



# SBA220AL / SBA230AL / SBA240AL

## EXTREME LOW VF SCHOTTKY RECTIFIER

<b>Voltage</b>	<b>20-40 V</b>	<b>Current</b>	<b>2 A</b>
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### Features

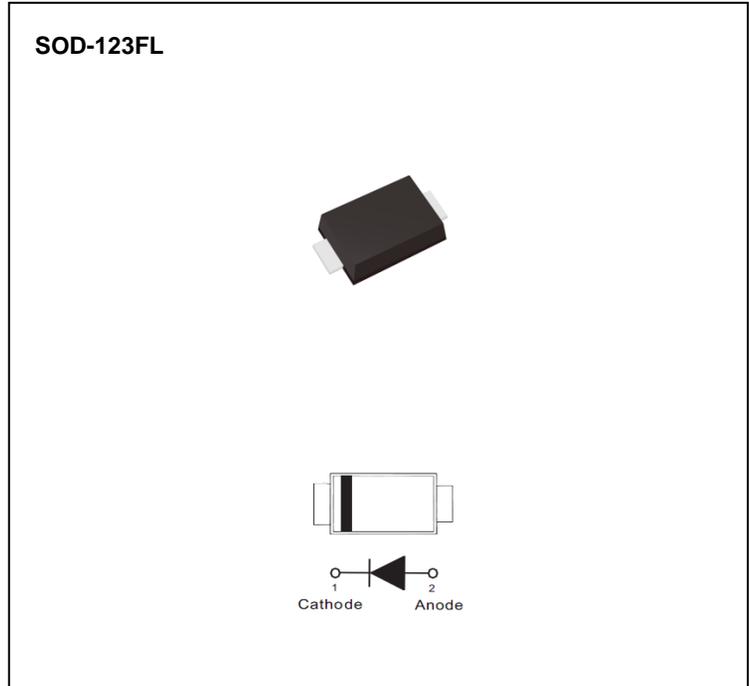
- Ultra low forward voltage drop, low power loss
- Fast switching speed
- Surface mount package
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### 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



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

PARAMETER	SYMBOL	SBA220AL	SBA230AL	SBA240AL	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	$I_{F(AV)}$	2			A
Peak forward surge current: 8.3ms single half sine-wave Superimposed on rated load	$I_{FSM}$	30			A
Typical thermal resistance	$R_{\theta JC}^{(1)}$	32			$^\circ\text{C/W}$
	$R_{\theta JA}^{(2)}$	200			
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	SBA220AL		SBA230AL		SBA240AL		UNIT
			TYP.	MAX.	TYP.	MAX.	TYP.	MAX.	
Forward voltage	$V_F$	$I_F = 10\text{mA}$	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	
		$T_J = 25^\circ\text{C}$							
Reverse current	$I_R^{(3)}$	$V_R = 10\text{V}$	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	
		$V_R = 20\text{V}$	6.1	-	3.7	-	2.3	-	mA
		$V_R = 30\text{V}$	-	-	9.6	-	3.5	-	
		$V_R = 40\text{V}$	-	-	-	-	5.6	-	

