

# SBA220AL / SBA230AL / SBA240AL

## EXTREME LOW VF SCHOTTKY RECTIFIER

**Voltage** 20-40 V **Current** 2 A

### Features

- Ultra low forward voltage drop, 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-123FL
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0006 ounces, 0.0173 grams

SOD-123FL



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

PARAMETER	SYMBOL	SBA220AL	SBA230AL	SBA240AL	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>	2			A
Peak forward surge current: 8.3ms single half sine-wave Superimposed on rated load	I <sub>FSM</sub>	30			A
Typical thermal resistance	R <sub>θJC</sub> <sup>(1)</sup>	32			°C/W
	R <sub>θJA</sub> <sup>(2)</sup>	200			
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		SBA220AL		SBA230AL		SBA240AL		UNIT
				TYP.	MAX.	TYP.	MAX.	TYP.	MAX.	
Forward voltage	$V_F$	$I_F = 10\text{mA}$	$T_J = 25^\circ\text{C}$	0.21	-	0.21	-	0.22	-	V
		$I_F = 0.5\text{A}$		0.33	-	0.34	-	0.37	-	
		$I_F = 2\text{A}$		-	0.46	-	0.49	-	0.53	
		$I_F = 10\text{mA}$	$T_J = 125^\circ\text{C}$	0.09	-	0.09	-	0.1	-	V
		$I_F = 0.5\text{A}$		0.24	-	0.26	-	0.27	-	
Reverse current	$I_R^{(3)}$	$V_R = 10\text{V}$	$T_J = 25^\circ\text{C}$	14	-	9	-	7.4	-	$\mu\text{A}$
		$V_R = 20\text{V}$		-	100	25	-	9.6	-	
		$V_R = 30\text{V}$		-	-	-	100	16	-	
		$V_R = 40\text{V}$		-	-	-	-	-	100	
		$V_R = 20\text{V}$	$T_J = 125^\circ\text{C}$	6.1	-	3.7	-	2.3	-	mA
		$V_R = 30\text{V}$		-	-	9.6	-	3.5	-	
		$V_R = 40\text{V}$		-	-	-	-	5.6	-	
		$V_R = 40\text{V}$		-	-	-	-	-	-	

Note : 1. Mounted on a FR4 PCB, single-sided copper, with 100cm<sup>2</sup> copper pad area.

2. Mounted on a FR4 PCB, single-sided copper, mini pad.

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

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## TYPICAL CHARACTERISTIC CURVES

