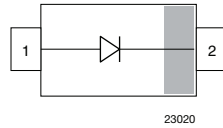
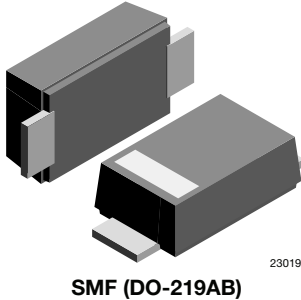




## Fast Rectifier Surface-Mount

### eSMP® Series



### 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](http://www.vishay.com/doc?99912)



### LINKS TO ADDITIONAL RESOURCES



### 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<br>RS07B-HM3-18 or RS07B-HM3-08 | TB      | Tape and reel |
| RS07D-M     | RS07D-M3-18 or RS07D-M3-08<br>RS07D-HM3-18 or RS07D-HM3-08 | TD      | Tape and reel |
| RS07G-M     | RS07G-M3-18 or RS07G-M3-08<br>RS07G-HM3-18 or RS07G-HM3-08 | TG      | Tape and reel |
| RS07J-M     | RS07J-M3-18 or RS07J-M3-08<br>RS07J-HM3-18 or RS07J-HM3-08 | TJ      | Tape and reel |
| RS07K-M     | RS07K-M3-18 or RS07K-M3-08<br>RS07K-HM3-18 or RS07K-HM3-08 | TK      | 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                                         |                        | RS07B-M | V <sub>RRM</sub>   | 100   | V    |
|                                                                                 |                        | RS07D-M | V <sub>RRM</sub>   | 200   | V    |
|                                                                                 |                        | RS07G-M | V <sub>RRM</sub>   | 400   | V    |
|                                                                                 |                        | RS07J-M | V <sub>RRM</sub>   | 600   | V    |
|                                                                                 |                        | RS07K-M | V <sub>RRM</sub>   | 800   | V    |
| Maximum RMS voltage                                                             |                        | RS07B-M | V <sub>RMS</sub>   | 70    | V    |
|                                                                                 |                        | RS07D-M | V <sub>RMS</sub>   | 140   | V    |
|                                                                                 |                        | RS07G-M | V <sub>RMS</sub>   | 280   | V    |
|                                                                                 |                        | RS07J-M | V <sub>RMS</sub>   | 420   | V    |
|                                                                                 |                        | RS07K-M | V <sub>RMS</sub>   | 560   | V    |
| Maximum DC blocking voltage                                                     |                        | RS07B-M | V <sub>DC</sub>    | 100   | V    |
|                                                                                 |                        | RS07D-M | V <sub>DC</sub>    | 200   | V    |
|                                                                                 |                        | RS07G-M | V <sub>DC</sub>    | 400   | V    |
|                                                                                 |                        | RS07J-M | V <sub>DC</sub>    | 600   | V    |
|                                                                                 |                        | RS07K-M | V <sub>DC</sub>    | 800   | V    |
| Maximum average forward rectified current                                       | T <sub>L</sub> = 65 °C |         | I <sub>F(AV)</sub> | 1.4   | A    |
|                                                                                 | T <sub>A</sub> = 45 °C |         | I <sub>F(AV)</sub> | 0.5   | A    |
| Peak forward surge current 8.3 ms half sine-wave                                | T <sub>L</sub> = 25 °C |         | I <sub>FSM</sub>   | 30    | A    |

| THERMAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified) |                |                                   |            |      |
|--------------------------------------------------------------------------------|----------------|-----------------------------------|------------|------|
| PARAMETER                                                                      | TEST CONDITION | SYMBOL                            | VALUE      | UNIT |
| Thermal resistance junction to lead                                            |                | R <sub>thJL</sub>                 | 30         | K/W  |
| Thermal resistance junction to ambient air <sup>(1)</sup>                      |                | R <sub>thJA</sub>                 | 180        | K/W  |
| Operating junction and storage temperature range                               |                | T <sub>j</sub> , T <sub>stg</sub> | -55 to 150 | °C   |

