V _{DC} | 600 | V |
| Maximum average forward rectified current | T _L = 110 °C ⁽¹⁾ | | I _{F(AV)} | 1.5 | A |
| | T _A = 65 °C ⁽¹⁾ | | I _{F(AV)} | 0.7 | A |
| Peak forward surge current 8.3 ms single half sine-wave | T _L = 25 °C | | I _{FSM} | 25 | A |

Note

⁽¹⁾ Averaged over any 20 ms period

| THERMAL CHARACTERISTICS (T _{amb} = 25 °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 | °C |

Note

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

| ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified) | | | | | | | |
|---|--|------|-----------------|------|------|------|------|
| PARAMETER | TEST CONDITION | PART | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| Instantaneous forward voltage | I _F = 1 A ⁽¹⁾ | S07B | V _F | | | 1.1 | V |
| | | S07D | V _F | | | 1.1 | V |
| | | S07G | V _F | | | 1.1 | V |
| | | S07J | V _F | | | 1.1 | V |
| | | S07M | V _F | | | 1.1 | V |
| Maximum DC reverse current at rated DC blocking voltage | T _A = 25 °C | S07B | I _R | | | 10 | μA |
| | | S07D | I _R | | | 10 | μA |
| | | S07G | I _R | | | 10 | μA |
| | | S07J | I _R | | | 10 | μA |
| | | S07M | I _R | | | 10 | μA |
| | T _A = 125 °C | S07B | I _R | | | 50 | μA |
| | | S07D | I _R | | | 50 | μA |
| | | S07G | I _R | | | 50 | μA |
| | | S07J | I _R | | | 50 | μA |
| | | S07M | I _R | | | 50 | μA |
| Reverse recovery time | I _F = 0.5 A, I _R = 1 A, I _{rr} = 0.25 A | S07B | t _{rr} | | | 1800 | ns |
| | | S07D | t _{rr} | | | 1800 | ns |
| | | S07G | t _{rr} | | | 1800 | ns |
| | | S07J | t _{rr} | | | 1800 | ns |
| | | S07M | t _{rr} | | | 1800 | ns |
| Typical capacitance | 4 V, 1 MHz | S07B | C _j | | 4 | | pF |
| | | S07D | C _j | | 4 | | pF |
| | | S07G | C _j | | 4 | | pF |
| | | S07J | C _j | | 4 | | pF |
| | | S07M | 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)