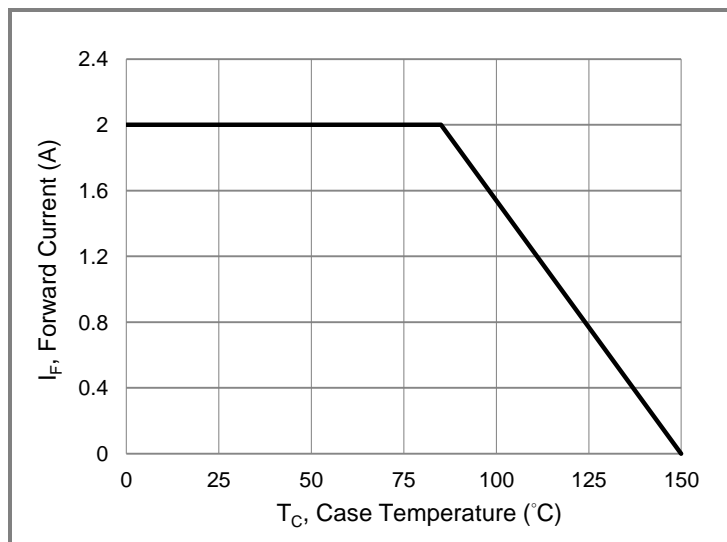


Fig.1 Forward Current Derating Curve

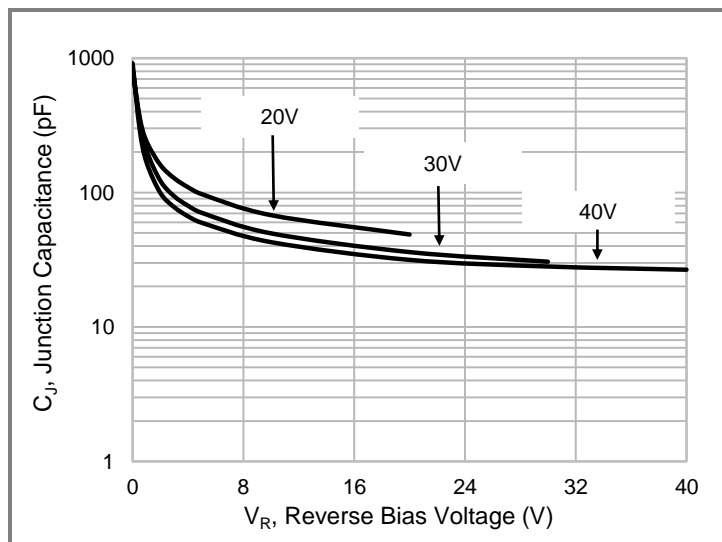


Fig. 2 Typical Junction Capacitance

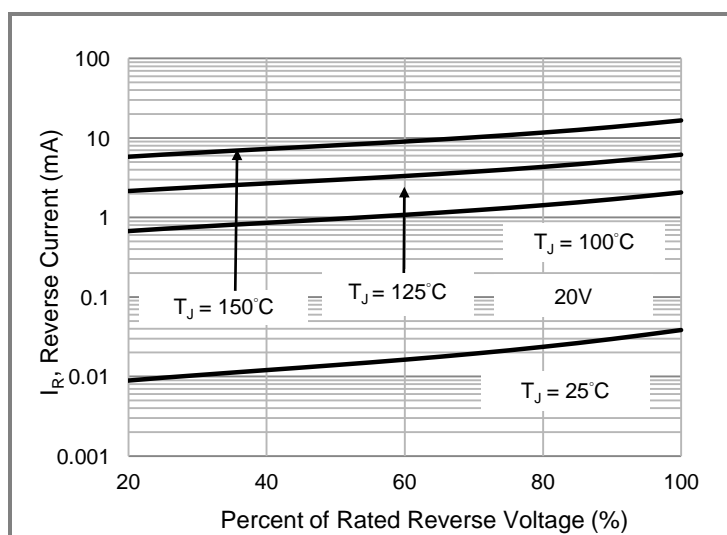


Fig.3 Typical Reverse Characteristics

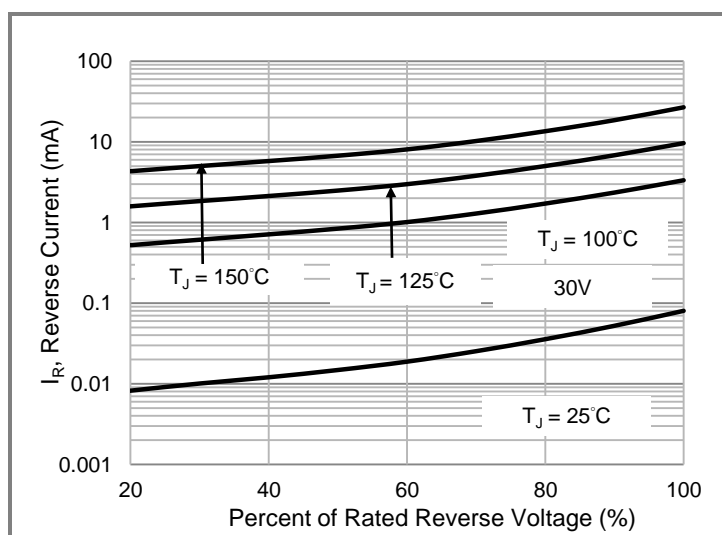