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

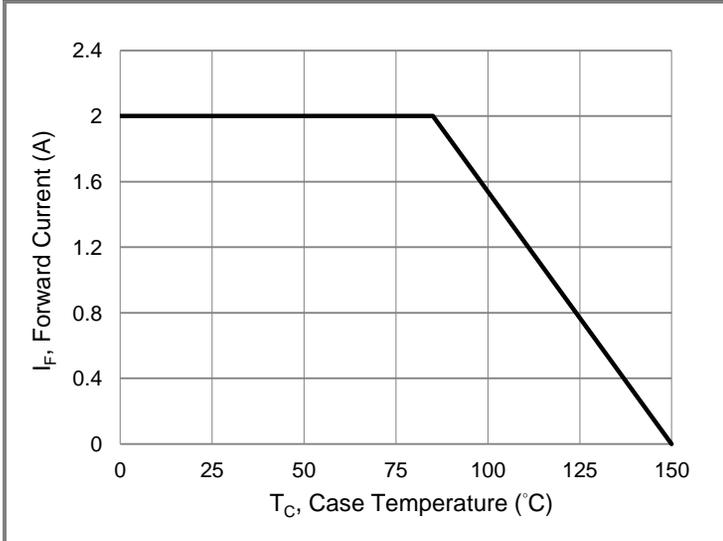


Fig.1 Forward Current Derating Curve

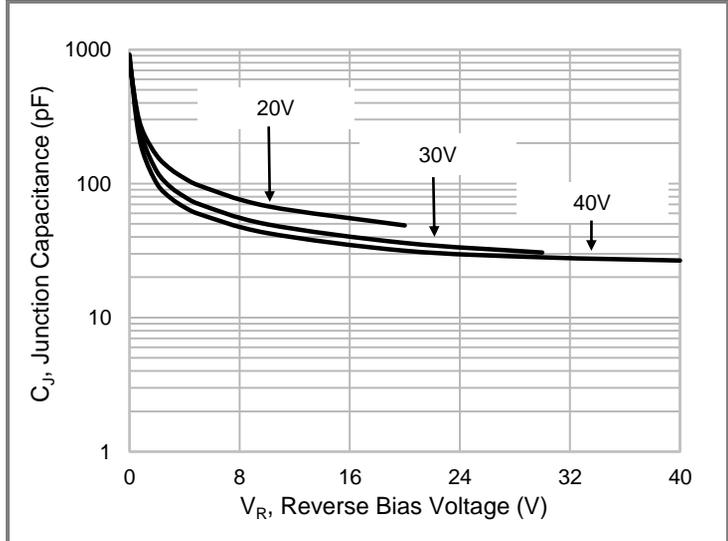


Fig. 2 Typical Junction Capacitance

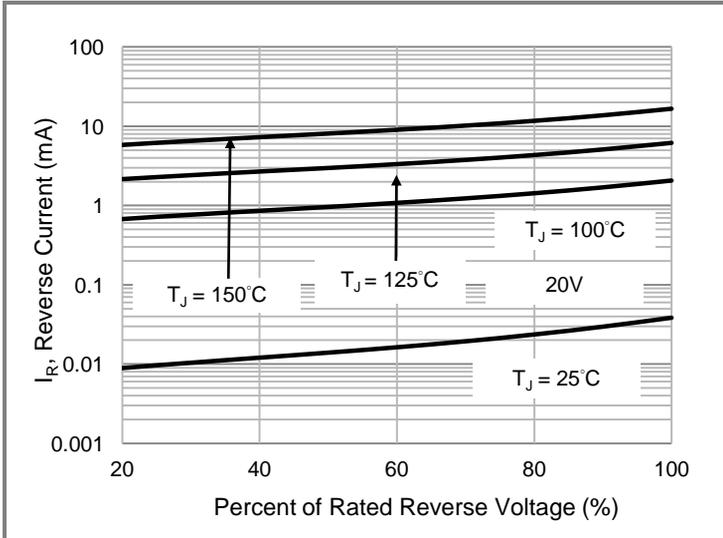