**Note**

<sup>(1)</sup> Mounted on epoxy glass PCB with 3 mm x 3 mm Cu pads (≥ 40 μm thick)

| ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified) |                                                                        |                                     |                 |      |      |      |      |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------|-------------------------------------|-----------------|------|------|------|------|
| PARAMETER                                                                         | TEST CONDITION                                                         | PART                                | SYMBOL          | MIN. | TYP. | MAX. | UNIT |
| Instantaneous forward voltage                                                     | I <sub>F</sub> = 0.7 A <sup>(1)</sup>                                  | RS07B-M                             | V <sub>F</sub>  |      |      | 1.15 | V    |
|                                                                                   |                                                                        | RS07D-M                             | V <sub>F</sub>  |      |      | 1.15 | V    |
|                                                                                   |                                                                        | RS07G-M                             | V <sub>F</sub>  |      |      | 1.15 | V    |
|                                                                                   |                                                                        | RS07J-M                             | V <sub>F</sub>  |      |      | 1.15 | V    |
|                                                                                   |                                                                        | RS07K-M                             | V <sub>F</sub>  |      |      | 1.3  | V    |
|                                                                                   |                                                                        | I <sub>F</sub> = 1 A <sup>(1)</sup> |                 |      |      |      |      |
| Maximum DC reverse current at rated DC blocking voltage                           | T <sub>A</sub> = 25 °C                                                 | RS07B-M                             | I <sub>R</sub>  |      |      | 10   | μA   |
|                                                                                   |                                                                        | RS07D-M                             | I <sub>R</sub>  |      |      | 10   | μA   |
|                                                                                   |                                                                        | RS07G-M                             | I <sub>R</sub>  |      |      | 10   | μA   |
|                                                                                   |                                                                        | RS07J-M                             | I <sub>R</sub>  |      |      | 10   | μA   |
|                                                                                   |                                                                        | RS07K-M                             | I <sub>R</sub>  |      |      | 2    | μA   |
|                                                                                   | T <sub>A</sub> = 125 °C                                                | RS07B-M                             | I <sub>R</sub>  |      |      | 50   | μA   |
|                                                                                   |                                                                        | RS07D-M                             | I <sub>R</sub>  |      |      | 50   | μA   |
|                                                                                   |                                                                        | RS07G-M                             | I <sub>R</sub>  |      |      | 50   | μA   |
|                                                                                   |                                                                        | RS07J-M                             | I <sub>R</sub>  |      |      | 50   | μA   |
|                                                                                   |                                                                        | RS07K-M                             | I <sub>R</sub>  |      |      | 150  | μA   |
| Reverse recovery time                                                             | I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1 A, I <sub>rr</sub> = 0.25 A | RS07B-M                             | t <sub>rr</sub> |      |      | 150  | ns   |
|                                                                                   |                                                                        | RS07D-M                             | t <sub>rr</sub> |      |      | 150  | ns   |
|                                                                                   |                                                                        | RS07G-M                             | t <sub>rr</sub> |      |      | 150  | ns   |
|                                                                                   |                                                                        | RS07J-M                             | t <sub>rr</sub> |      |      | 250  | ns   |
|                                                                                   |                                                                        | RS07K-M                             | t <sub>rr</sub> |      |      | 300  | ns   |
| Typical capacitance                                                               | 4 V, 1 MHz                                                             | RS07B-M                             | C <sub>j</sub>  |      | 9    |      | pF   |
|                                                                                   |                                                                        | RS07D-M                             | C <sub>j</sub>  |      | 9    |      | pF   |
|                                                                                   |                                                                        | RS07G-M                             | C <sub>j</sub>  |      | 9    |      | pF   |
|                                                                                   |                                                                        | RS07J-M                             | C <sub>j</sub>  |      | 9    |      | pF   |
|                                                                                   |                                                                        | RS07K-M                             | C <sub>j</sub>  |      | 4    |      | pF   |