Fig.4 Typical Reverse Characteristics

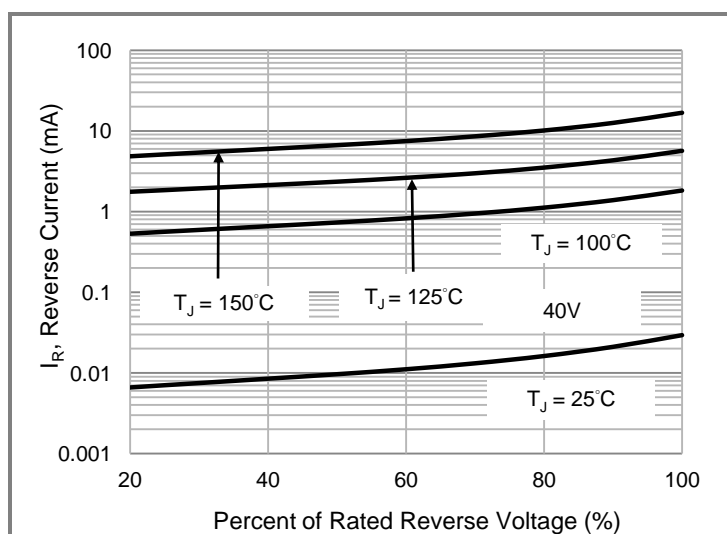


Fig.5 Typical Reverse Characteristics

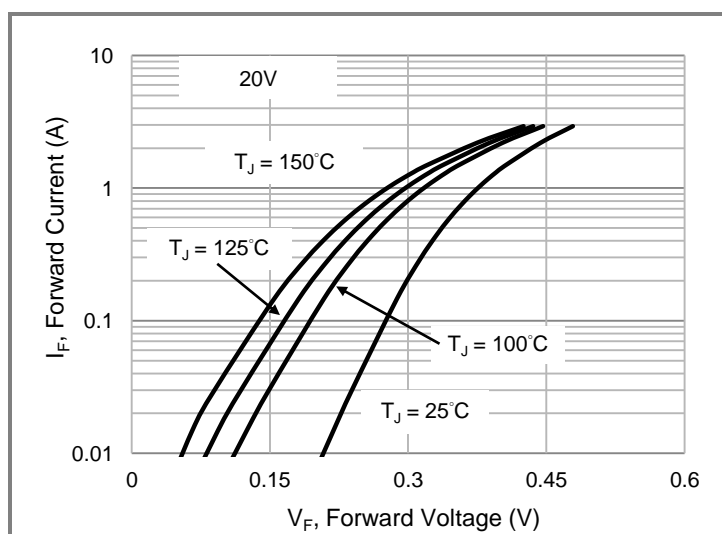


Fig.6 Typical Forward Characteristics

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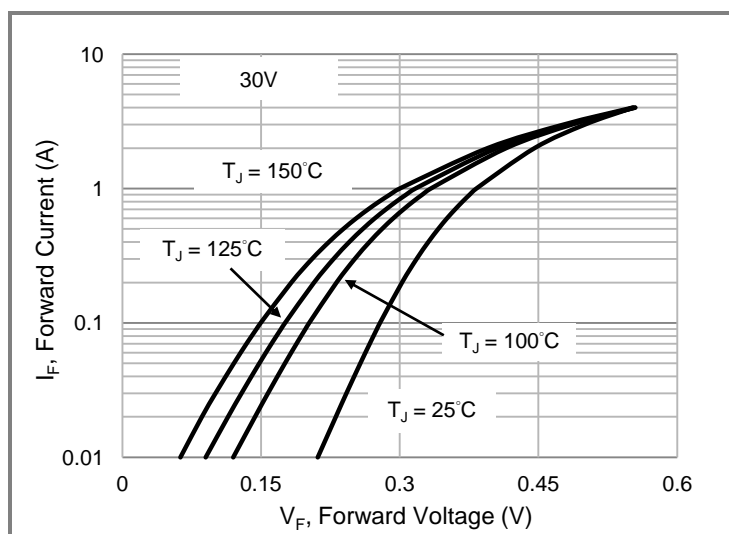


