

1A, 20V Schottky Barrier Surface Mount Rectifier

FEATURES

- Low forward voltage, high efficiency
- High speed switching
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- Low stored charge
- For switching power supply
- Protection circuits

MECHANICAL DATA

- Case: SOD-323F
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: Indicated by cathode band
- Weight: 4.60mg (approximately)

| KEY PARAMETERS | | |
|----------------|------------|------|
| PARAMETER | VALUE | UNIT |
| I_F | 1 | A |
| V_{RRM} | 20 | V |
| I_{FSM} | 5 | A |
| $T_{J\ MAX}$ | 125 | °C |
| Package | SOD-323F | |
| Configuration | Single die | |



SOD-323F



| ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | |
|--|--------------|-------------|------|
| PARAMETER | SYMBOL | VALUE | UNIT |
| Repetitive peak reverse voltage | V_{RRM} | 20 | V |
| Reverse voltage, total rms value | $V_{R(RMS)}$ | 14 | V |
| Forward current | I_F | 1 | A |
| Surge peak forward current 8.3ms single sine-wave superimposed on rated load | I_{FSM} | 5 | A |
| Junction temperature | T_J | -55 to +125 | °C |
| Storage temperature | T_{STG} | -55 to +150 | °C |

| THERMAL PERFORMANCE | | | |
|--|-----------------|------------|-------------|
| PARAMETER | SYMBOL | TYP | UNIT |
| Junction-to-ambient thermal resistance | $R_{\theta JA}$ | 220 | °C/W |

Thermal Performance Note: Units mounted on PCB (10mm x 5mm Cu pad test board)

| ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | | | |
|---|---|---------------|------------|------------|---------------|
| PARAMETER | CONDITIONS | SYMBOL | TYP | MAX | UNIT |
| Forward voltage ⁽¹⁾ | $I_F = 10\text{mA}, T_J = 25^\circ\text{C}$ | V_F | 266 | 290 | mV |
| | $I_F = 100\text{mA}, T_J = 25^\circ\text{C}$ | | 337 | 360 | mV |
| | $I_F = 1000\text{mA}, T_J = 25^\circ\text{C}$ | | 487 | 650 | mV |
| Reverse current @ rated V_R ⁽²⁾ | $V_R = 5\text{V}, T_J = 25^\circ\text{C}$ | I_R | - | 10 | μA |
| | $V_R = 8\text{V}, T_J = 25^\circ\text{C}$ | | - | 20 | μA |
| | $V_R = 15\text{V}, T_J = 25^\circ\text{C}$ | | - | 50 | μA |
| Junction capacitance | $f = 1\text{MHz}, V_R = 5\text{V}$ | C_J | 29 | 35 | pF |

Notes:

1. Pulse test with $PW = 0.3\text{ms}$
2. Pulse test with $PW = 30\text{ms}$

| ORDERING INFORMATION | | |
|-----------------------------|----------------|------------------------|
| ORDERING CODE | PACKAGE | PACKING |
| BAT201M3 RRG | SOD-323F | 3,000 / 7" Tape & Reel |

CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.1 Forward Current Derating Curve