**Note**

<sup>(1)</sup> Pulse test: 300 μs pulse width, 1 % duty cycle

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

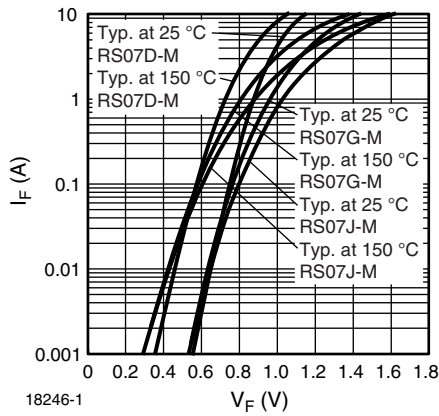


Fig. 1 - Typical Forward Characteristics

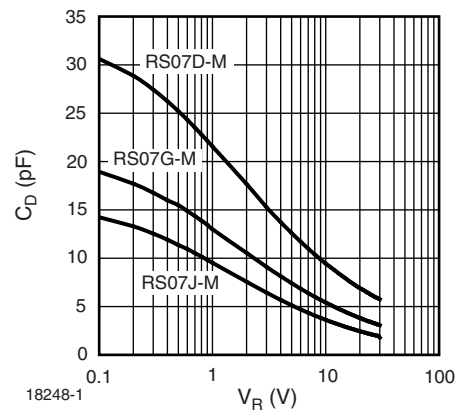


Fig. 4 - Typical Diode Capacitance vs. Reverse Voltage

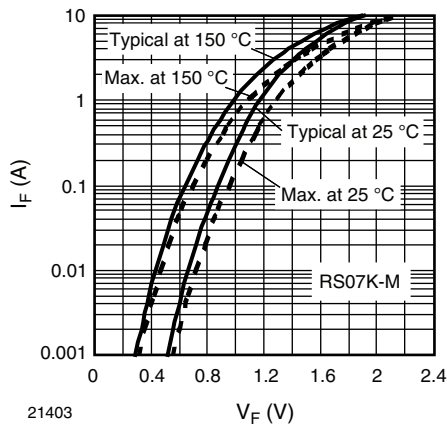


Fig. 2 - Typical Forward Characteristics

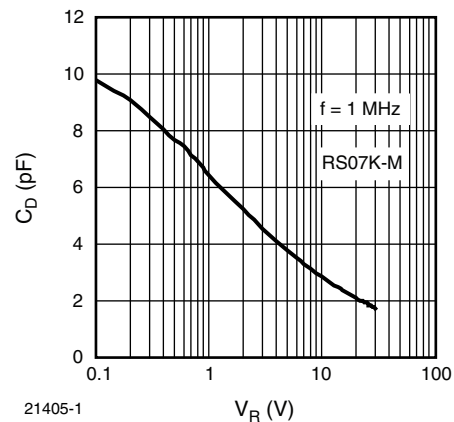


Fig. 5 - Typical Diode Capacitance vs. Reverse Voltage

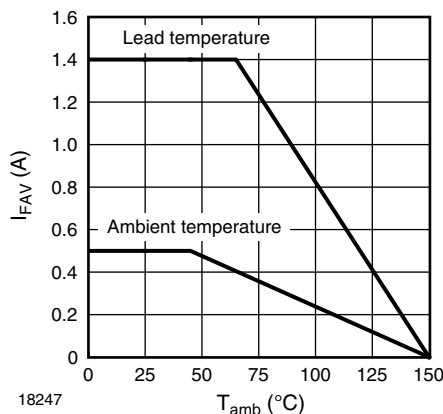


