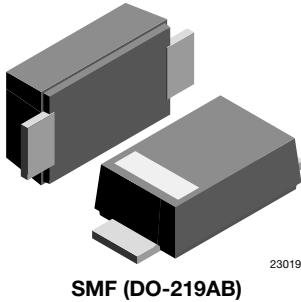
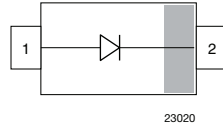


## Fast Rectifier Surface-Mount

### eSMP® Series


**SMF (DO-219AB)**


### 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
- 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)


**RoHS**  
COMPLIANT

### LINKS TO ADDITIONAL RESOURCES



### 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       |
|-------|--------------------------|---------|---------------|
| RS07B | RS07B-GS18 or RS07B-GS08 | RB      | Tape and reel |
| RS07D | RS07D-GS18 or RS07D-GS08 | RD      | Tape and reel |
| RS07G | RS07G-GS18 or RS07G-GS08 | RG      | Tape and reel |
| RS07J | RS07J-GS18 or RS07J-GS08 | RJ      | Tape and reel |
| RS07K | RS07K-GS18 or RS07K-GS08 | RK      | 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          |                      | RS07B | $V_{RRM}$   | 100   | V    |
|  |                      | RS07D | $V_{RRM}$   | 200   | V    |
|  |                      | RS07G | $V_{RRM}$   | 400   | V    |
|  |                      | RS07J | $V_{RRM}$   | 600   | V    |
|  |                      | RS07K | $V_{RRM}$   | 800   | V    |
| Maximum RMS voltage                              |                      | RS07B | $V_{RMS}$   | 70    | V    |
|  |                      | RS07D | $V_{RMS}$   | 140   | V    |
|  |                      | RS07G | $V_{RMS}$   | 280   | V    |
|  |                      | RS07J | $V_{RMS}$   | 420   | V    |
|  |                      | RS07K | $V_{RMS}$   | 560   | V    |
| Maximum DC blocking voltage                      |                      | RS07B | $V_{DC}$    | 100   | V    |
|  |                      | RS07D | $V_{DC}$    | 200   | V    |
|  |                      | RS07G | $V_{DC}$    | 400   | V    |
|  |                      | RS07J | $V_{DC}$    | 600   | V    |
| Maximum average forward rectified current        | $T_L = 65\text{ °C}$ |       | $I_{F(AV)}$ | 1.4   | A    |
|  | $T_A = 45\text{ °C}$ |       | $I_{F(AV)}$ | 0.5   | A    |
| Peak forward surge current 8.3 ms half sine-wave | $T_L = 25\text{ °C}$ |       | $I_{FSM}$   | 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 | V <sub>F</sub>  |      |      | 1.15 | V    |
|   |  | RS07D | V <sub>F</sub>  |      |      | 1.15 | V    |
|   |  | RS07G | V <sub>F</sub>  |      |      | 1.15 | V    |
|   |  | RS07J | V <sub>F</sub>  |      |      | 1.15 | V    |
|   |  | RS07K | V <sub>F</sub>  |      |      | 1.3  | V    |
| Maximum DC reverse current at rated DC blocking voltage                           | T <sub>A</sub> = 25 °C   | RS07B | I <sub>R</sub>  |      |      | 10   | μA   |
|   |  | RS07D | I <sub>R</sub>  |      |      | 10   | μA   |
|   |  | RS07G | I <sub>R</sub>  |      |      | 10   | μA   |
|   |  | RS07J | I <sub>R</sub>  |      |      | 10   | μA   |
|   |  | RS07K | I <sub>R</sub>  |      |      | 2    | μA   |
|   | T <sub>A</sub> = 125 °C  | RS07B | I <sub>R</sub>  |      |      | 50   | μA   |
|   |  | RS07D | I <sub>R</sub>  |      |      | 50   | μA   |
|   |  | RS07G | I <sub>R</sub>  |      |      | 50   | μA   |
|   |  | RS07J | I <sub>R</sub>  |      |      | 50   | μA   |
|   |  | RS07K | 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 | t <sub>rr</sub> |      |      | 150  | ns   |
|   |  | RS07D | t <sub>rr</sub> |      |      | 150  | ns   |
|   |  | RS07G | t <sub>rr</sub> |      |      | 150  | ns   |
|   |  | RS07J | t <sub>rr</sub> |      |      | 250  | ns   |
|   |  | RS07K | t <sub>rr</sub> |      |      | 300  | ns   |
| Typical capacitance   | 4 V, 1 MHz   | RS07B | C <sub>j</sub>  |      | 9    |      | pF   |
|   |  | RS07D | C <sub>j</sub>  |      | 9    |      | pF   |
|   |  | RS07G | C <sub>j</sub>  |      | 9    |      | pF   |
|   |  | RS07J | C <sub>j</sub>  |      | 9    |      | pF   |
|   |  | RS07K | C <sub>j</sub>  |      | 4    |      | pF   |

