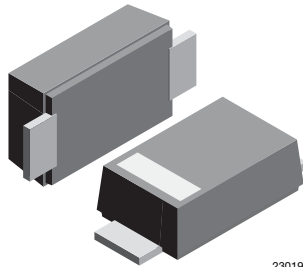
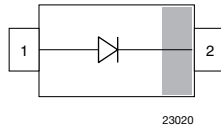


Fast Rectifier Surface Mount

eSMP® Series



SMF (DO-219AB)



23020

DESIGN SUPPORT TOOLS

[click logo to get started](#)


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 available
- Base P/N-M - halogen-free, RoHS-compliant
- Base P/N-HM3 - halogen-free, RoHS-compliant, and AEC-Q101 qualified (available on request)
- 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-M-18 or RS07B-M-08 | TB | Tape and reel |
| RS07D-M | RS07D-M-18 or RS07D-M-08 | TD | Tape and reel |
| RS07G-M | RS07G-M-18 or RS07G-M-08 | TG | Tape and reel |
| RS07J-M | RS07J-M-18 or RS07J-M-08 | TJ | Tape and reel |
| RS07K-M | RS07K-M-18 or RS07K-M-08 | TK | Tape and reel |

| 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 | | 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 | $T_L = 65\text{ }^{\circ}\text{C}$ | | $I_{F(AV)}$ | 1.4 | A |
| | $T_A = 45\text{ }^{\circ}\text{C}$ | | $I_{F(AV)}$ | 0.5 | A |
| Peak forward surge current 8.3 ms half sine-wave | $T_L = 25\text{ }^{\circ}\text{C}$ | | I_{FSM} | 30 | A |



| THERMAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, 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 | $^{\circ}\text{C}$ |

Note

⁽¹⁾ Mounted on epoxy glass PCB 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 | $I_F = 0.7\text{ A}$ ⁽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 |
| | $I_F = 1\text{ A}$ ⁽¹⁾ | RS07K-M | V_F | | | 1.3 | V |
| Maximum DC reverse current at rated DC blocking voltage | $T_A = 25\text{ }^{\circ}\text{C}$ | 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 |
| | $T_A = 125\text{ }^{\circ}\text{C}$ | RS07B-M | I_R | | | 50 | μA |
| | | RS07D-M | I_R | | | 50 | μA |
| | | RS07K-M | I_R | | | 150 | μA |
| Reverse recovery time | $I_F = 0.5\text{ A}, I_R = 1\text{ A}, I_{rr} = 0.25\text{ A}$ | 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)

