SBA120AS / SBA130AS / SBA140AS

EXTREME LOW VF SCHOTTKY RECTIFIER

Voltage	20-40 V	Current	1 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

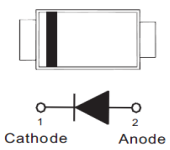
Applications

- 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 °C unless otherwise noted)

PARAMETER	SYMBOL	SBA120AS	SBA130AS	SBA140AS	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	$I_{F(AV)}$	1			A
Peak forward surge current: 8.3ms single half sine-wave Superimposed on rated load	I_{FSM}	10			A
Typical thermal resistance	$R_{\theta JC}$ (2) $R_{\theta JA}$ (1)	100 510			°C/W
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		SBA120AS		SBA130AS		SBA140AS		UNIT
				TYP.	MAX.	TYP.	MAX.	TYP.	MAX.	
Forward voltage	V_F	I_F = 10mA	T_J =25 °C	0.22	-	0.22	-	0.23	-	V
		I_F = 0.5A		0.35	-	0.36	-	0.39	-	
		I_F = 1A		-	0.45	-	0.47	-	0.51	
		I_F = 10mA	T_J =125 °C	0.09	-	0.1	-	0.1	-	V
		I_F = 0.5A		0.27	-	0.3	-	0.33	-	
Reverse current	I_R (3)	V_R = 10V	T_J=25°C	7.5	-	5.9	-	3.6	-	μA
		V_R = 20V		-	100	10	-	4.2	-	
		V_R = 30V		-	-	-	100	6.1	-	
		V_R = 40V		-	-	-	-	-	100	
		V_R = 20V	T_J =125 °C	3.2	-	2.2	-	1.2	-	mA
		V_R = 30V		-	-	3.9	-	1.7	-	
		V_R = 40V		-	-	-	-	2.3	-	

