

SBA520AF SERIES

EXTREME LOW VF SCHOTTKY RECTIFIER

Voltage

20-40 V

Current

5 A

Features

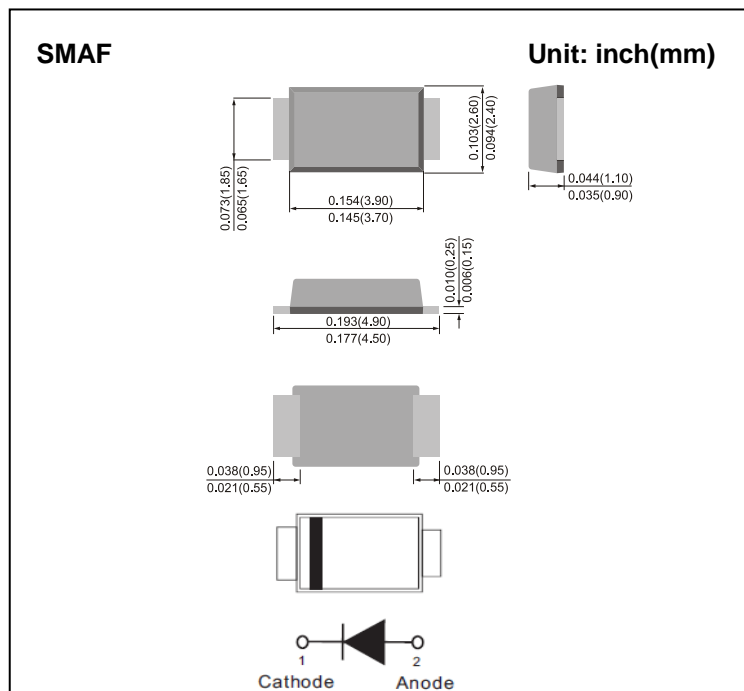
- Ultra low forward voltage drop, low power loss
- Fast switching speed
- Surface mount package
- Ultra thin profile package for space constrained utilization
- Lead free in compliance with EU RoHS2.0 (2011/65/EU & 2015/865/EU directive)
- Green molding compound as per IEC61249 Std. . (Halogen Free)

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	$V_R = 10\text{V}$	0.04	-	0.04	-	0.05	-	μA
		$V_R = 20\text{V}$	0.25	-	0.27	-	0.29	-	
		$V_R = 30\text{V}$							
		$V_R = 40\text{V}$							
		$V_R = 20\text{V}$	21	-	11	-	8	-	mA
		$V_R = 30\text{V}$	-	-	19	-	12	-	
		$V_R = 40\text{V}$	-	-	-	-	19	-	
		$T_J = 125^{\circ}\text{C}$							