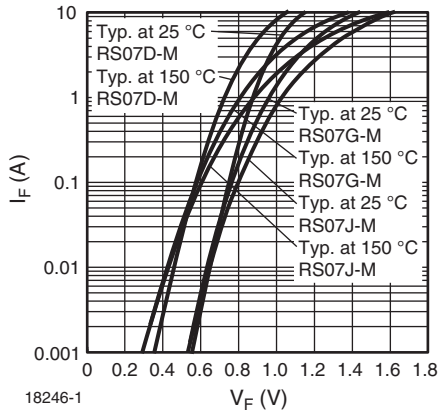


Fig. 1 - Typical Forward Characteristics

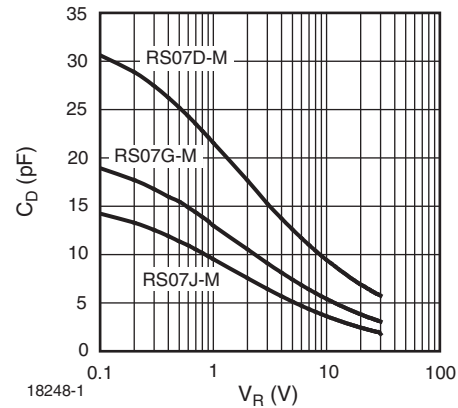


Fig. 4 - Typical Diode Capacitance vs. Reverse Voltage

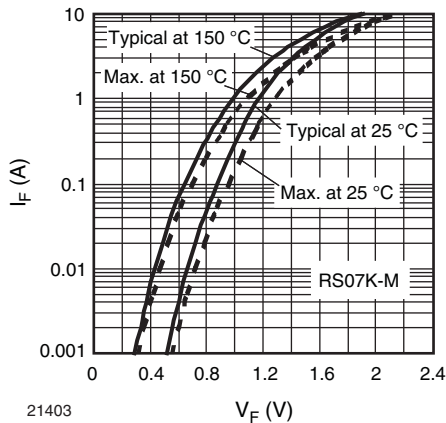


Fig. 2 - Typical Forward Characteristics

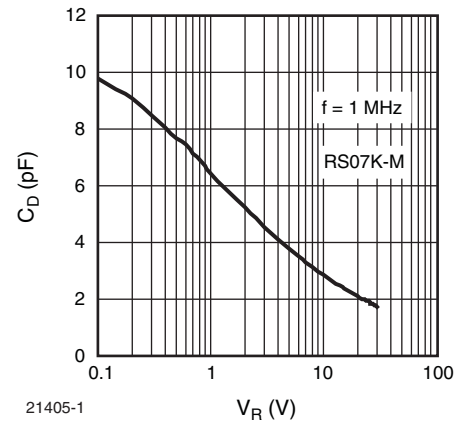


Fig. 5 - Typical Diode Capacitance vs. Reverse Voltage

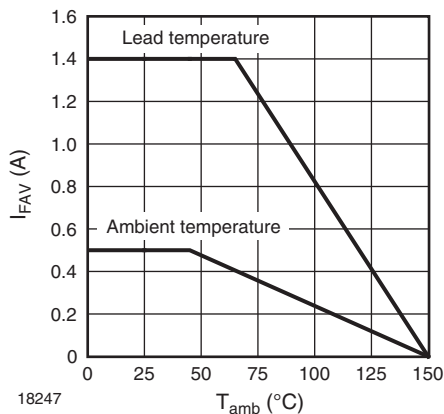


Fig. 3 - Forward Current Derating Curve

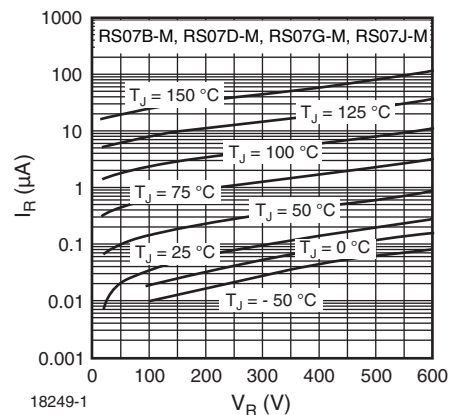


Fig. 6 - Typical Reverse Characteristics

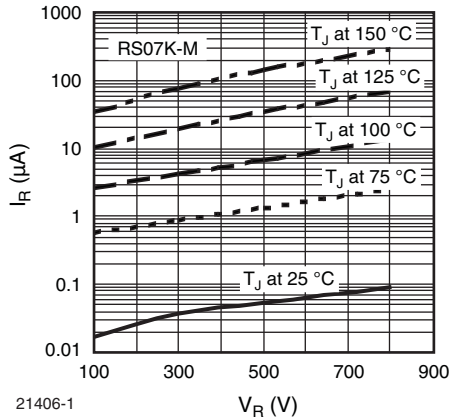
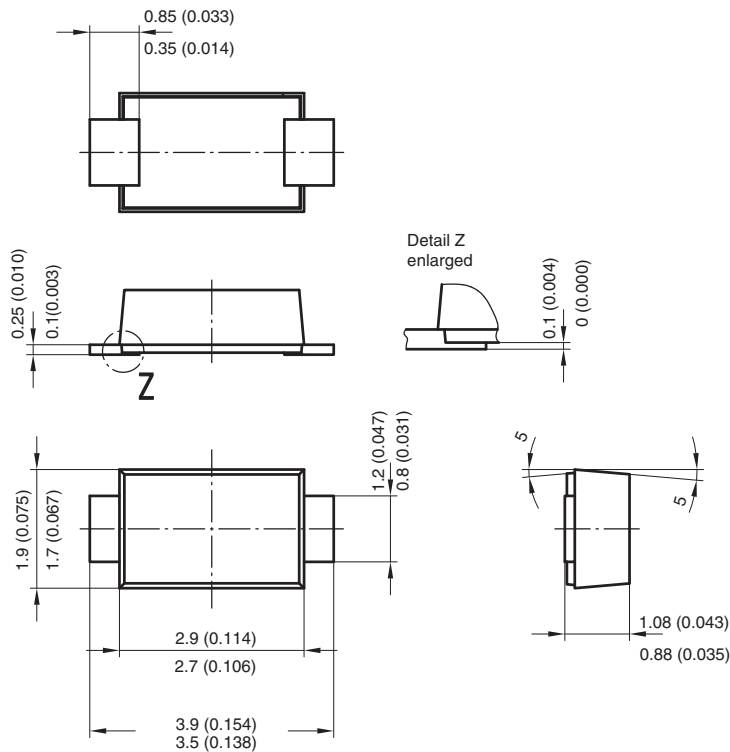
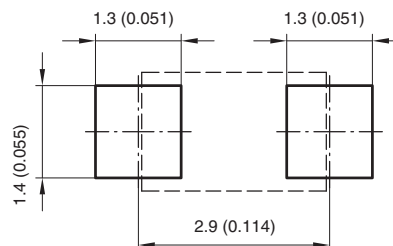