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

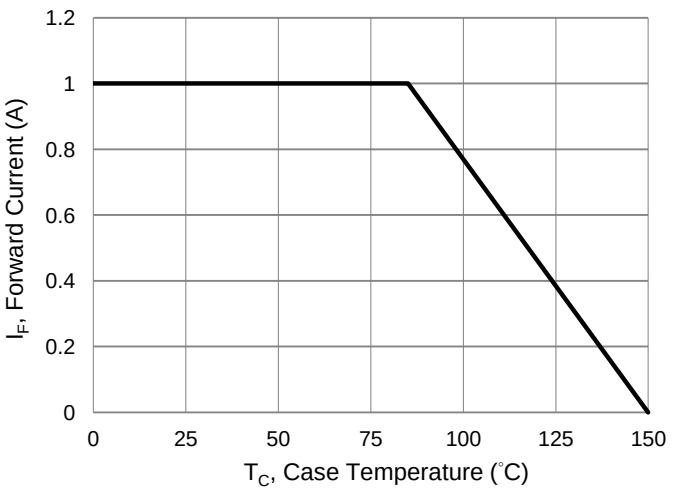

Fig.1 Forward Current Derating Curve

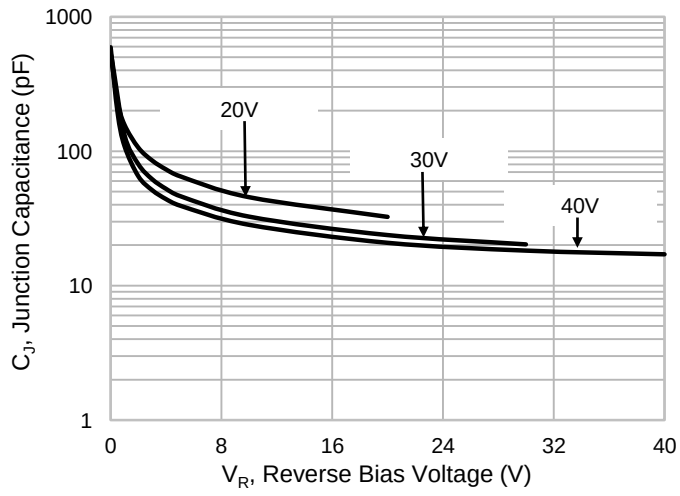

Fig. 2 Typical Junction Capacitance

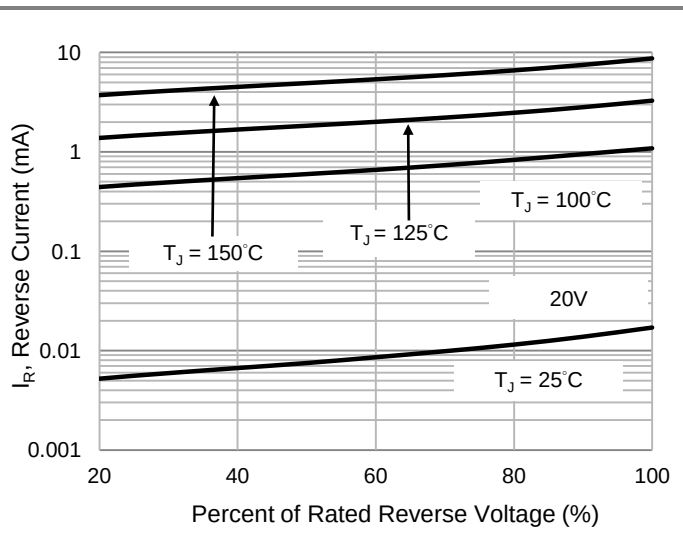

Fig.3 Typical Reverse Characteristics

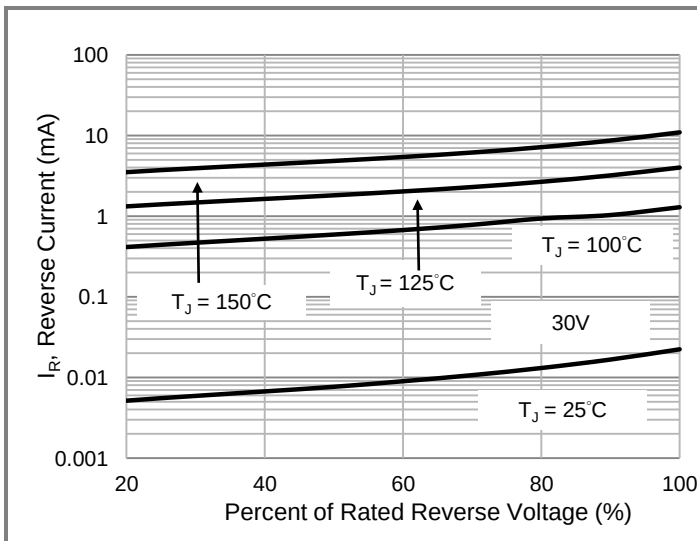

