



# SBA0820AS / SBA0830AS / SBA0840AS

## EXTREME LOW VF SCHOTTKY RECTIFIER

<b>Voltage</b>	<b>20-40 V</b>	<b>Current</b>	<b>0.8 A</b>
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### 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

### 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



1 Cathode 2 Anode

### Maximum Ratings (T<sub>A</sub> = 25 °C unless otherwise noted)

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

### Electrical Characteristics

PARAMETER	SYMBOL	TEST CONDITION	SBA0820AS		SBA0830AS		SBA0840AS		UNIT		
			TYP.	MAX.	TYP.	MAX.	TYP.	MAX.			
Forward voltage	V <sub>F</sub>	I <sub>F</sub> = 10mA	0.24	-	0.25	-	0.26	-	V		
		I <sub>F</sub> = 100mA	0.32	-	0.33	-	0.35	-			
		I <sub>F</sub> = 800mA	-	0.55	-	0.6	-	0.7			
		T <sub>J</sub> = 25 °C									
Reverse current	I <sub>R</sub> <sup>(3)</sup>	I <sub>F</sub> = 10mA	0.13	-	0.13	-	0.15	-	V		
		I <sub>F</sub> = 100mA	0.23	-	0.24	-	0.29	-			
		V <sub>R</sub> = 10V	T <sub>J</sub> = 25 °C	V <sub>R</sub> = 10V	4.6	-	4	-	1.3	-	μA
				V <sub>R</sub> = 20V	-	100	9	-	1.9	-	
V <sub>R</sub> = 30V	-	-	100	3.1	-	-	-				
V <sub>R</sub> = 40V	-	-	-	-	-	50	-				
Reverse current	I <sub>R</sub> <sup>(3)</sup>	V <sub>R</sub> = 20V	T <sub>J</sub> = 125 °C	V <sub>R</sub> = 20V	1.7	-	1.4	-	0.5	-	mA
				V <sub>R</sub> = 30V	-	-	3.5	-	0.8	-	
		V <sub>R</sub> = 40V	-	-	-	-	1.3	-			

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

2. Mounted on a FR4 PCB, single-sided copper, with 100cm<sup>2</sup> copper pad area.

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



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## TYPICAL CHARACTERISTIC CURVES

