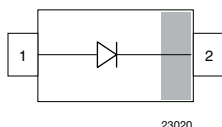
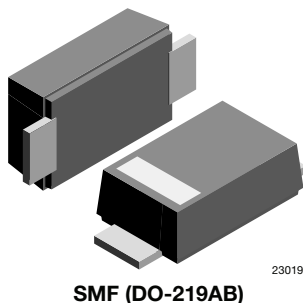


Ultrafast Rectifier Surface-Mount

eSMP® Series



FEATURES

- For surface mounted applications
- Low profile package
- Ideal for automated placement
- Glass passivated pellet chip junction
- 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


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 |
|-------|--------------------------|---------|---------------|
| ES07B | ES07B-GS18 or ES07B-GS08 | EB | Tape and reel |
| ES07D | ES07D-GS18 or ES07D-GS08 | ED | 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 | | ES07B | V _{RRM} | 100 | V |
| | | ES07D | V _{RRM} | 200 | V |
| Maximum RMS voltage | | ES07B | V _{RMS} | 70 | V |
| | | ES07D | V _{RMS} | 140 | V |
| Maximum DC blocking voltage | | ES07B | V _{DC} | 100 | V |
| | | ES07D | V _{DC} | 200 | V |
| Maximum average forward rectified current | T _L = 109 °C | | I _{F(AV)} | 1.2 | A |
| | T _A = 65 °C ⁽¹⁾ | | I _{F(AV)} | 0.5 | A |
| Peak forward surge current 8.3 ms single half sine-wave | T _L = 25 °C | | I _{FSM} | 30 | A |

Note

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

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} | -55 to 150 | °C |

Note

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

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

| PARAMETER | TEST CONDITION | PART | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|---|--|-------|----------|------|------|------|---------------|
| Instantaneous forward voltage | $I_F = 1\text{ A}$ ⁽¹⁾ | ES07B | V_F | | | 0.98 | V |
| | | ES07D | V_F | | | 0.98 | V |
| Maximum DC reverse current at rated DC blocking voltage | $T_A = 25\text{ }^{\circ}\text{C}$ | ES07B | I_R | | | 10 | μA |
| | | ES07D | I_R | | | 10 | μA |
| | $T_A = 100\text{ }^{\circ}\text{C}$ | ES07B | I_R | | | 50 | μA |
| | | ES07D | I_R | | | 50 | μA |
| Reverse recovery time | $I_F = 0.5\text{ A}$, $I_R = 1\text{ A}$, $I_{rr} = 0.25\text{ A}$ | ES07B | t_{rr} | | | 25 | ns |
| | | ES07D | t_{rr} | | | 25 | ns |
| Typical capacitance | 4 V, 1 MHz | ES07B | C_j | | 4 | | pF |
| | | ES07D | C_j | | 4 | | pF |

Note
⁽¹⁾ Pulse test: 300 μs pulse width, 1 % duty cycle

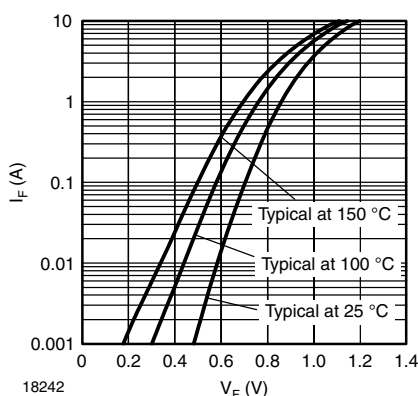
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Typical Forward Characteristics