Fig.4 Typical Reverse Characteristics

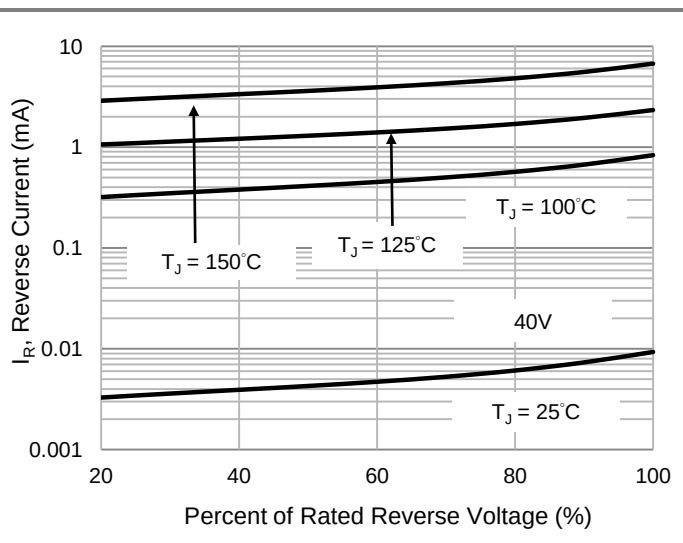

Fig.5 Typical Reverse Characteristics

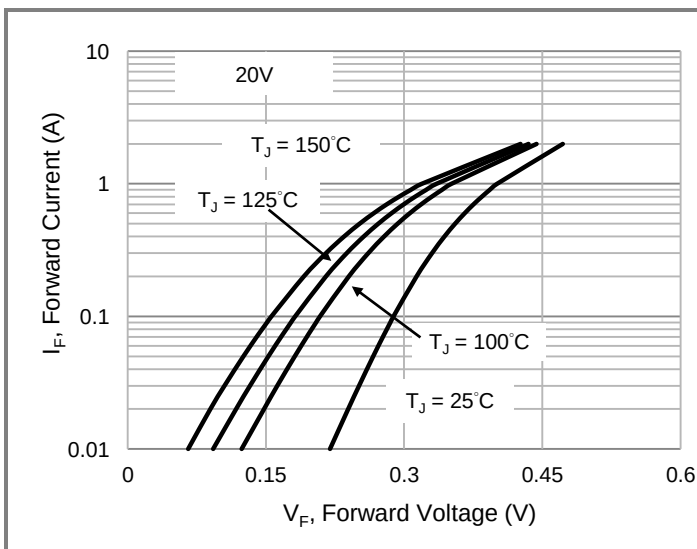

Fig.6 Typical Forward Characteristics

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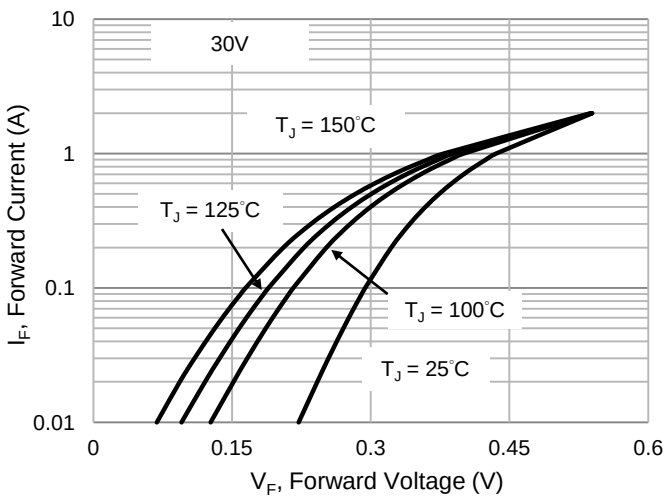