**Note**

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

**TYPICAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)**

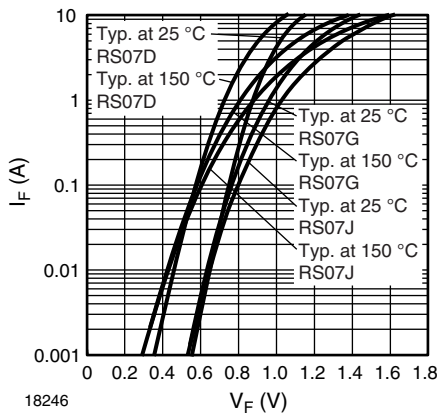


Fig. 1 - Typical Forward Characteristics

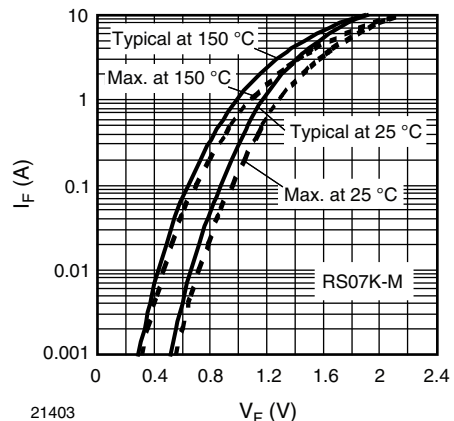


Fig. 2 - Typical Forward Characteristics

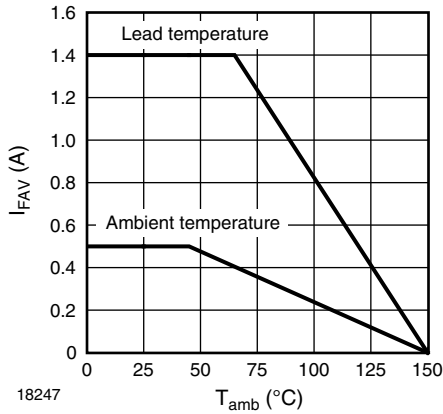


Fig. 3 - Forward Current Derating Curve

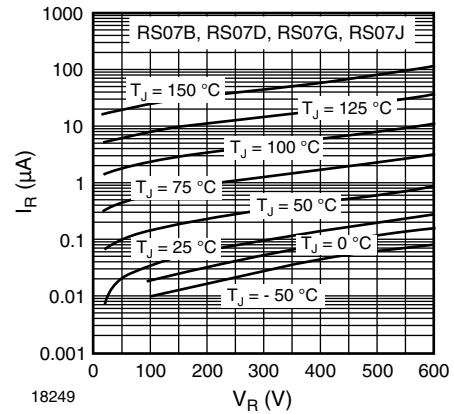


Fig. 6 - Typical Reverse Characteristics

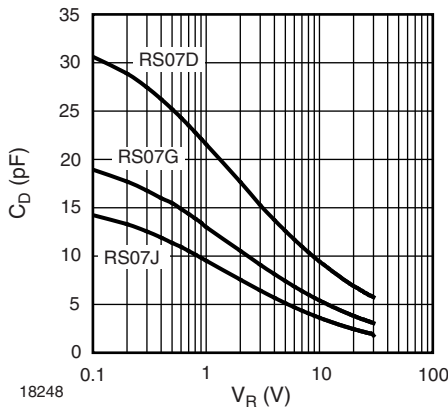


Fig. 4 - Typical Diode Capacitance vs. Reverse Voltage

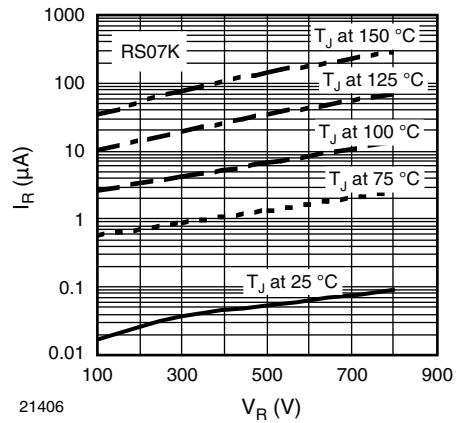


Fig. 7 - Typical Reverse Characteristics