Fig.7 Typical Forward Characteristics

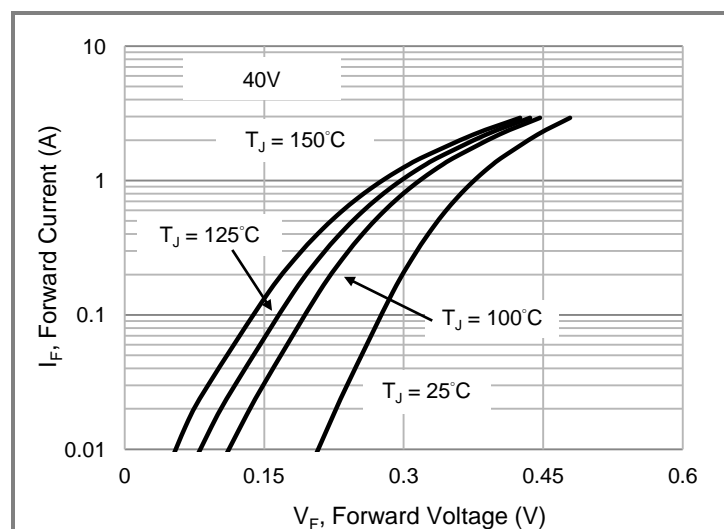


Fig.8 Typical Forward Characteristics

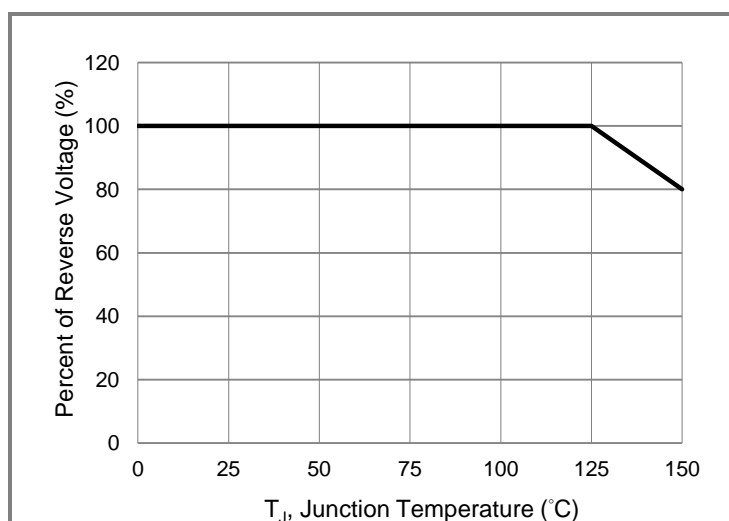


Fig.9 Operating Temperature Derating Curve



SBA220AL / SBA230AL / SBA240AL

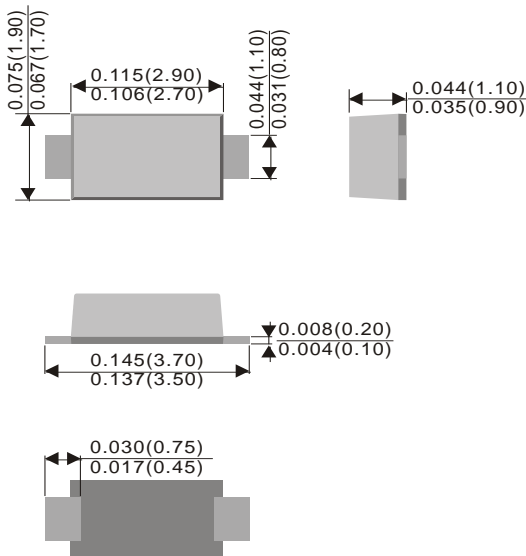
Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
SBA220AL_R1_00001	SOD-123FL	3K pcs / 7" reel	B7	Halogen free
SBA230AL_R1_00001	SOD-123FL	3K pcs / 7" reel	C7	Halogen free
SBA240AL_R1_00001	SOD-123FL	3K pcs / 7" reel	C33	Halogen free

Packaging Information & Mounting Pad Layout

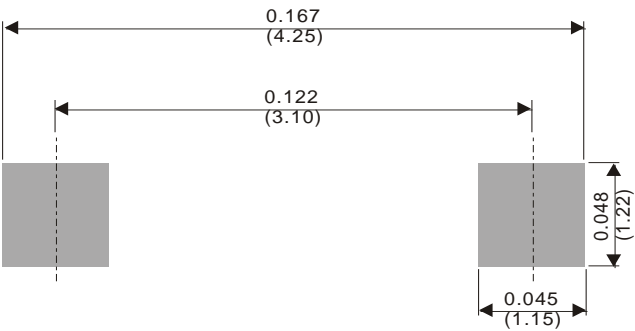
SOD-123FL Dimension

Unit: inch(mm)



SOD-123FL Pad Layout

Unit: inch(mm)





## **SBA220AL / SBA230AL / SBA240AL**

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