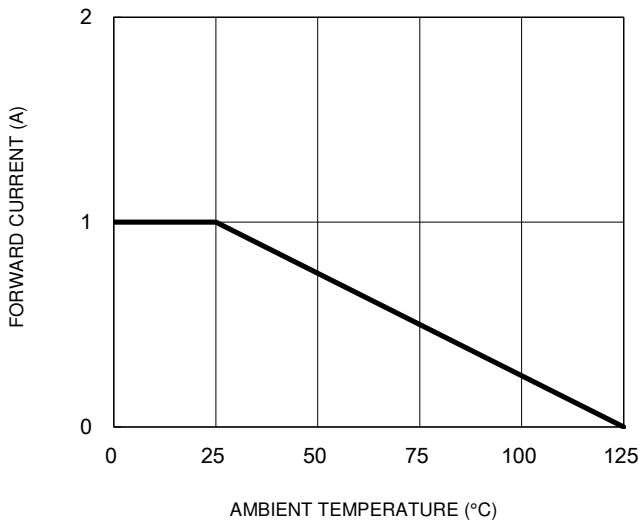


Fig.2 Typical Junction Capacitance

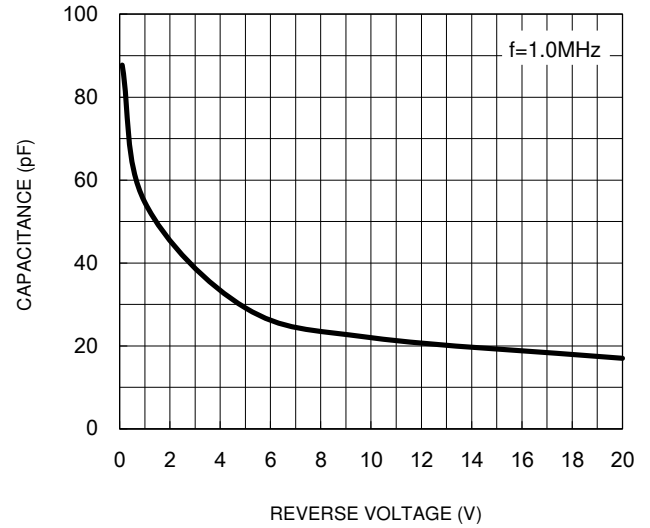


Fig.3 Typical Reverse Characteristics

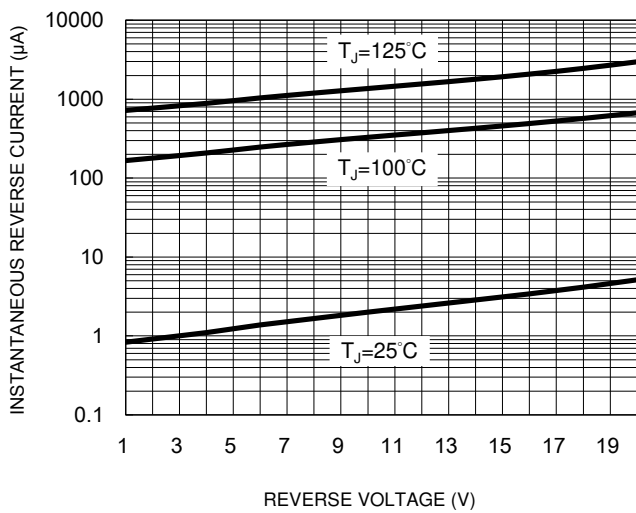
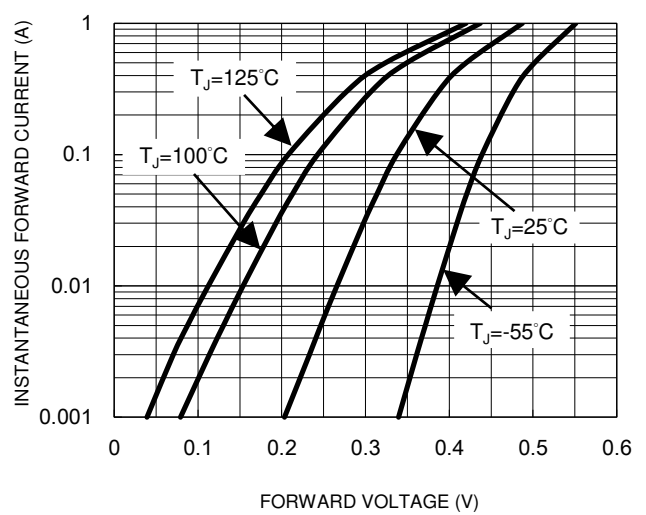
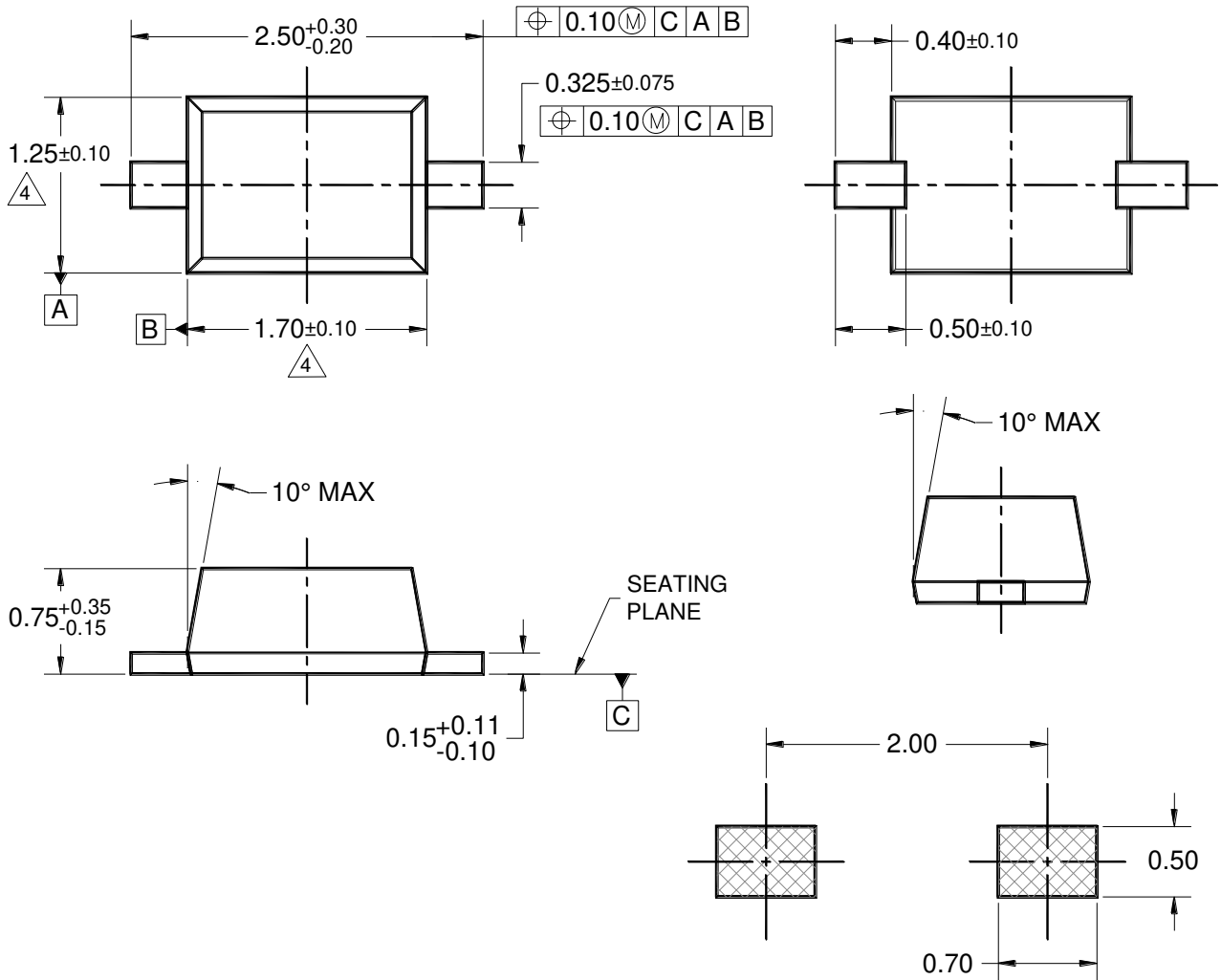


Fig.4 Typical Forward Characteristics

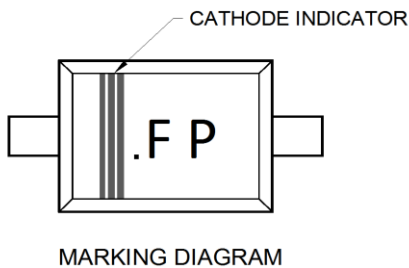


PACKAGE OUTLINE DIMENSIONS

SOD-323F



SUGGESTED PAD LAYOUT



NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: EIAJ ED-7500A-1, SC-90.
4. MOLDED PLASTIC BODY LATERAL DIMENSIONS DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
5. DWG NO. REF: HQ2SD07-SOD323F-018 REV A.

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