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

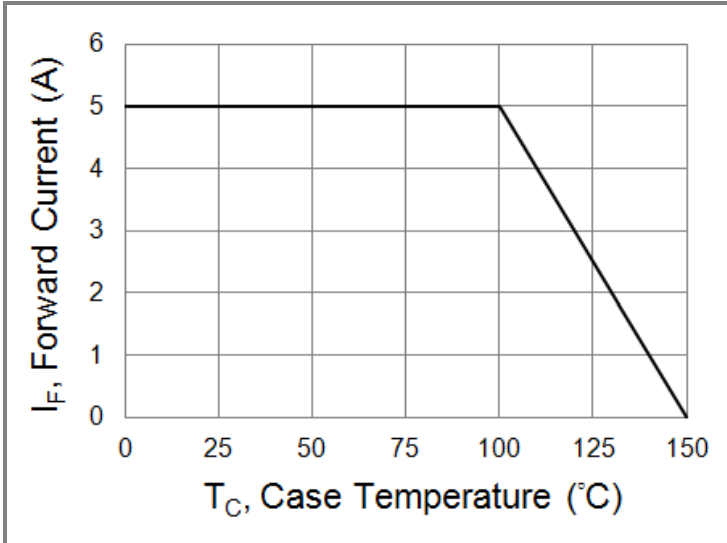


Fig.1 Forward Current Derating Curve

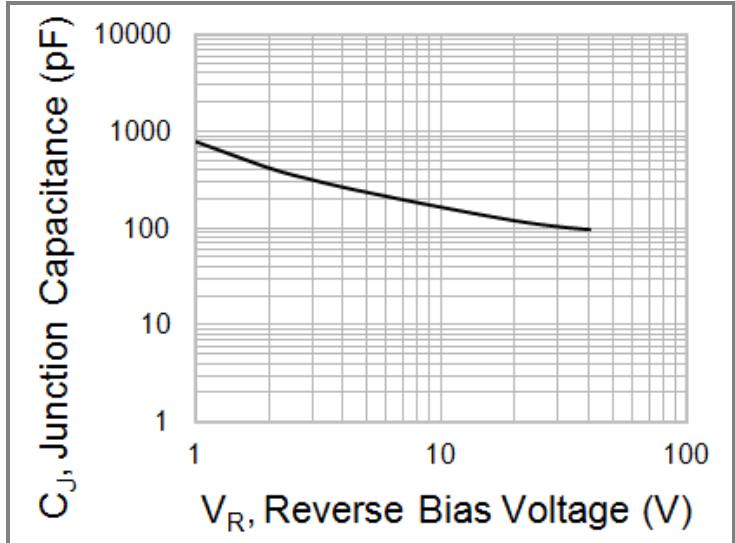


Fig. 2 Typical Junction Capacitance

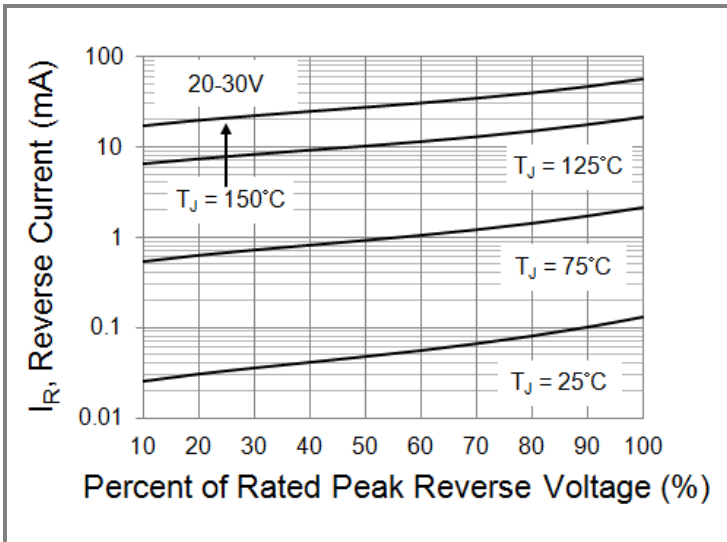


Fig.3 Typical Reverse Characteristics

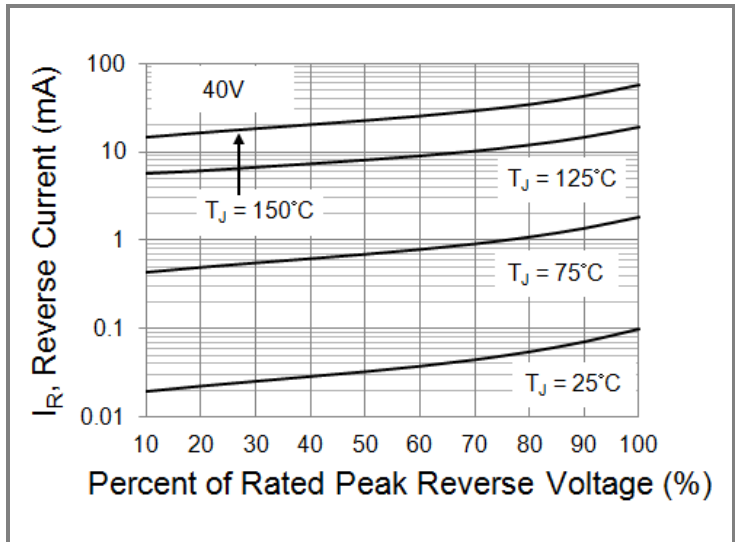


Fig.4 Typical Reverse Characteristics

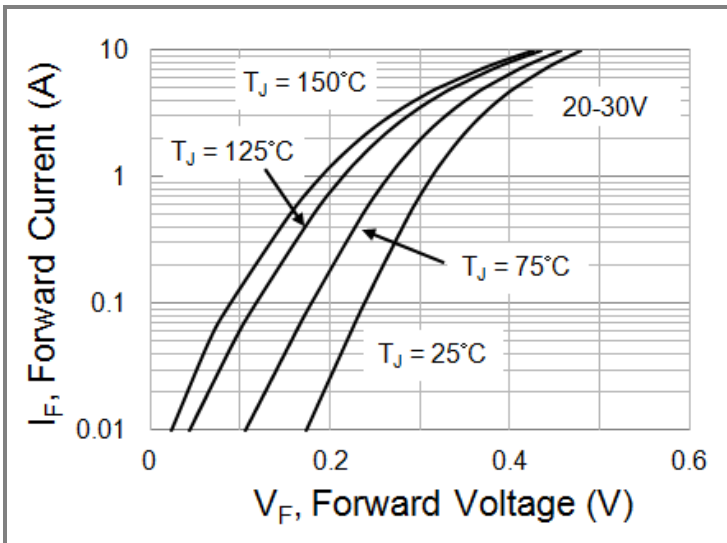