Fig.3 Typical Reverse Characteristics

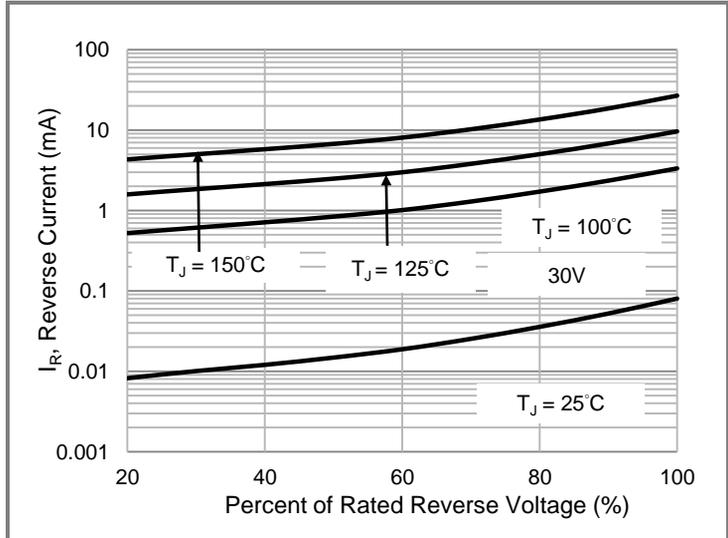


Fig.4 Typical Reverse Characteristics

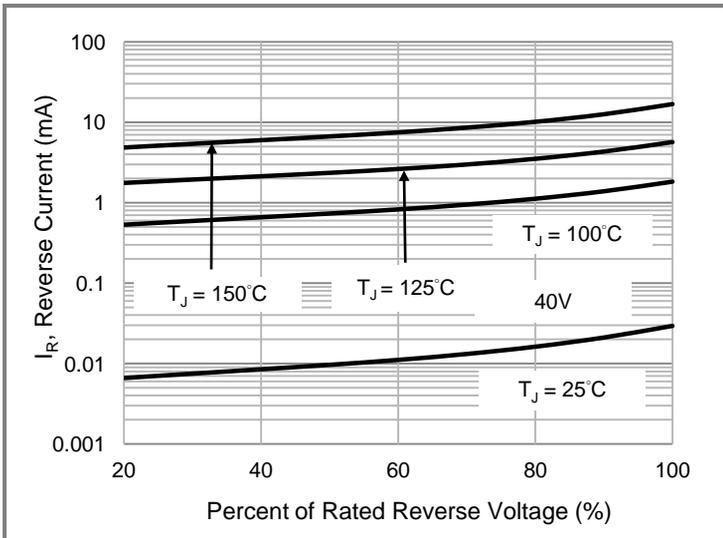


Fig.5 Typical Reverse Characteristics

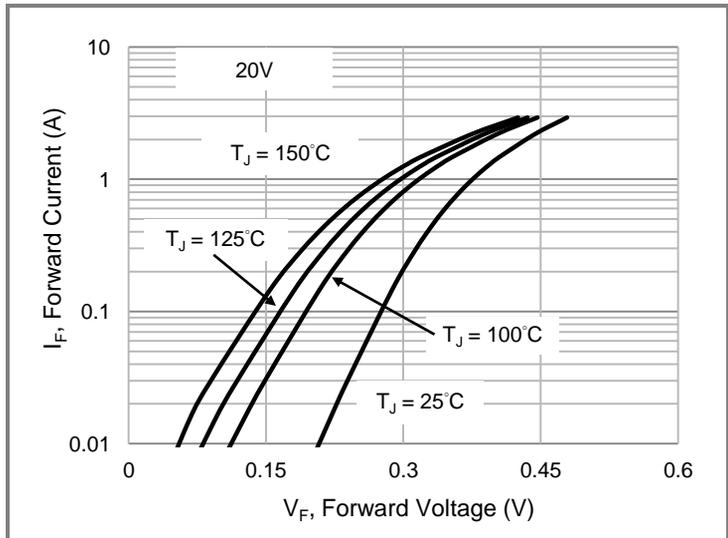
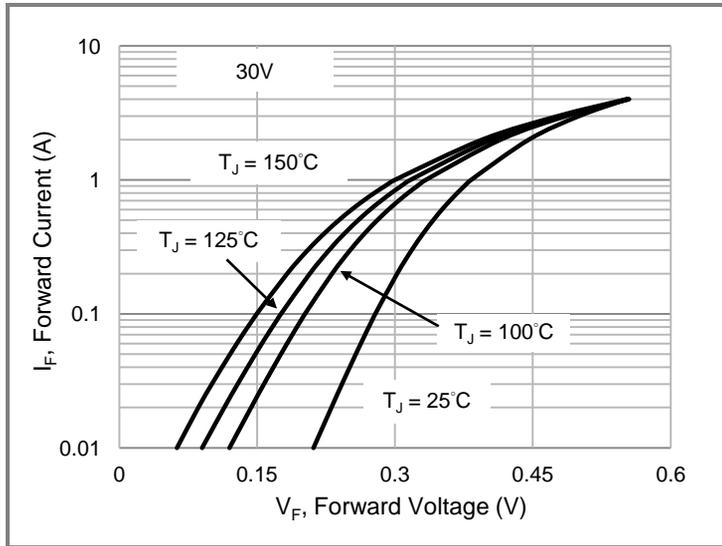


