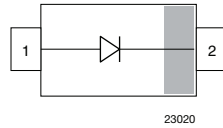
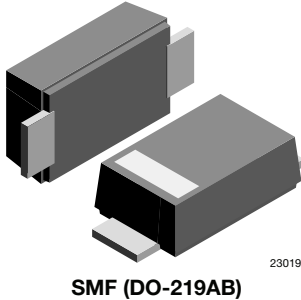


Fast Rectifier Surface-Mount

eSMP® Series



LINKS TO ADDITIONAL RESOURCES



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-M - halogen-free, RoHS-compliant
- Base P/N-HM3 - 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



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 |
| RS07B-M | RS07B-M3-18 or RS07B-M3-08 RS07B-HM3-18 or RS07B-HM3-08 | TB | Tape and reel |
| RS07D-M | RS07D-M3-18 or RS07D-M3-08 RS07D-HM3-18 or RS07D-HM3-08 | TD | Tape and reel |
| RS07G-M | RS07G-M3-18 or RS07G-M3-08 RS07G-HM3-18 or RS07G-HM3-08 | TG | Tape and reel |
| RS07J-M | RS07J-M3-18 or RS07J-M3-08 RS07J-HM3-18 or RS07J-HM3-08 | TJ | Tape and reel |
| RS07K-M | RS07K-M3-18 or RS07K-M3-08 RS07K-HM3-18 or RS07K-HM3-08 | TK | Tape and reel |



| ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified) | | | | | |
|---|------------------------|---------|--------------------|-------|------|
| PARAMETER | TEST CONDITION | PART | SYMBOL | VALUE | UNIT |
| Maximum repetitive peak reverse voltage | | RS07B-M | V _{RRM} | 100 | V |
| | | RS07D-M | V _{RRM} | 200 | V |
| | | RS07G-M | V _{RRM} | 400 | V |
| | | RS07J-M | V _{RRM} | 600 | V |
| | | RS07K-M | V _{RRM} | 800 | V |
| Maximum RMS voltage | | RS07B-M | V _{RMS} | 70 | V |
| | | RS07D-M | V _{RMS} | 140 | V |
| | | RS07G-M | V _{RMS} | 280 | V |
| | | RS07J-M | V _{RMS} | 420 | V |
| | | RS07K-M | V _{RMS} | 560 | V |
| Maximum DC blocking voltage | | RS07B-M | V _{DC} | 100 | V |
| | | RS07D-M | V _{DC} | 200 | V |
| | | RS07G-M | V _{DC} | 400 | V |
| | | RS07J-M | V _{DC} | 600 | V |
| | | RS07K-M | V _{DC} | 800 | V |
| Maximum average forward rectified current | T _L = 65 °C | | I _{F(AV)} | 1.4 | A |
| | T _A = 45 °C | | I _{F(AV)} | 0.5 | A |
| Peak forward surge current 8.3 ms half sine-wave | T _L = 25 °C | | I _{FSM} | 30 | A |

| THERMAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified) | | | | |
|--|----------------|-----------------------------------|------------|------|
| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
| Thermal resistance junction to lead | | R _{thJL} | 30 | K/W |
| 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 | °C |

Note

⁽¹⁾ Mounted on epoxy glass PCB 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 = 0.7 A ⁽¹⁾ | RS07B-M | V _F | | | 1.15 | V | |
| | | RS07D-M | V _F | | | 1.15 | V | |
| | | RS07G-M | V _F | | | 1.15 | V | |
| | | RS07J-M | V _F | | | 1.15 | V | |
| | | RS07K-M | V _F | | | 1.3 | V | |
| | | I _F = 1 A ⁽¹⁾ | | | | | 1.3 | V |
| Maximum DC reverse current at rated DC blocking voltage | T _A = 25 °C | RS07B-M | I _R | | | 10 | μA | |
| | | RS07D-M | I _R | | | 10 | μA | |
| | | RS07G-M | I _R | | | 10 | μA | |
| | | RS07J-M | I _R | | | 10 | μA | |
| | | RS07K-M | I _R | | | 2 | μA | |
| | T _A = 125 °C | RS07B-M | I _R | | | | 50 | μA |
| | | RS07D-M | I _R | | | | 50 | μA |
| | | RS07G-M | I _R | | | | 50 | μA |
| | | RS07J-M | I _R | | | | 50 | μA |
| | | RS07K-M | I _R | | | | 150 | μA |
| Reverse recovery time | I _F = 0.5 A, I _R = 1 A, I _{rr} = 0.25 A | RS07B-M | t _{rr} | | | 150 | ns | |
| | | RS07D-M | t _{rr} | | | 150 | ns | |
| | | RS07G-M | t _{rr} | | | 150 | ns | |
| | | RS07J-M | t _{rr} | | | 250 | ns | |
| | | RS07K-M | t _{rr} | | | 300 | ns | |
| Typical capacitance | 4 V, 1 MHz | RS07B-M | C _j | | 9 | | pF | |
| | | RS07D-M | C _j | | 9 | | pF | |
| | | RS07G-M | C _j | | 9 | | pF | |
| | | RS07J-M | C _j | | 9 | | pF | |
| | | RS07K-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)