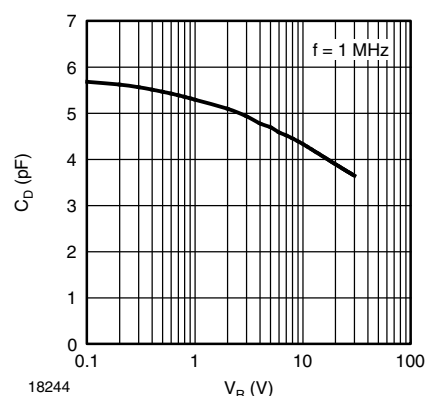


Fig. 3 - Typical Diode Capacitance vs. Reverse Voltage

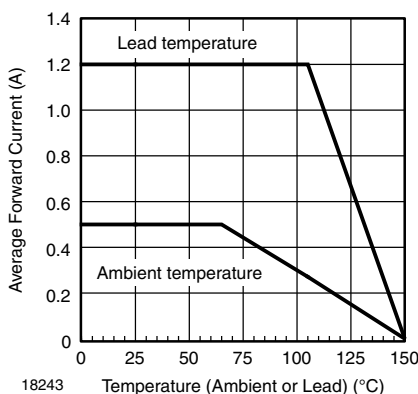


Fig. 2 - Forward Current Derating Curve

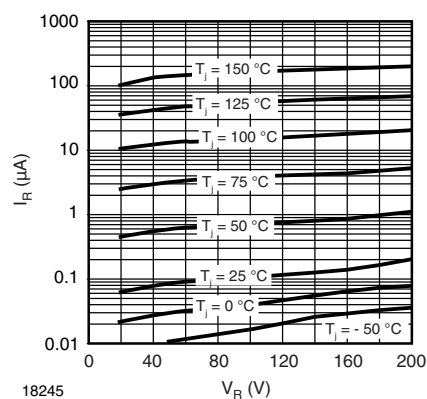
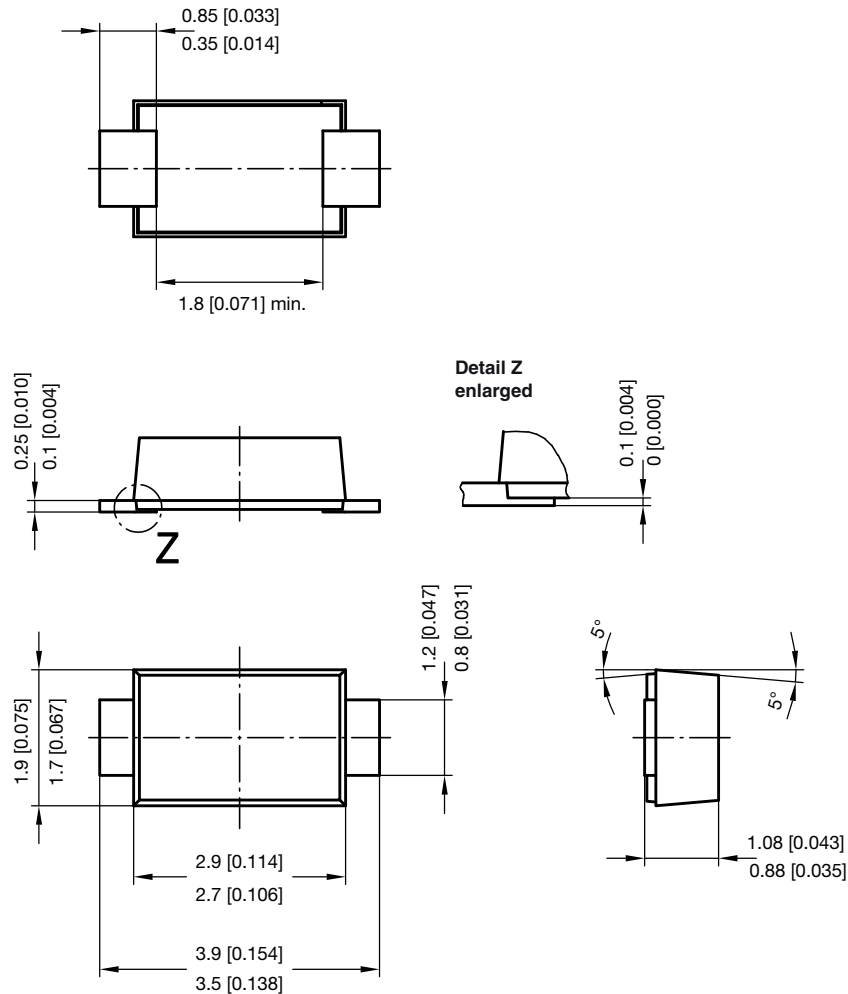
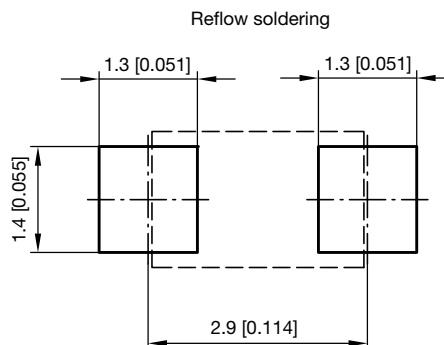


Fig. 4 - Typical Reverse Characteristics

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


foot print recommendation:

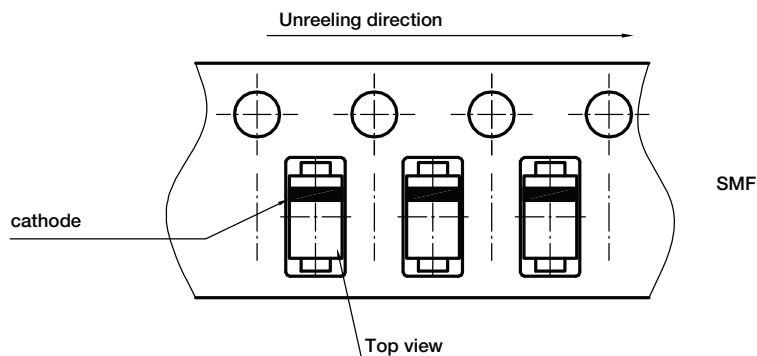


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22989

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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