Fig.5 Typical Forward Characteristics

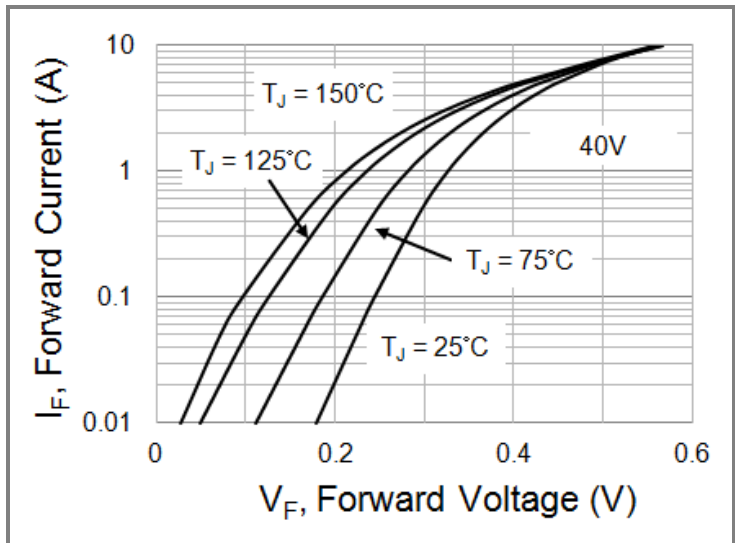


Fig.6 Typical Forward Characteristics



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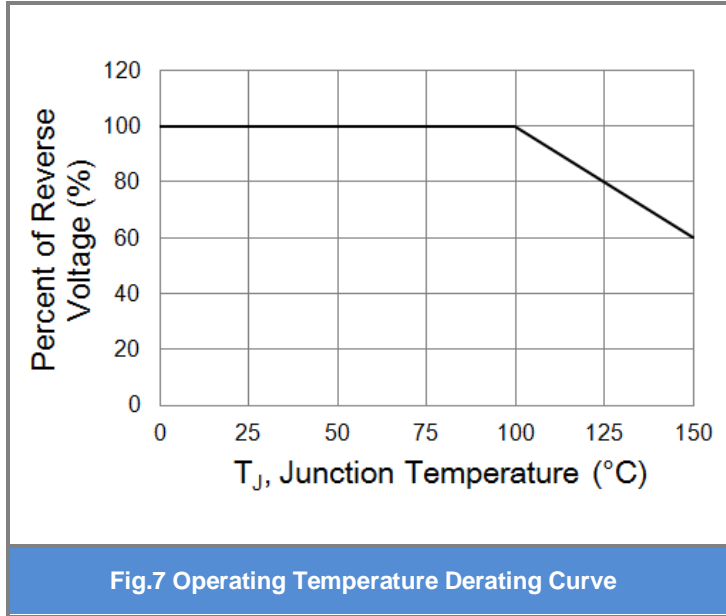


Fig.7 Operating Temperature Derating Curve

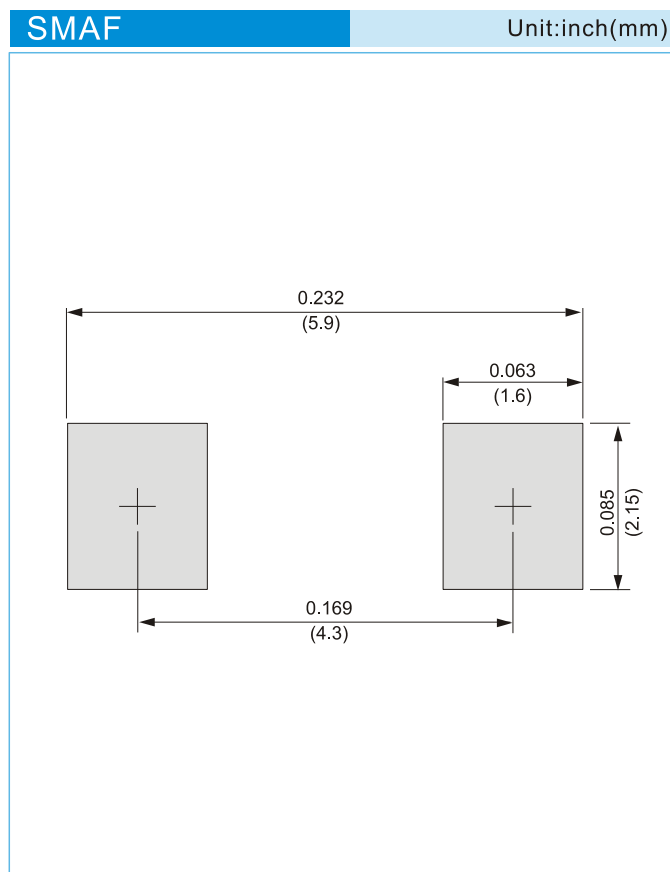


SBA520AF SERIES

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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