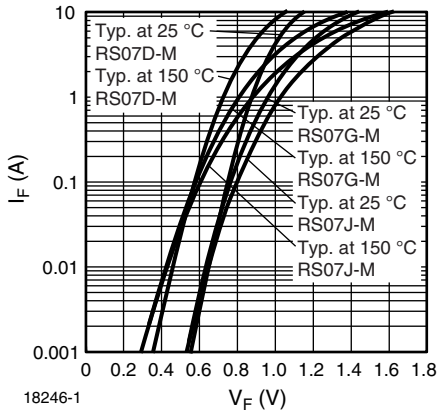


Fig. 1 - Typical Forward Characteristics

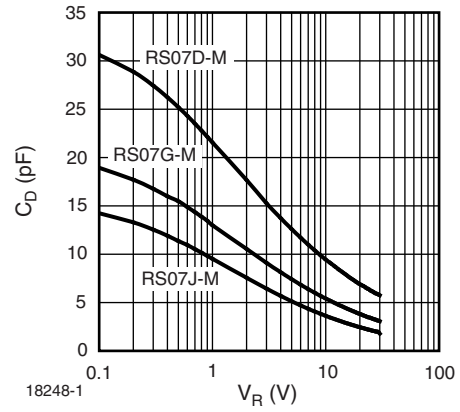


Fig. 4 - Typical Diode Capacitance vs. Reverse Voltage

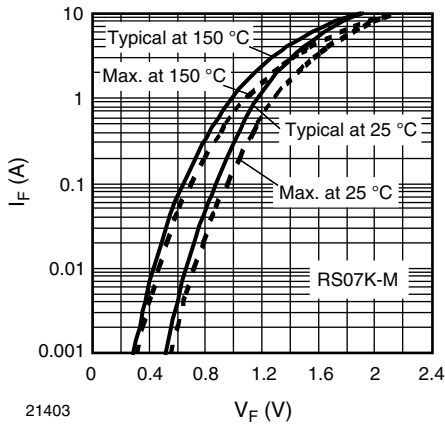


Fig. 2 - Typical Forward Characteristics

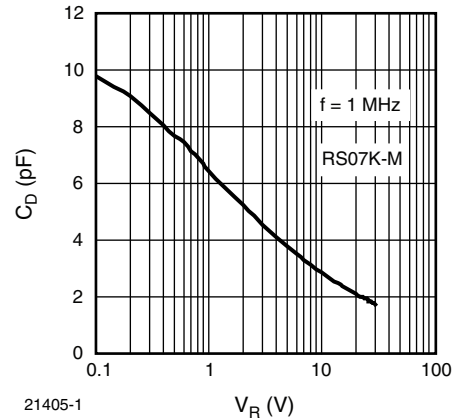


Fig. 5 - Typical Diode Capacitance vs. Reverse Voltage

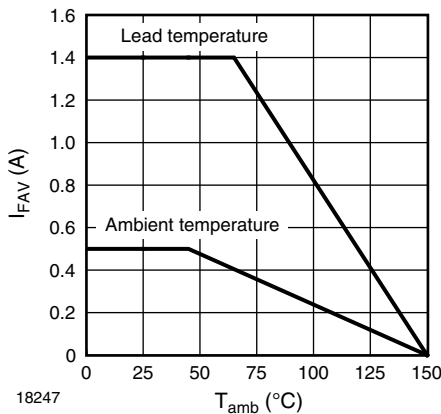


Fig. 3 - Forward Current Derating Curve

