



SBA520AF SERIES

EXTREME LOW VF SCHOTTKY RECTIFIER

| | | | |
|----------------|----------------|----------------|------------|
| Voltage | 20-40 V | Current | 5 A |
|----------------|----------------|----------------|------------|

Features

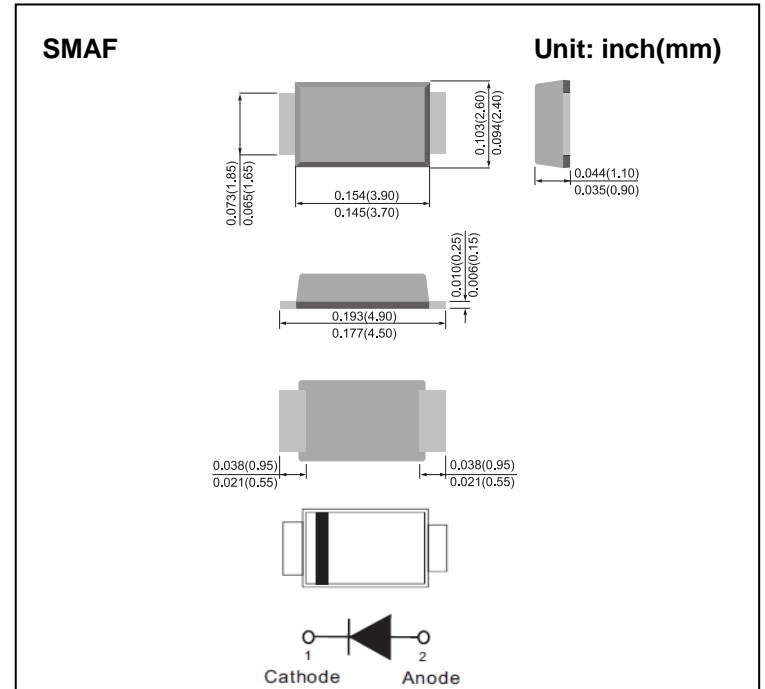
- Ultra low forward voltage drop, low power loss
- Fast switching speed
- Surface mount package
- Ultra thin profile package for space constrained utilization
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC61249 Std. . (Halogen Free)

Applications

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

Mechanical Data

- Case: Molded plastic, SMAF
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0012 ounces, 0.0328 grams



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

| PARAMETER | SYMBOL | SBA520AF | SBA530AF | SBA540AF | 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 | $I_{F(AV)}$ | 5 | | | A |
| Peak forward surge current : 8.3ms single half sine-wave Superimposed on rated load | I_{FSM} | 80 | | | A |
| Typical thermal resistance | (Note 2) $R_{\theta JC}$ | 15 | | | $^\circ\text{C/W}$ |
| | (Note 1) $R_{\theta JA}$ | 150 | | | |
| Operating junction temperature range | T_J | -55 to +150 | | | $^\circ\text{C}$ |
| Storage temperature range | T_{STG} | -55 to +150 | | | $^\circ\text{C}$ |

Electrical Characteristics

| PARAMETER | SYMBOL | TEST CONDITION | SBA520AF | | SBA530AF | | SBA540AF | | UNIT |
|--------------------------|--------|---------------------------|----------|------|----------|------|----------|------|---------------|
| | | | TYP. | MAX. | TYP. | MAX. | TYP. | MAX. | |
| Forward voltage | V_F | $I_F = 10\text{mA}$ | 0.17 | - | 0.17 | - | 0.17 | - | V |
| | | $I_F = 2\text{A}$ | 0.34 | - | 0.35 | - | 0.36 | - | |
| | | $I_F = 5\text{A}$ | - | 0.45 | - | 0.46 | - | 0.49 | |
| | | $T_J = 25^\circ\text{C}$ | | | | | | | |
| Reverse current (Note 3) | I_R | $I_F = 10\text{mA}$ | 0.04 | - | 0.04 | - | 0.05 | - | V |
| | | $I_F = 2\text{A}$ | 0.25 | - | 0.27 | - | 0.29 | - | |
| | | $V_R = 10\text{V}$ | 47 | - | 33 | - | 25 | - | μA |
| | | $V_R = 20\text{V}$ | - | 300 | 51 | - | 32 | - | |
| $V_R = 30\text{V}$ | - | - | - | 300 | 55 | - | | | |
| | | $V_R = 40\text{V}$ | - | - | - | - | - | 250 | mA |
| | | $T_J = 125^\circ\text{C}$ | | | | | | | |
| | | $V_R = 20\text{V}$ | 21 | - | 11 | - | 8 | - | |
| | | $V_R = 30\text{V}$ | - | - | 19 | - | 12 | - | |
| | | $V_R = 40\text{V}$ | - | - | - | - | 19 | | |

