

SBA0820AS-AU / SBA0830AS-AU / SBA0840AS-AU

EXTREME LOW VF SCHOTTKY RECTIFIER

Voltage

20-40 V

Current

0.8 A

Features

- Ultra low forward voltage, low power loss
- Fast switching speed
- Surface mount package
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard
- AEC-Q101 qualified

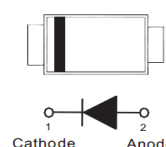
Applications

- Low voltage rectification
- Reverse polarity protection
- Low power consumption applications

Mechanical Data

- Case: Molded plastic, SOD-123
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.00037 ounces, 0.0104 grams

SOD-123



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

| PARAMETER | SYMBOL | SBA0820AS-AU | SBA0830AS-AU | SBA0840AS-AU | UNIT |
|--|---------------------------------|--------------|--------------|--------------|------|
| Maximum repetitive peak reverse voltage | V _{RRM} | 20 | 30 | 40 | V |
| Maximum rms voltage | V _{RMS} | 14 | 21 | 28 | V |
| Maximum dc blocking voltage | V _R | 20 | 30 | 40 | V |
| Maximum average forward rectified current | I _{F(AV)} | 0.8 | | | A |
| Peak forward surge current: 8.3ms single half sine-wave Superimposed on rated load | I _{FSM} | 2 | | | A |
| Typical thermal resistance | R _{θJC} ⁽²⁾ | 100 | | | °C/W |
| | R _{θJA} ⁽¹⁾ | 510 | | | |
| Operating junction temperature range | T _J | -55 to +150 | | | °C |
| Storage temperature range | T _{STG} | -55 to +150 | | | °C |

Electrical Characteristics

| PARAMETER | SYMBOL | TEST CONDITION | | SBA0820AS-AU | | SBA0830AS-AU | | SBA0840AS-AU | | UNIT |
|-----------------|-------------|----------------------|---------------------------|--------------|------|--------------|------|--------------|------|---------------|
| | | | | TYP. | MAX. | TYP. | MAX. | TYP. | MAX. | |
| Forward voltage | V_F | $I_F = 10\text{mA}$ | $T_J = 25^\circ\text{C}$ | 0.24 | - | 0.25 | - | 0.26 | - | V |
| | | $I_F = 100\text{mA}$ | | 0.32 | - | 0.33 | - | 0.35 | - | |
| | | $I_F = 800\text{mA}$ | | - | 0.55 | - | 0.6 | - | 0.7 | |
| | | $I_F = 10\text{mA}$ | $T_J = 125^\circ\text{C}$ | 0.13 | - | 0.13 | - | 0.15 | - | V |
| Reverse current | $I_R^{(3)}$ | $V_R = 10\text{V}$ | $T_J = 25^\circ\text{C}$ | 4.6 | - | 4 | - | 1.3 | - | μA |
| | | $V_R = 20\text{V}$ | | - | 100 | 9 | - | 1.9 | - | |
| | | $V_R = 30\text{V}$ | | - | - | - | 100 | 3.1 | - | |
| | | $V_R = 40\text{V}$ | | - | - | - | - | - | 50 | |
| | | $V_R = 20\text{V}$ | $T_J = 125^\circ\text{C}$ | 1.7 | - | 1.4 | - | 0.5 | - | mA |
| | | $V_R = 30\text{V}$ | | - | - | 3.5 | - | 0.8 | - | |
| | | $V_R = 40\text{V}$ | | - | - | - | - | 1.3 | - | |
| | | | | - | - | - | - | - | - | |

Note : 1. Mounted on a FR4 PCB, single-sided copper, mini pad.