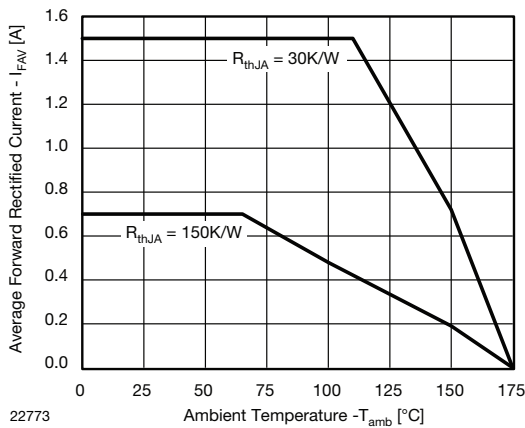


Fig. 1 - Forward Current Derating Curve

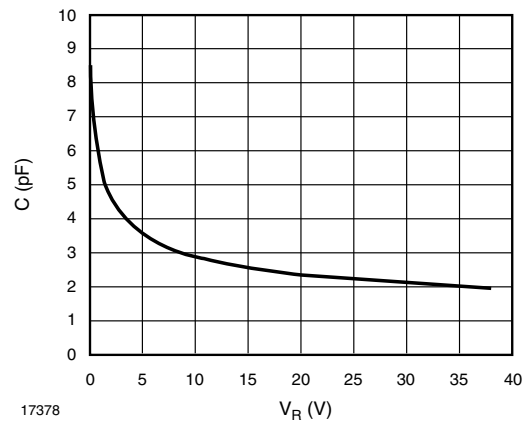


Fig. 4 - Capacitance vs. Reverse Voltage

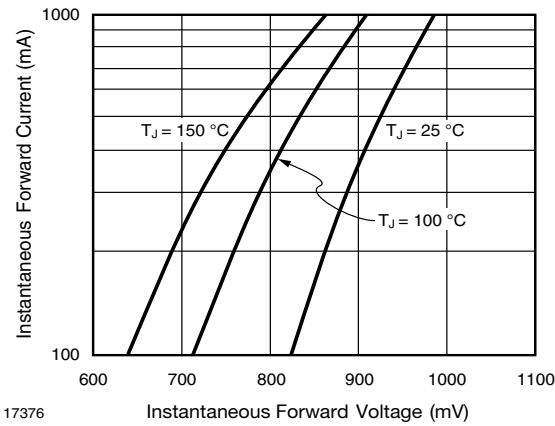


Fig. 2 - Typical Instantaneous Forward Characteristics

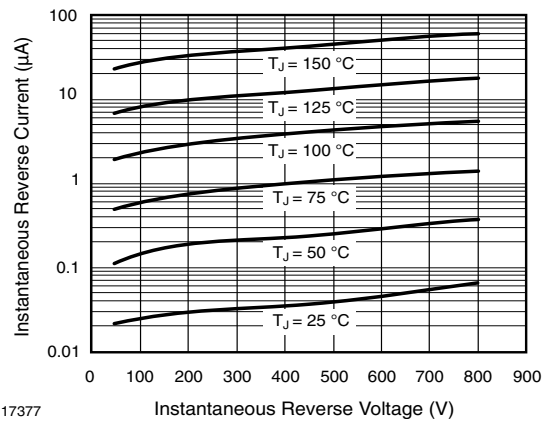
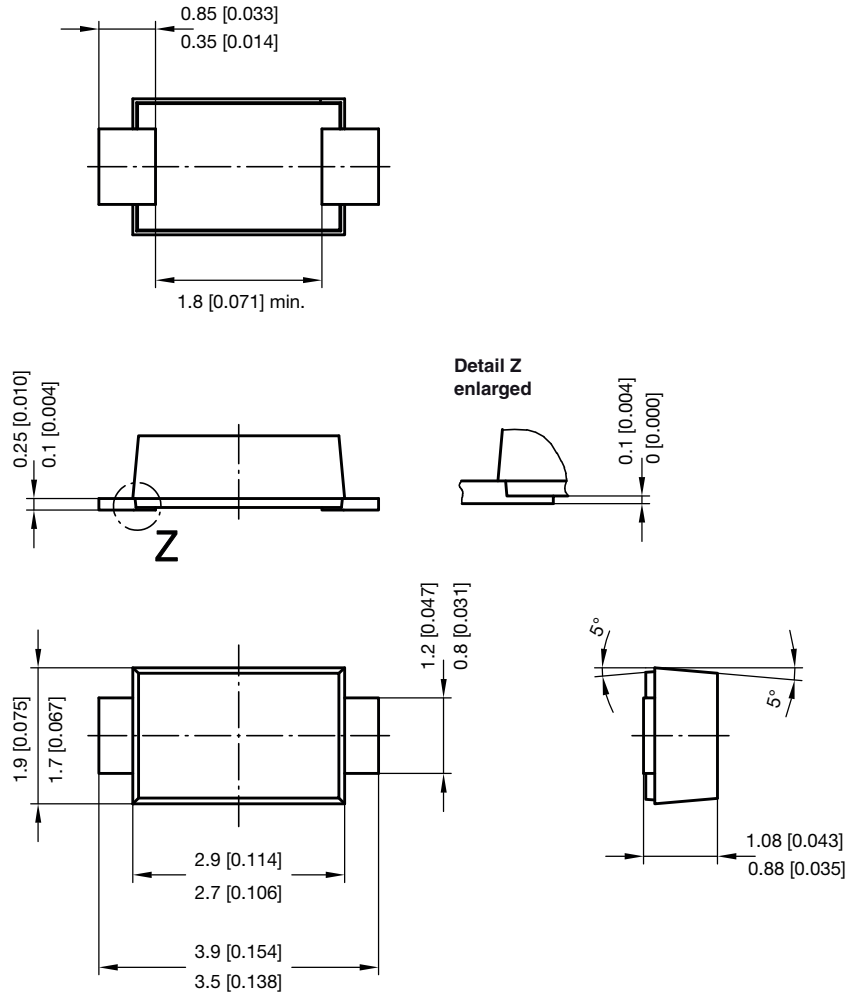


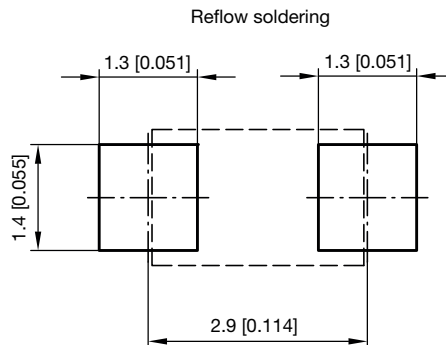
Fig. 3 - Typical Instantaneous Reverse Characteristics



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

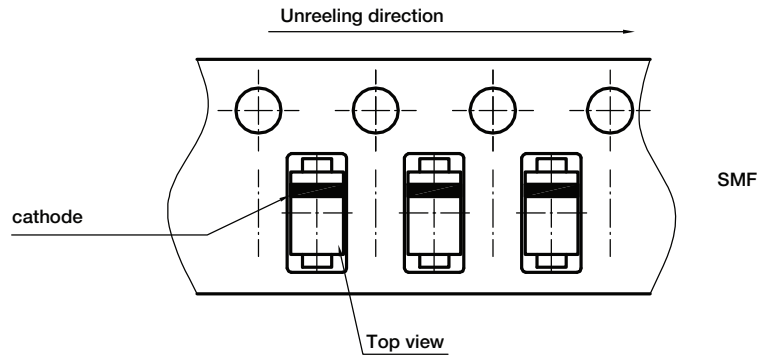


foot print recommendation:



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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