Fig.7 Typical Forward Characteristics

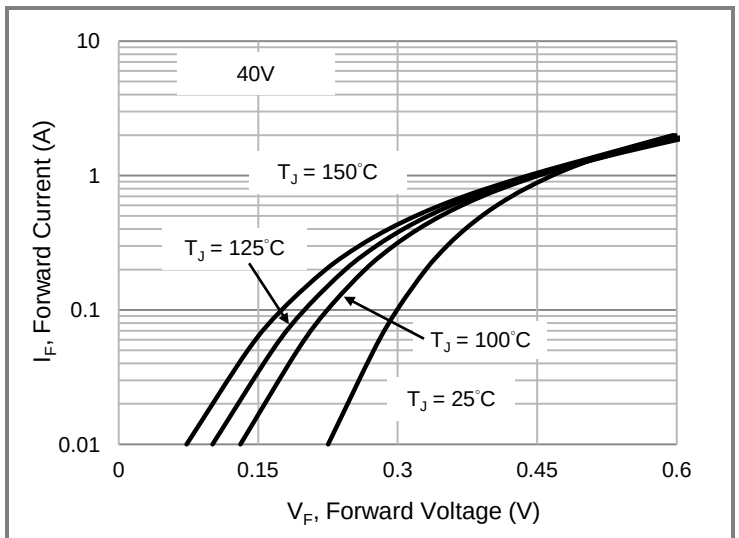

Fig.8 Typical Forward Characteristics

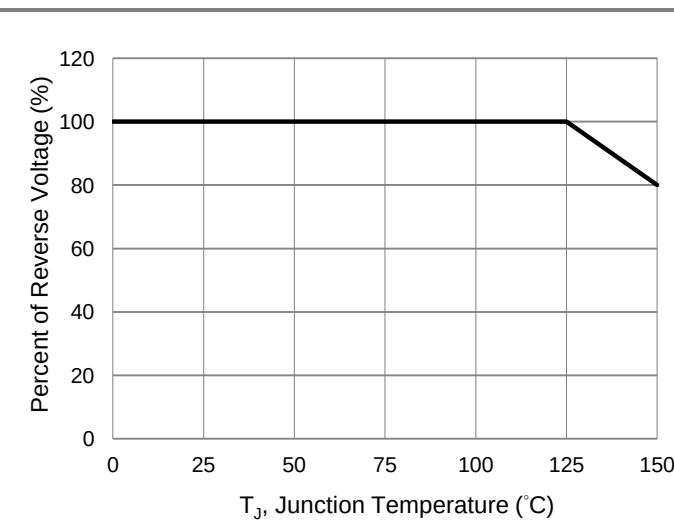

Fig.9 Operating Temperature Derating Curve

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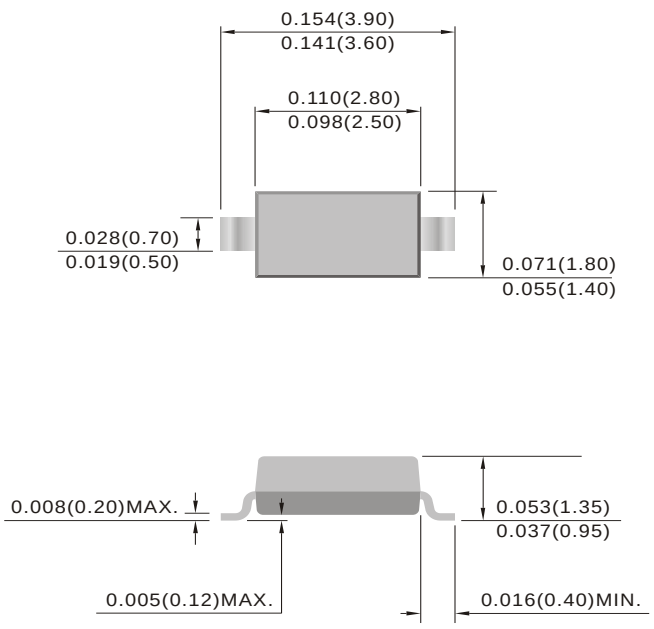
Part No Packing Code Version

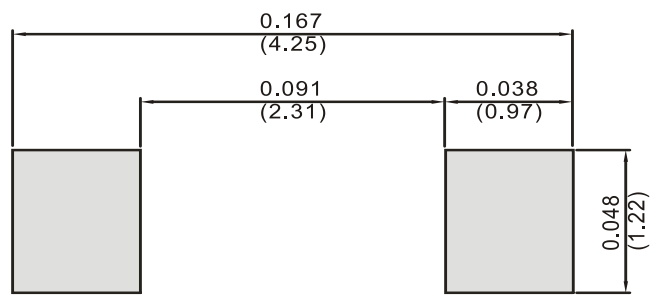
Part No Packing Code	Package Type	Packing Type	Marking	Version
SBA120AS_R1_00001	SOD-123	3K pcs / 7” reel	A7	Halogen free
SBA130AS_R1_00001	SOD-123	3K pcs / 7” reel	B7	Halogen free
SBA140AS_R1_00001	SOD-123	3K pcs / 7” reel	C7	Halogen free

Packaging Information & Mounting Pad Layout

SOD-123 Dimension — Unit: inch(mm)



SOD-123 Pad Layout — Unit: inch(mm)



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