2. Mounted on a FR4 PCB, single-sided copper, with 100cm² copper pad area.

3. Short duration pulse test used to minimize self-heating effect.

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TYPICAL CHARACTERISTIC CURVES

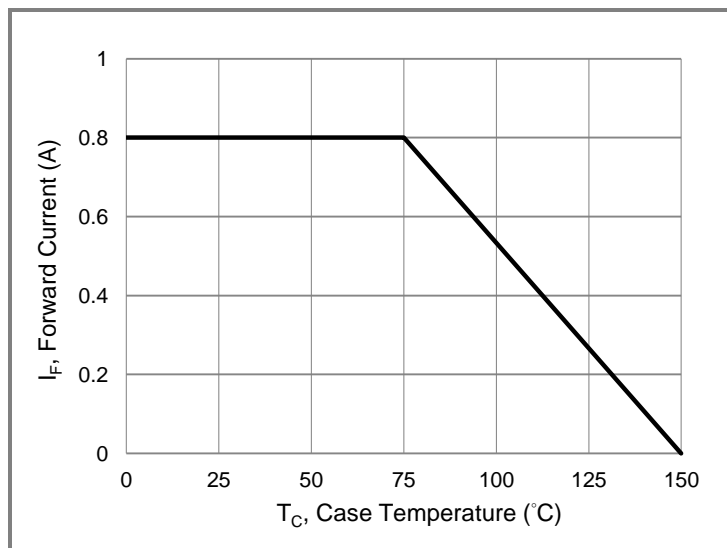


Fig.1 Forward Current Derating Curve

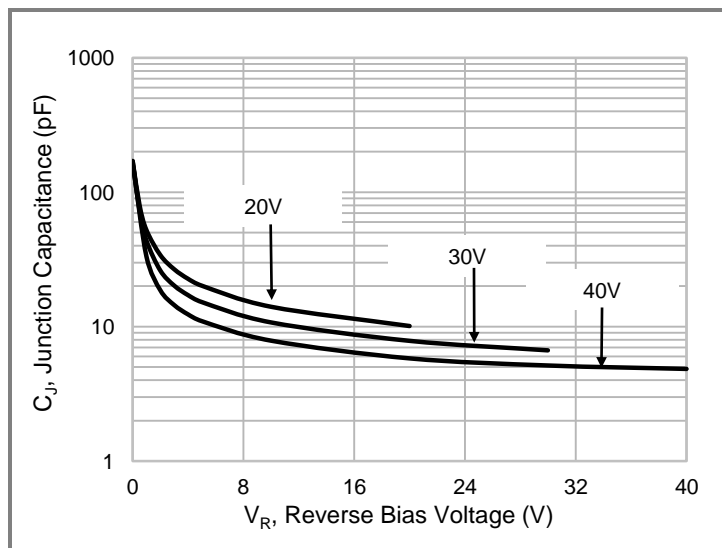


Fig. 2 Typical Junction Capacitance