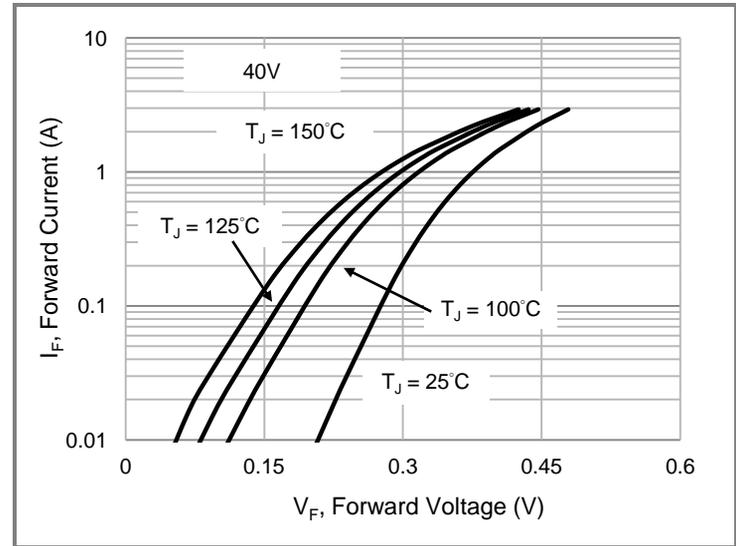
Fig.6 Typical Forward Characteristics



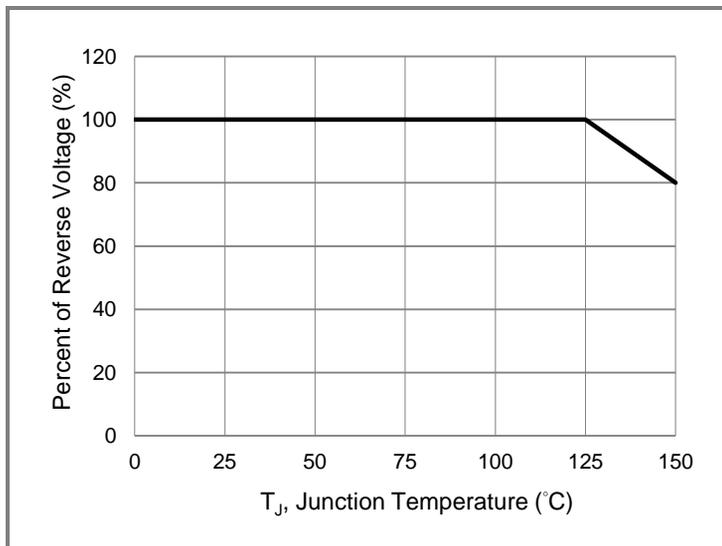
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**Fig.7 Typical Forward Characteristics**