Fig. 7 - Typical Reverse Characteristics

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



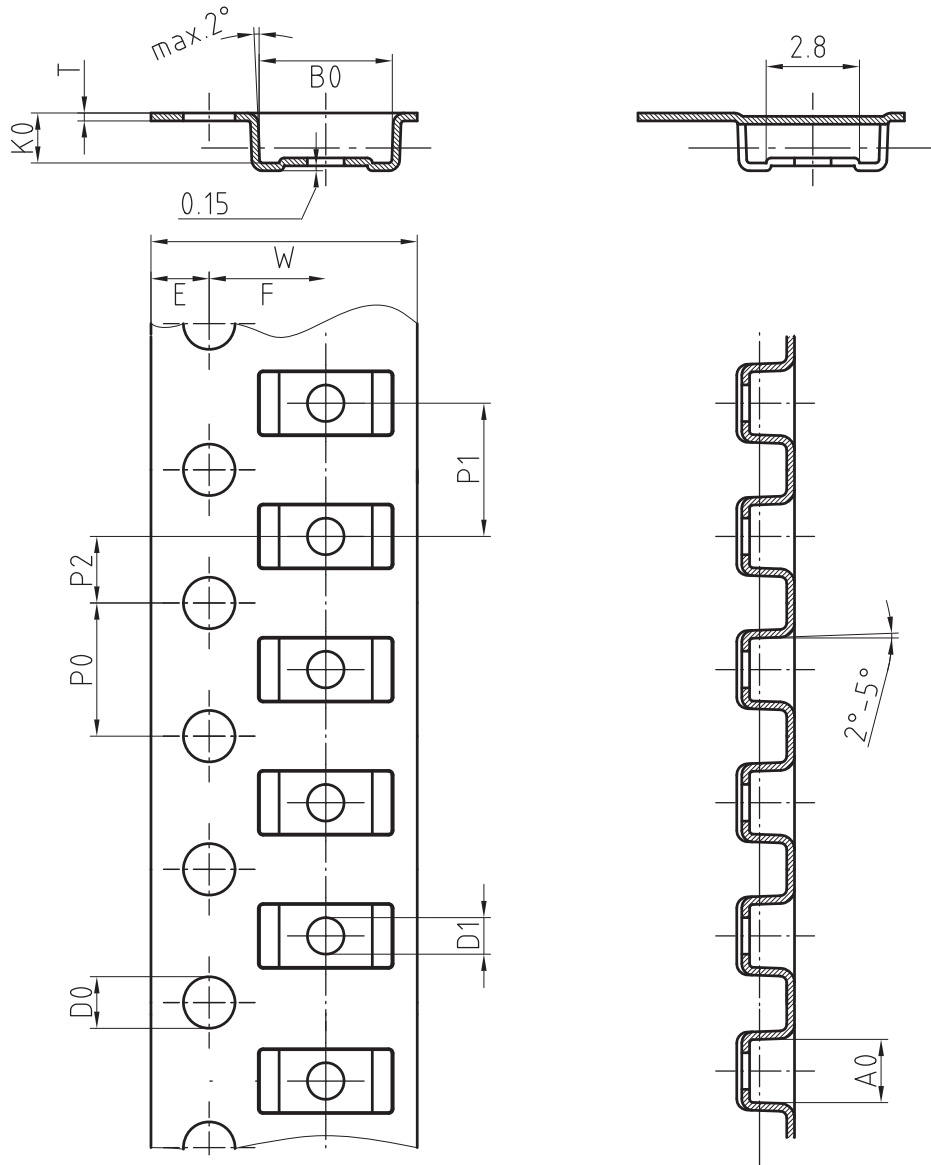
Foot print recommendation:



Created - Date: 15. February 2005
 Rev. 3 - Date: 13. March 2007
 Document no.: S8-V-3915.01-001 (4)
 17247



BLISTER TAPE DIMENSIONS in millimeters: **SMF (DO-219AB)**

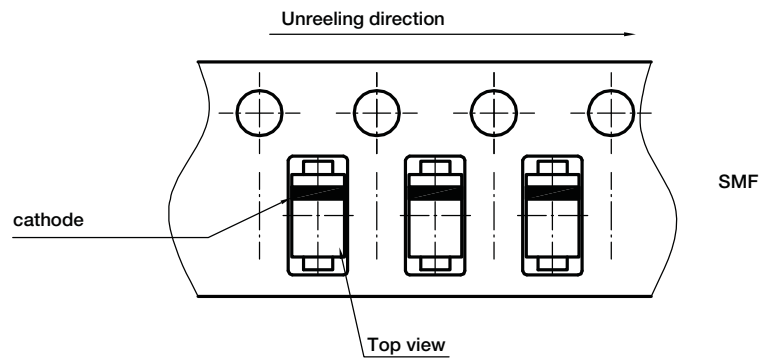


| Mat: | A0 | B0 | K0 | W | T | P0 | P2 | P1 | D0 | D1 | E | F |
|------|-----|-----|-----|-----|-------|-----|-----|-----|-----|----|------|-----|
| PS | 1.9 | 4.0 | 1.5 | 8.0 | 0.235 | 4.0 | 2.0 | 4.0 | 1.5 | 1 | 1.75 | 3.5 |

Document-No.: S8-V-3717.02-001 (3)

18513

ORIENTATION IN CARRIER TAPE - SMF



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



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