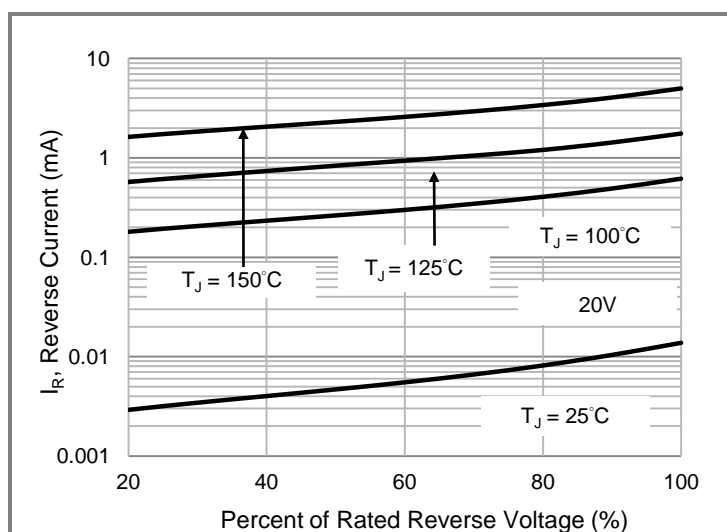


Fig.3 Typical Reverse Characteristics

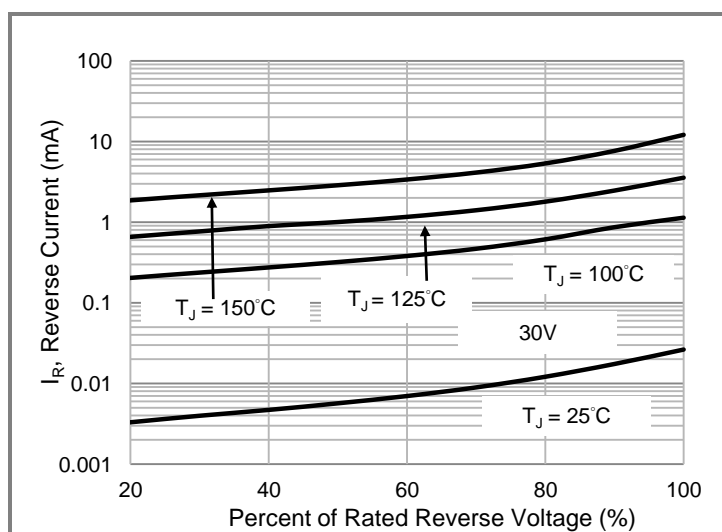


Fig.4 Typical Reverse Characteristics

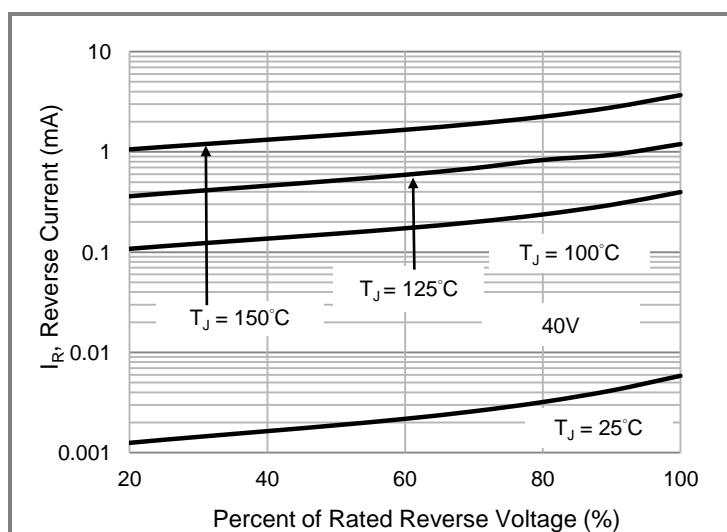


Fig.5 Typical Reverse Characteristics

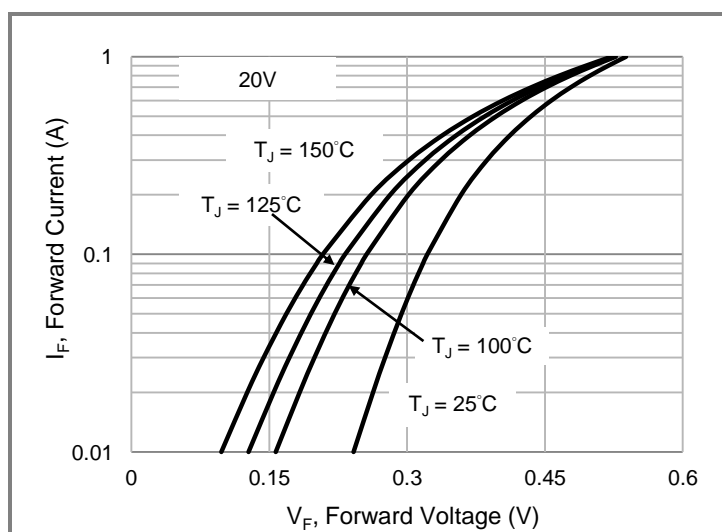


Fig.6 Typical Forward Characteristics

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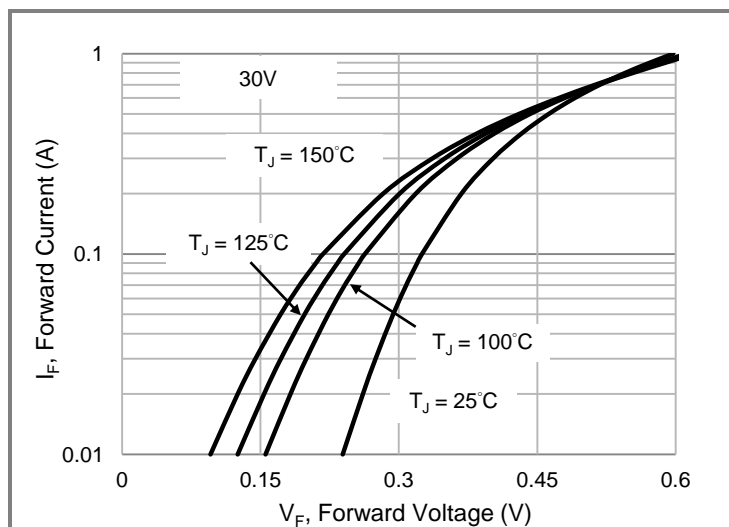