Fig. 3 - Forward Current Derating Curve

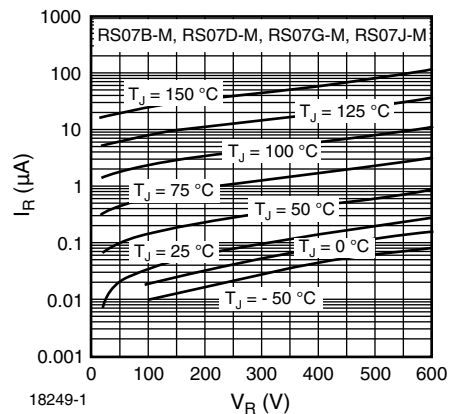


Fig. 6 - Typical Reverse Characteristics

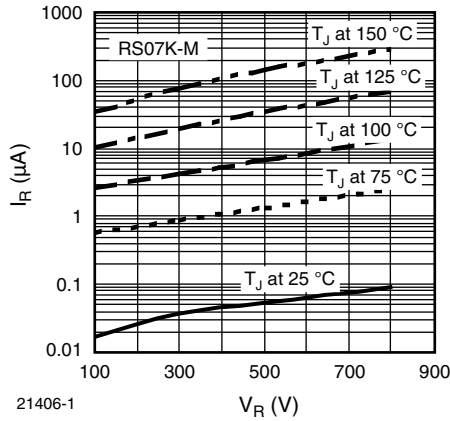
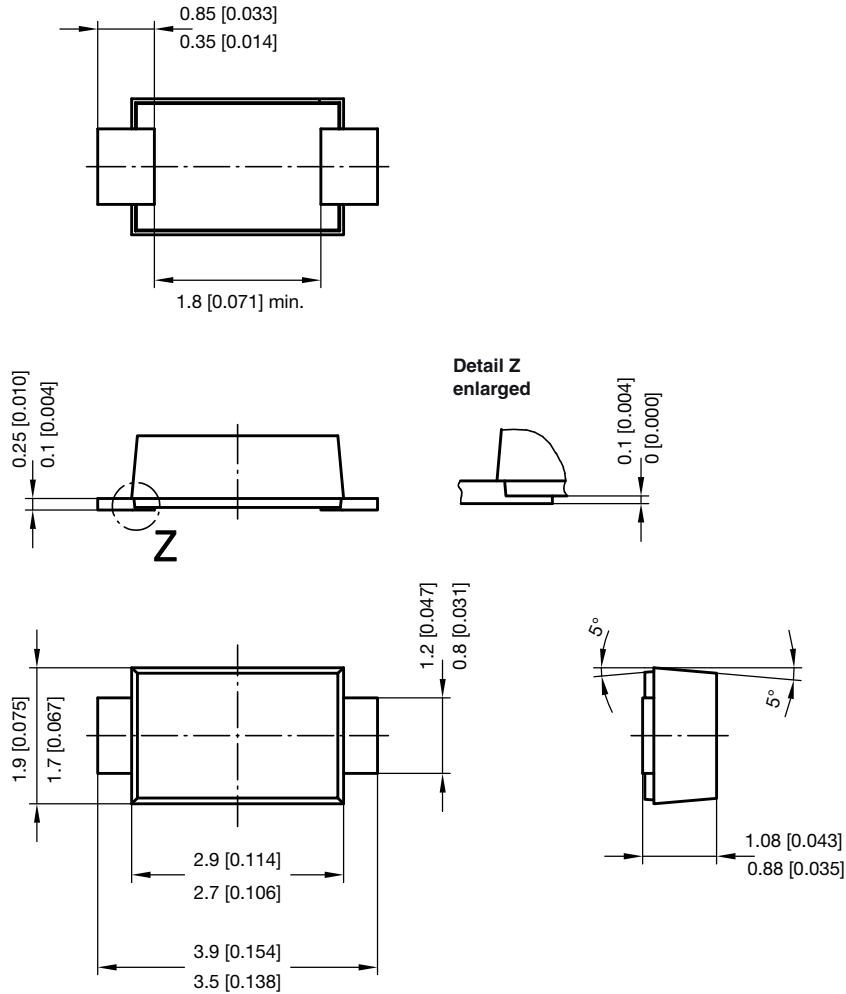


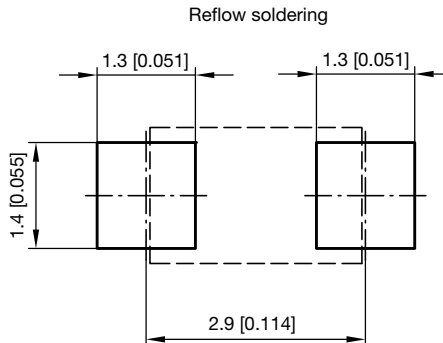
Fig. 7 - Typical Reverse Characteristics



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



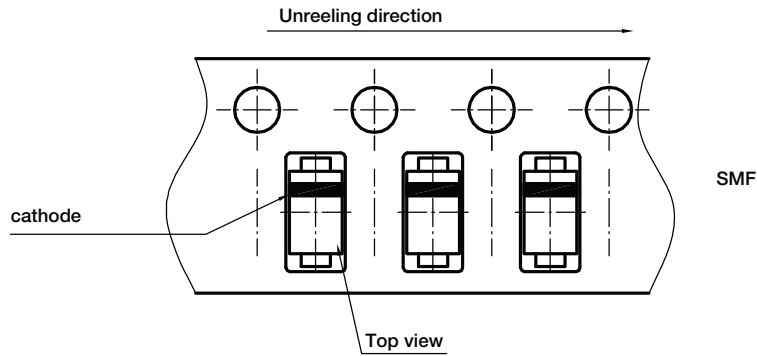
foot print recommendation:



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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