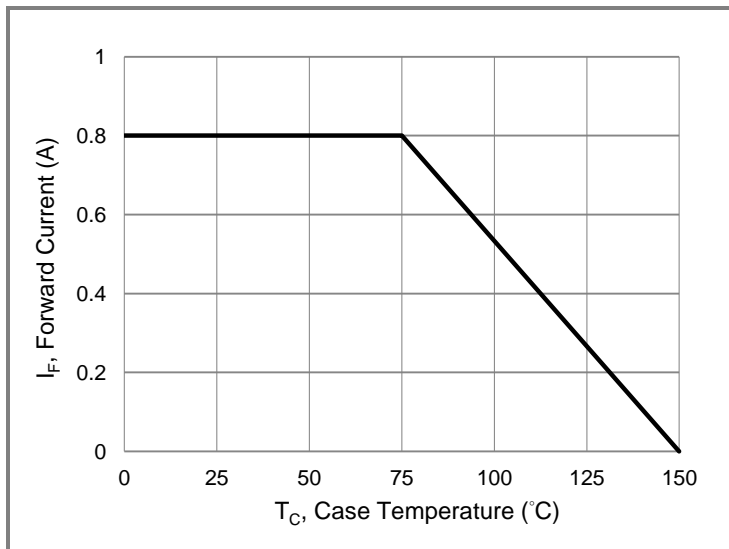


Fig.1 Forward Current Derating Curve

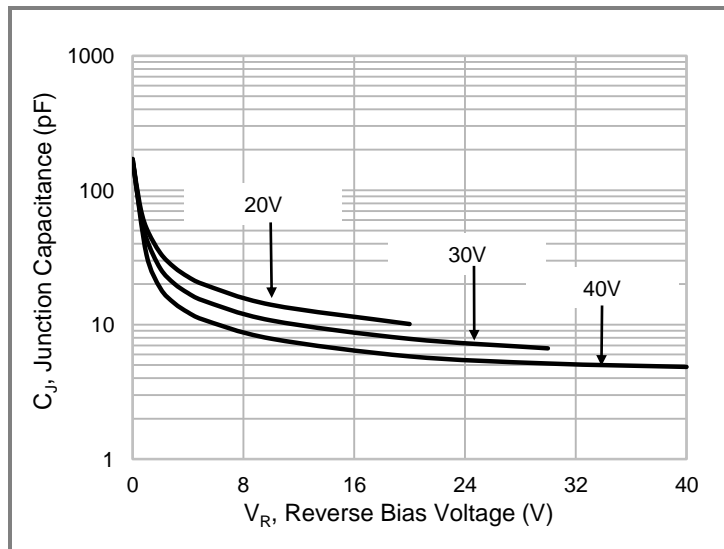


Fig. 2 Typical Junction Capacitance

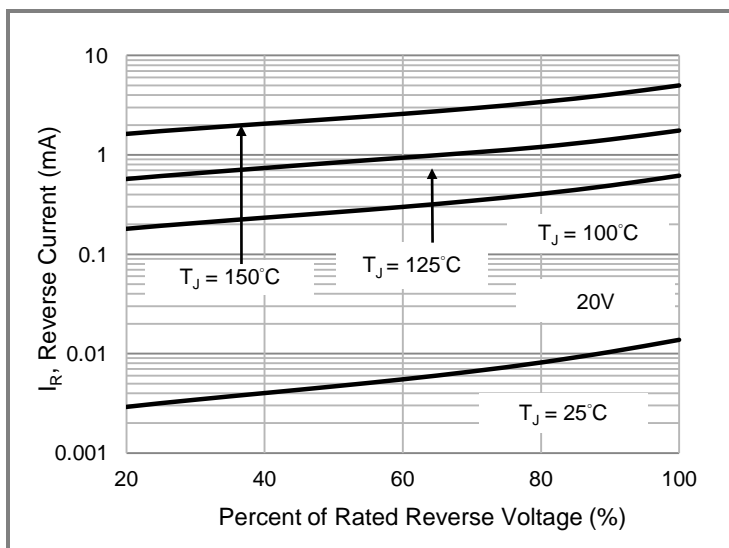


Fig.3 Typical Reverse Characteristics

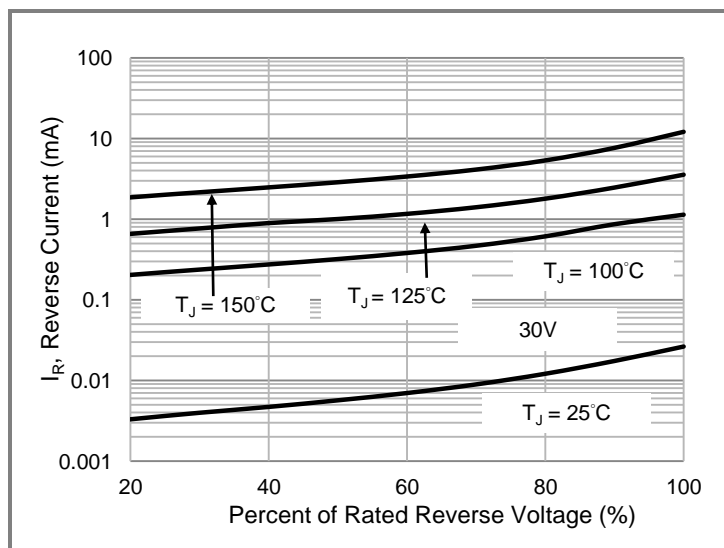


Fig.4 Typical Reverse Characteristics

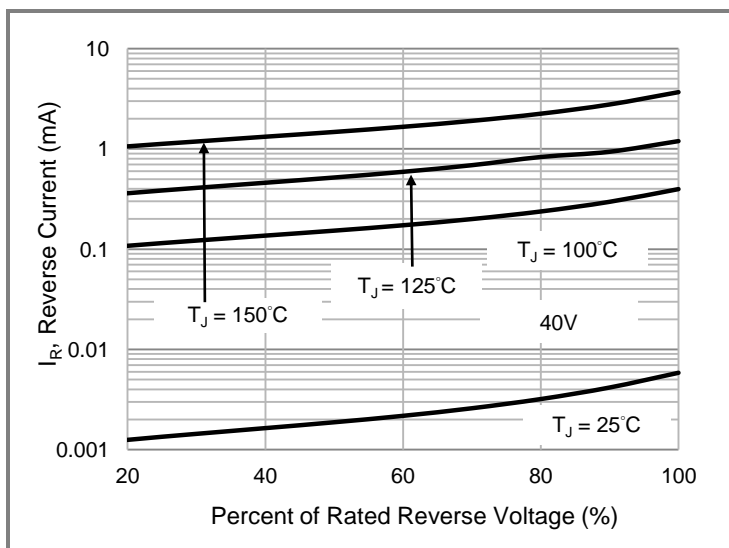


Fig.5 Typical Reverse Characteristics

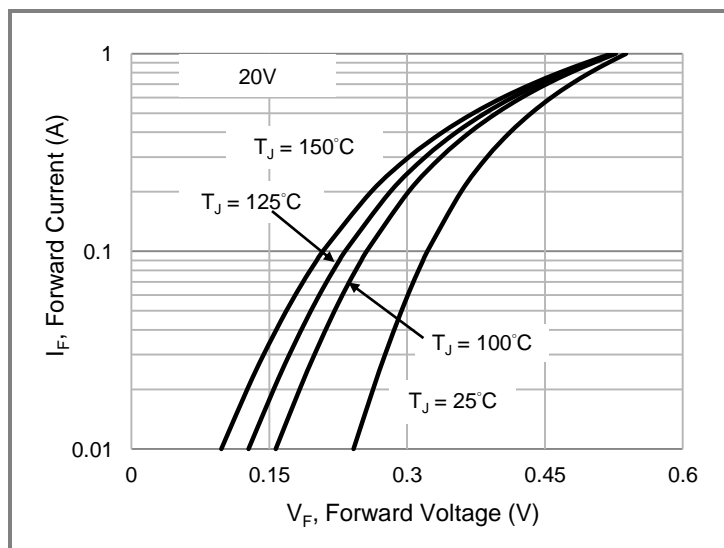


Fig.6 Typical Forward Characteristics



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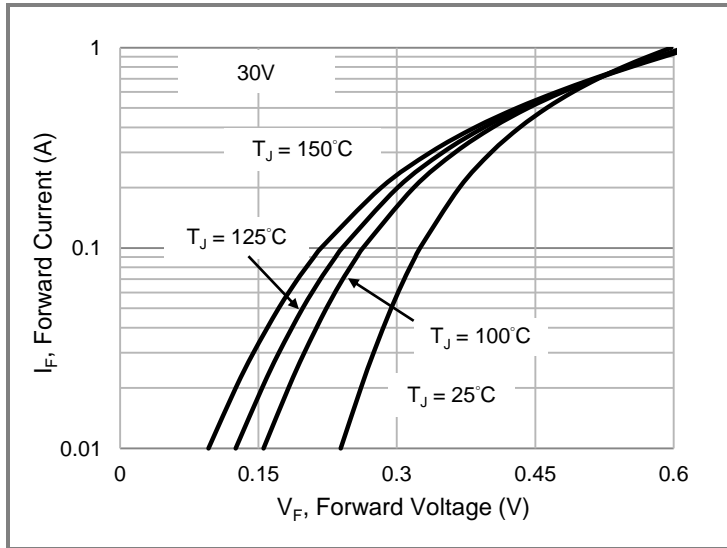