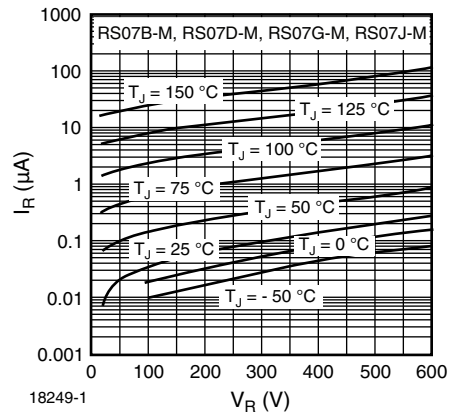


Fig. 6 - Typical Reverse Characteristics

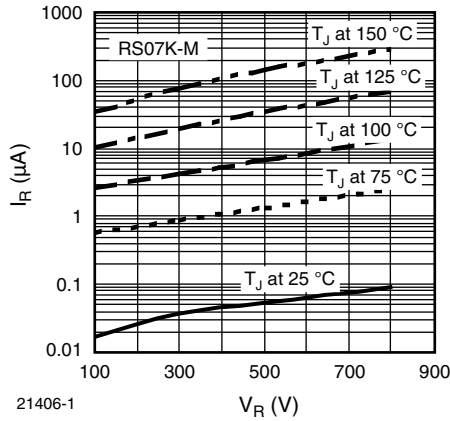
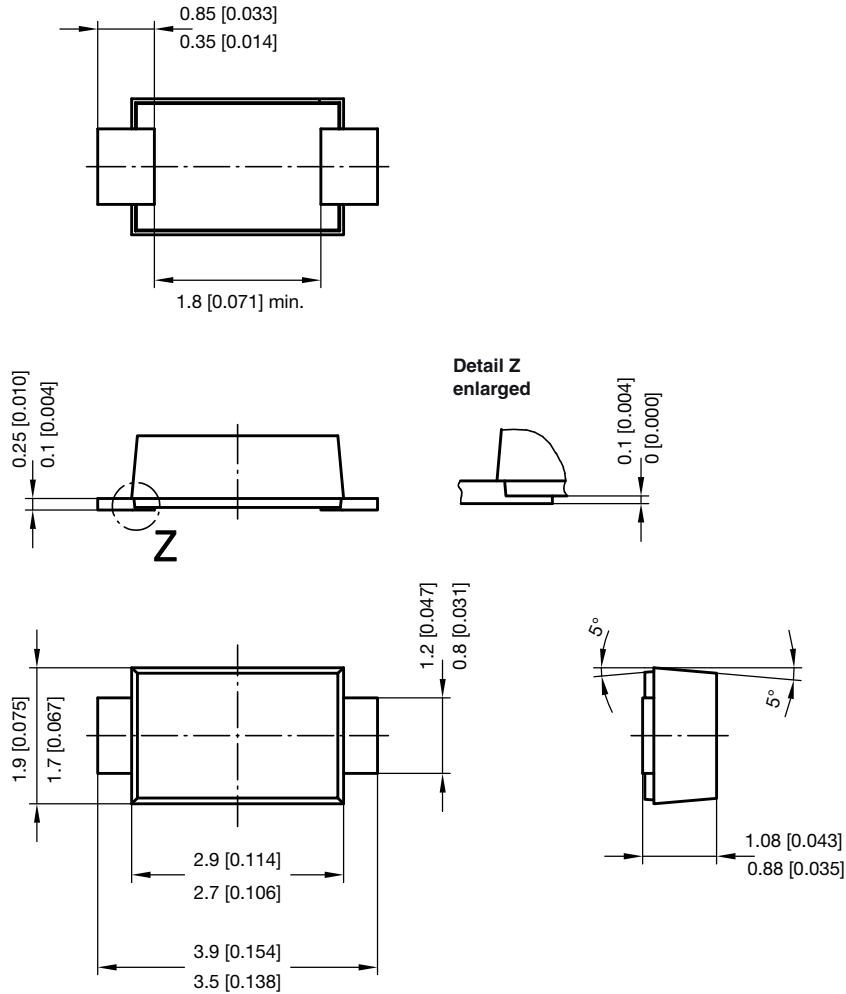


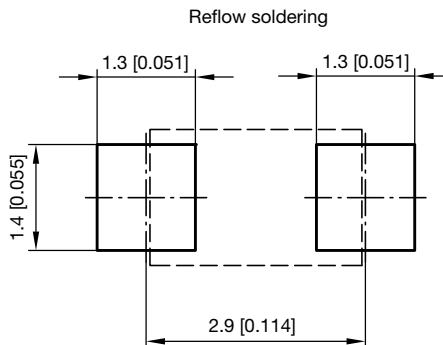
Fig. 7 - Typical Reverse Characteristics



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



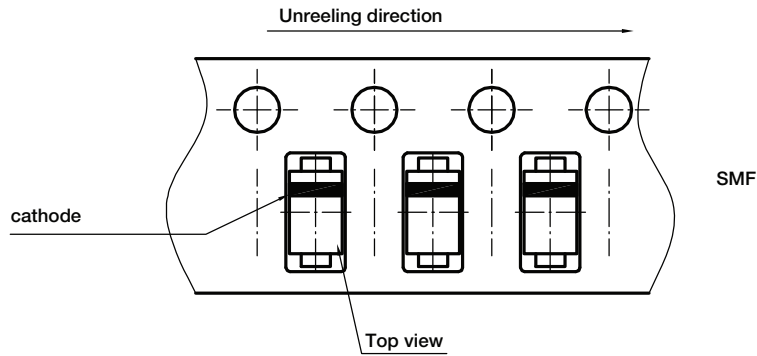
foot print recommendation:



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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