Fig.7 Typical Forward Characteristics

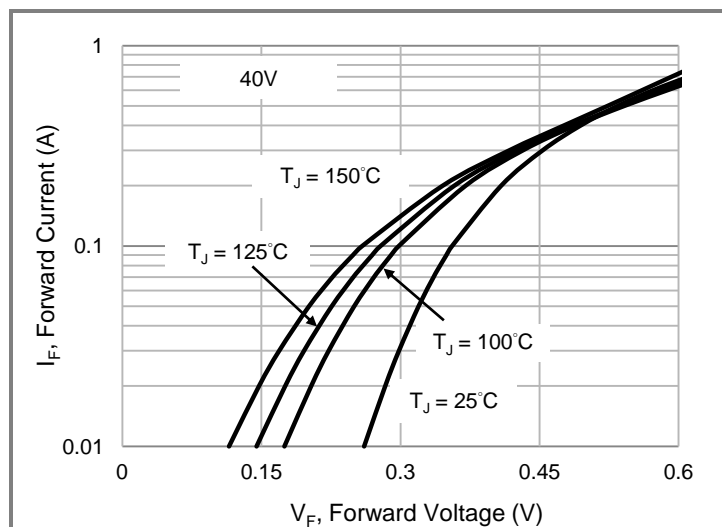


Fig.8 Typical Forward Characteristics

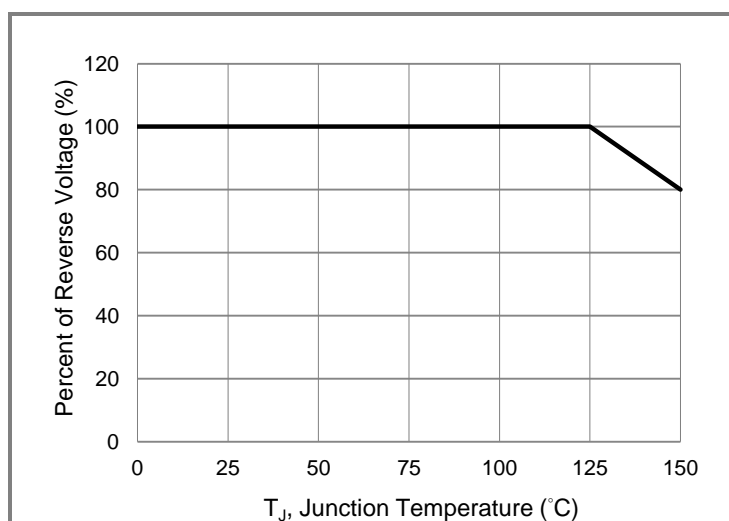


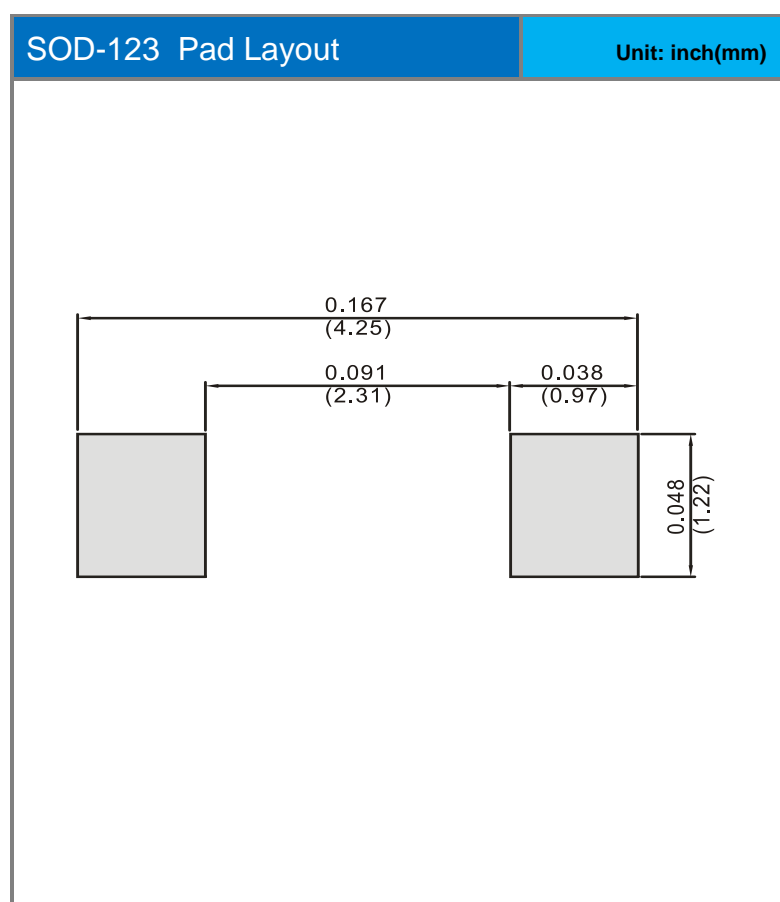
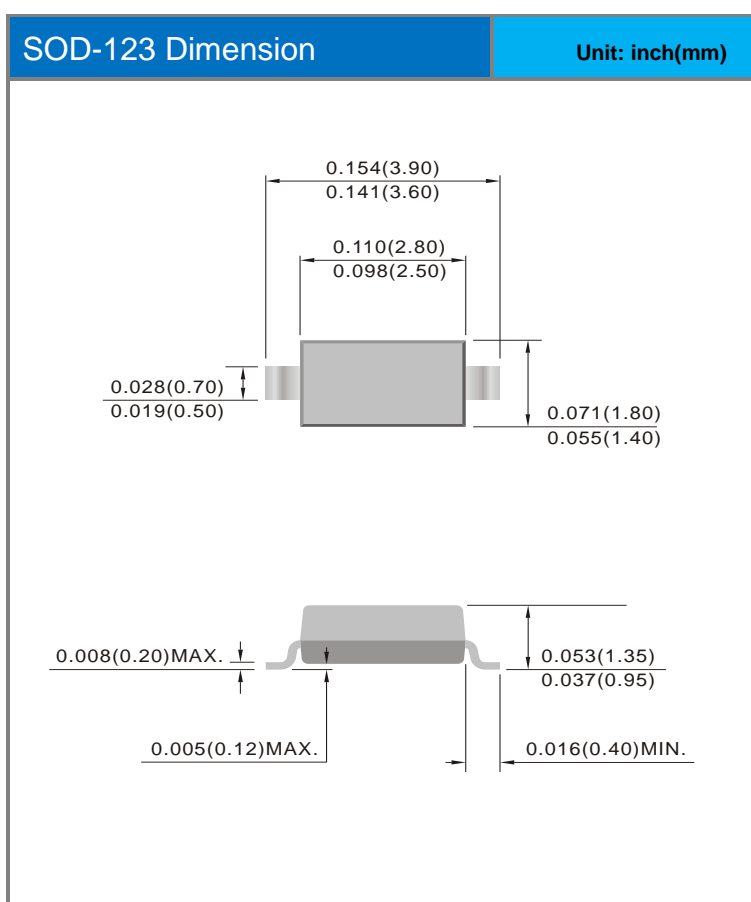
Fig.9 Operating Temperature Derating Curve

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Part No Packing Code Version

| Part No Packing Code | Package Type | Packing Type | Marking | Version |
|-----------------------|--------------|------------------|---------|--------------|
| SBA0820AS-AU_R1_000A1 | SOD-123 | 3K pcs / 7" reel | 2AS | Halogen free |
| SBA0830AS-AU_R1_000A1 | SOD-123 | 3K pcs / 7" reel | 3AS | Halogen free |
| SBA0840AS-AU_R1_000A1 | SOD-123 | 3K pcs / 7" reel | 4AS | Halogen free |

Packaging Information & Mounting Pad Layout





SBA0820AS-AU / SBA0830AS-AU / SBA0840AS-AU

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