Fig.7 Typical Forward Characteristics

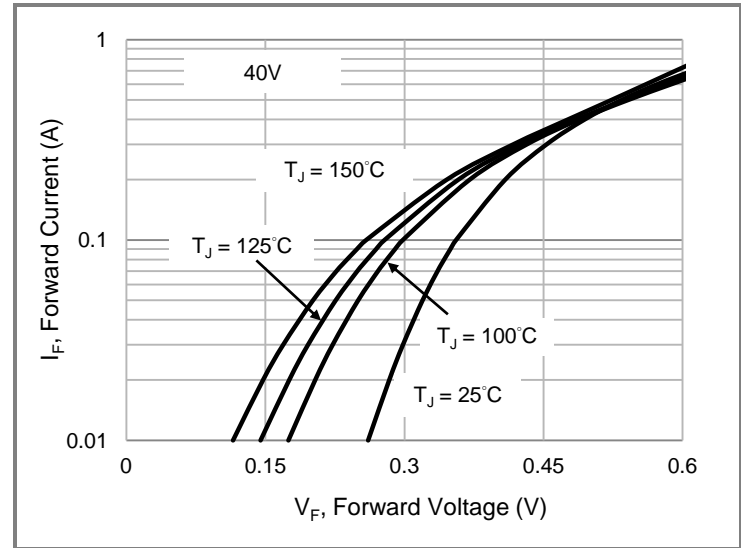


Fig.8 Typical Forward Characteristics

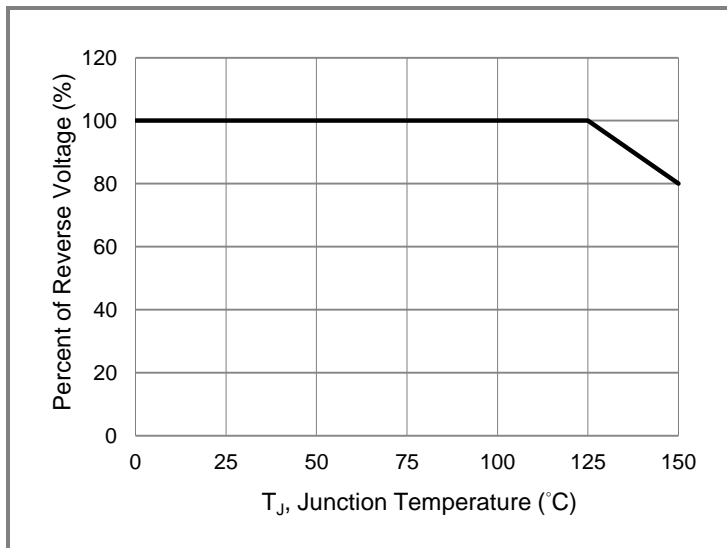


Fig.9 Operating Temperature Derating Curve



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## Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
SBA0820AS_R1_00001	SOD-123	3K pcs / 7" reel	2AS	Halogen free
SBA0830AS_R1_00001	SOD-123	3K pcs / 7" reel	3AS	Halogen free
SBA0840AS_R1_00001	SOD-123	3K pcs / 7" reel	4AS	Halogen free

## Packaging Information & Mounting Pad Layout