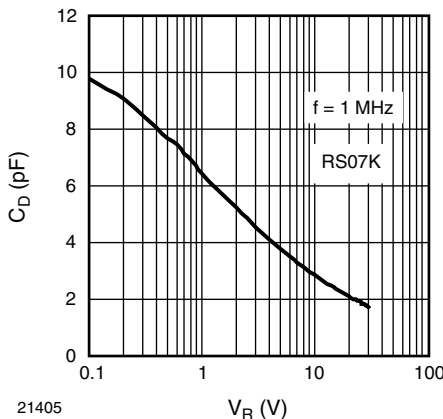
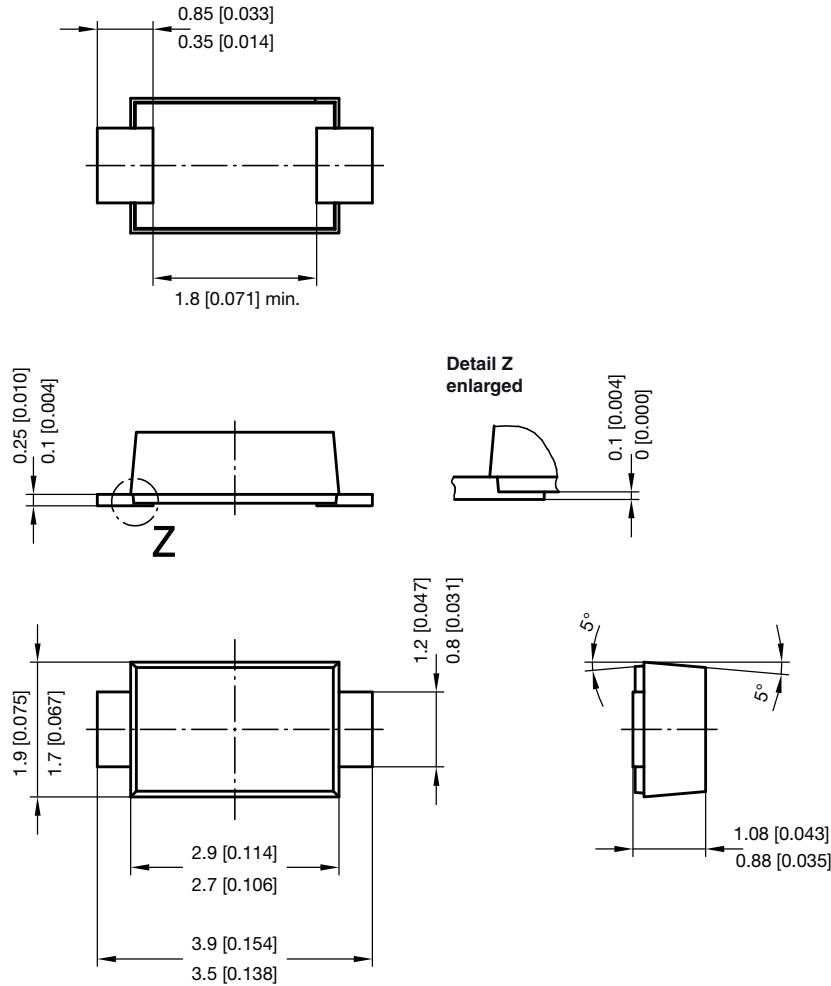


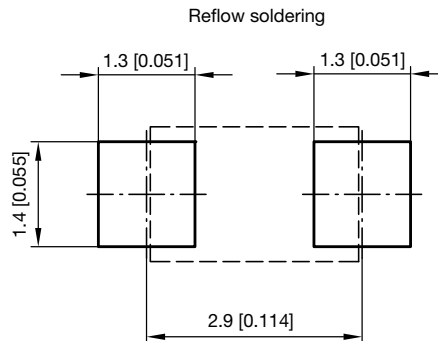
Fig. 5 - Typical Diode Capacitance vs. Reverse Voltage



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



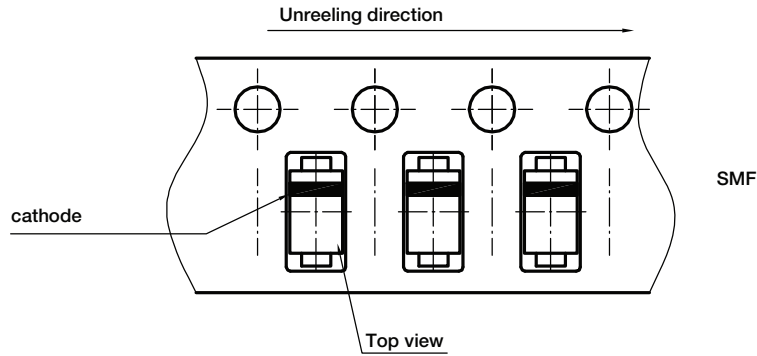
foot print recommendation:



Created - Date: 15. February 2005  
 Rev. 6 - Date: 24.Feb.2021  
 Document no.: S8-V-3915.01-001 (4)  
 22989



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



Document no.: S8-V-3717.02-003 (4)  
Created - Date: 09. Feb. 2010  
22670



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