- 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

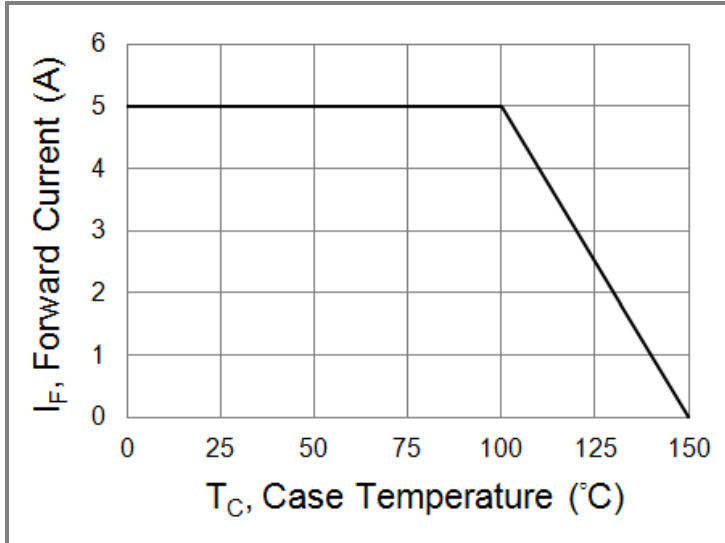


Fig.1 Forward Current Derating Curve

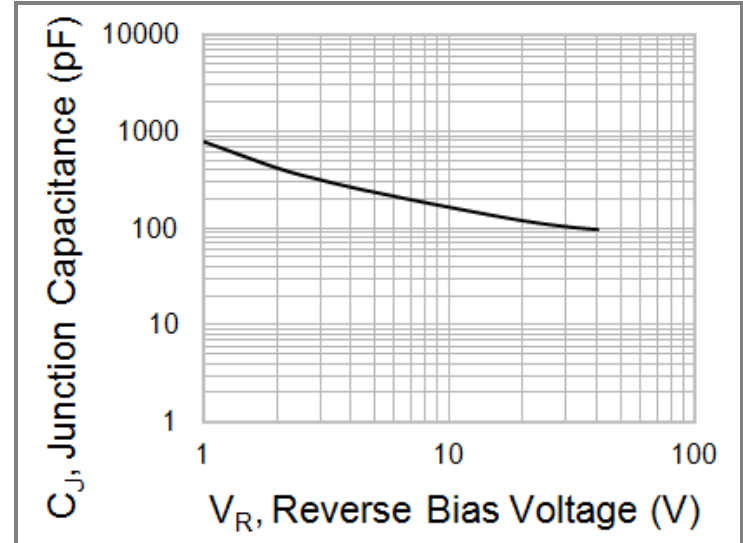


Fig. 2 Typical Junction Capacitance

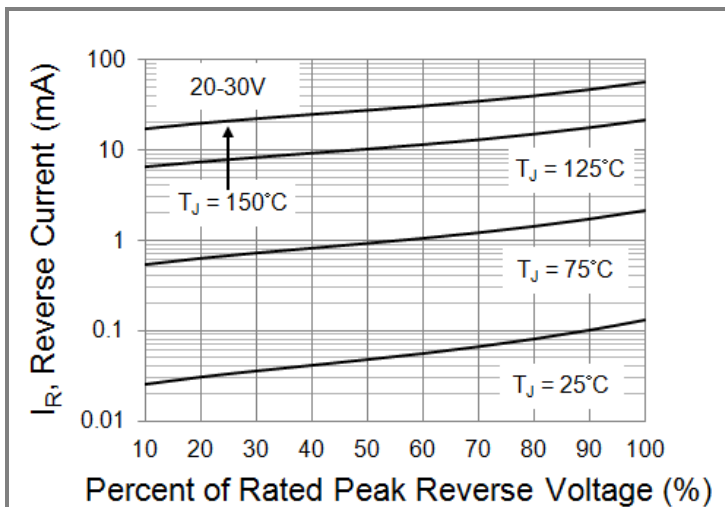


Fig.3 Typical Reverse Characteristics

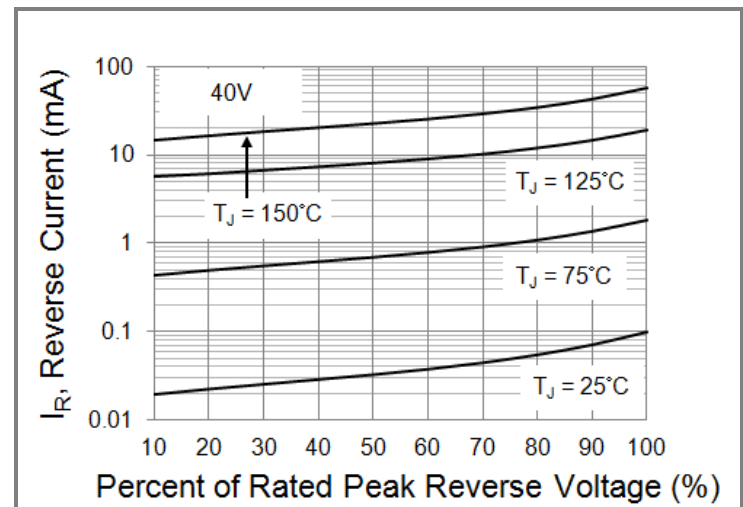


Fig.4 Typical Reverse Characteristics

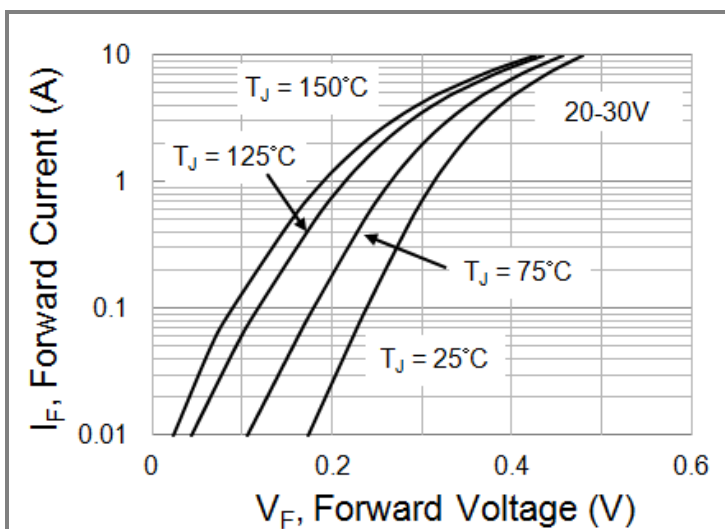


Fig.5 Typical Forward Characteristics