**Fig.8 Typical Forward Characteristics**



**Fig.9 Operating Temperature Derating Curve**

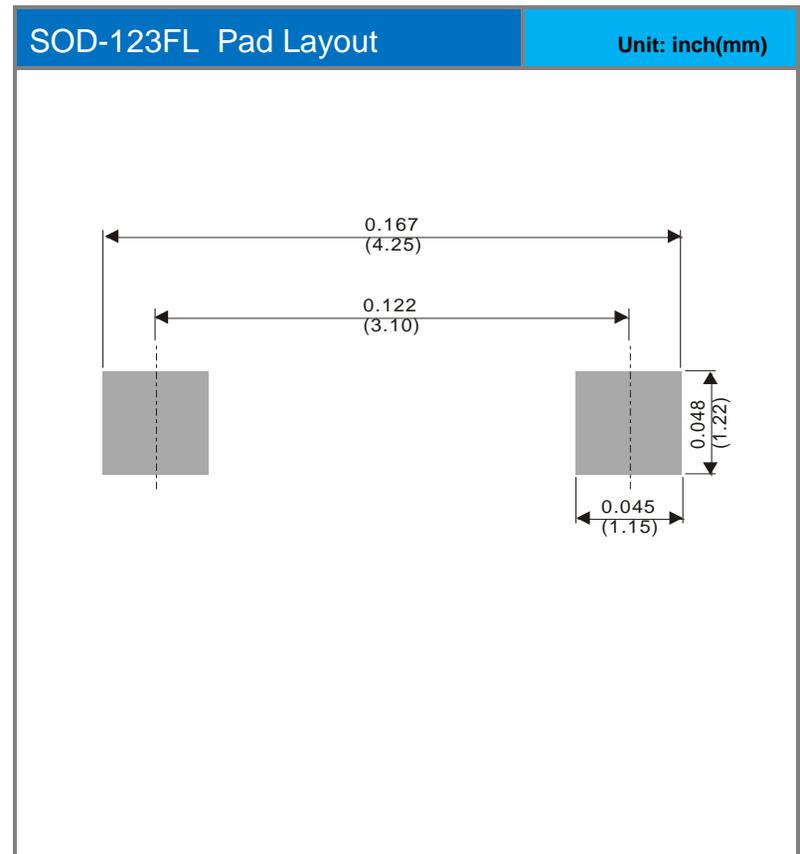
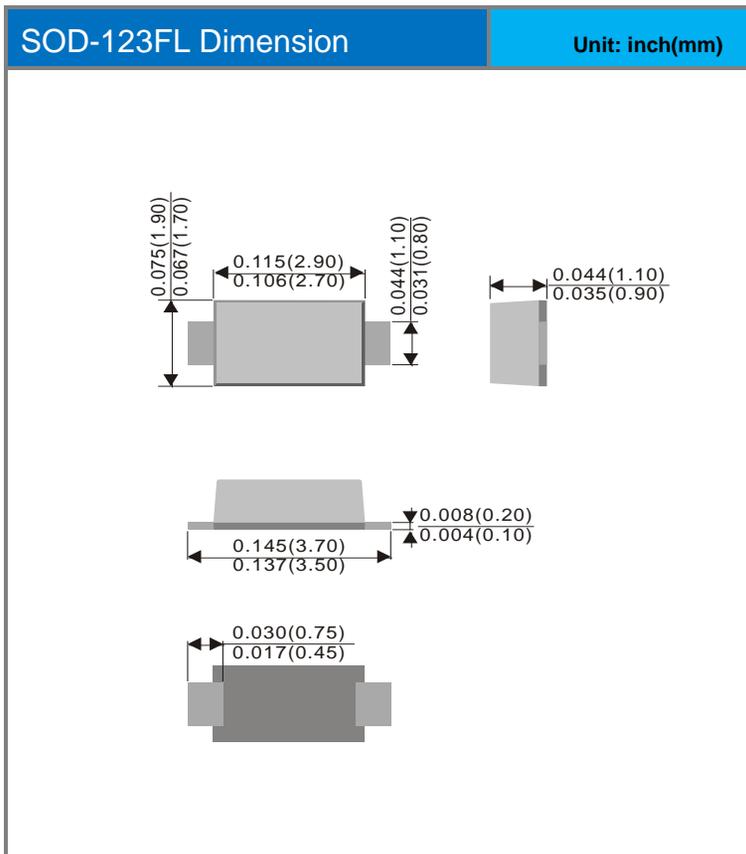


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## Part No Packing Code Version

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





## **SBA220AL / SBA230AL / SBA240AL**

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