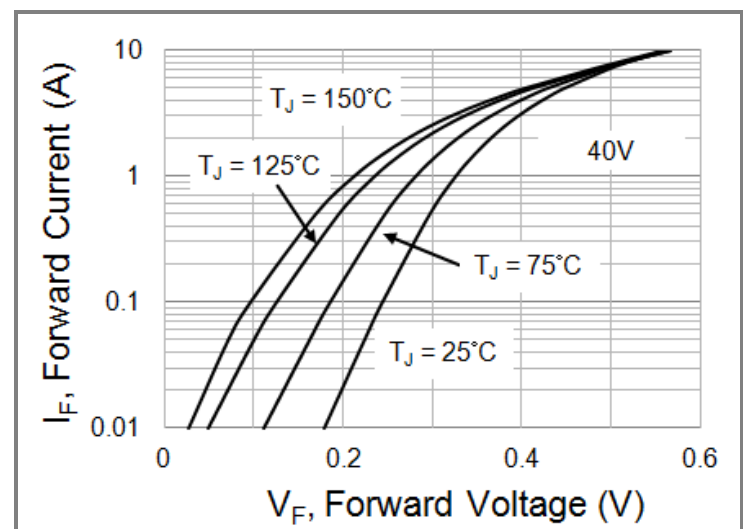
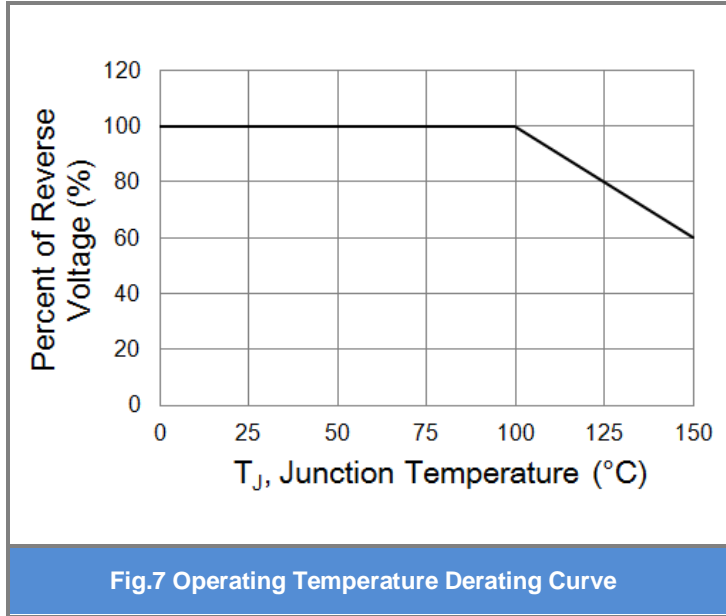


Fig.6 Typical Forward Characteristics



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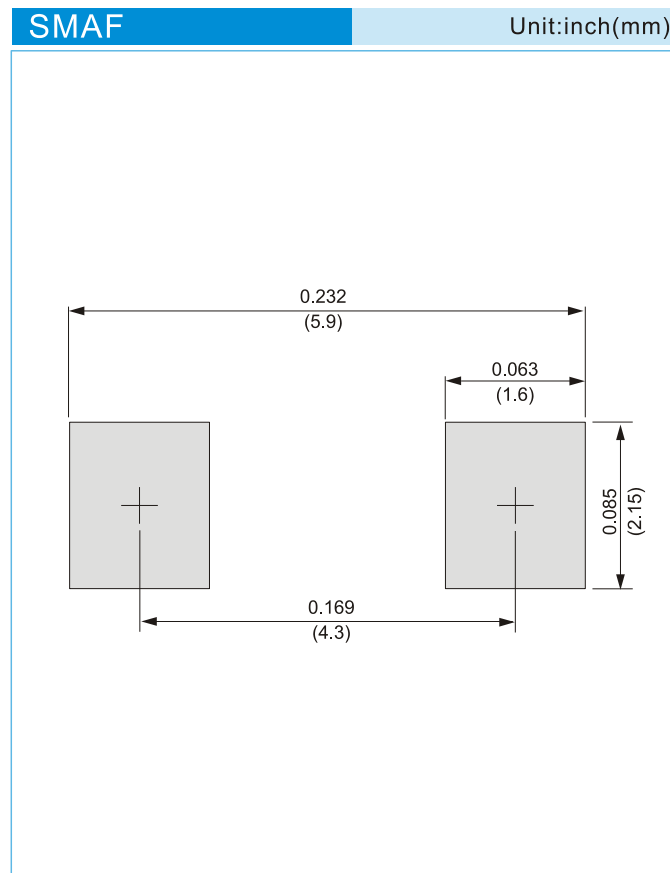


SBA520AF SERIES

Part No Packing Code Version

| Part No Packing Code | Package Type | Packing Type | Marking | Version |
|----------------------|--------------|--------------------|----------|--------------|
| SBA520AF_R1_00001 | SMAF | 3K pcs / 7" reel | SBA520AF | Halogen free |
| SBA520AF_R2_00001 | SMAF | 10K pcs / 13" reel | SBA520AF | Halogen free |
| SBA530AF_R1_00001 | SMAF | 3K pcs / 7" reel | SBA530AF | Halogen free |
| SBA530AF_R2_00001 | SMAF | 10K pcs / 13" reel | SBA530AF | Halogen free |
| SBA540AF_R1_00001 | SMAF | 3K pcs / 7" reel | SBA540AF | Halogen free |
| SBA540AF_R2_00001 | SMAF | 10K pcs / 13" reel | SBA540AF | Halogen free |

Mounting Pad Layout





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