

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 _{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 _{θJC} ⁽¹⁾	32			°C/W
	R _{θJA} ⁽²⁾	200			
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		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	-	μA
		$V_R = 20\text{V}$		-	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	-	

Note : 1. Mounted on a FR4 PCB, single-sided copper, with 100cm² 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

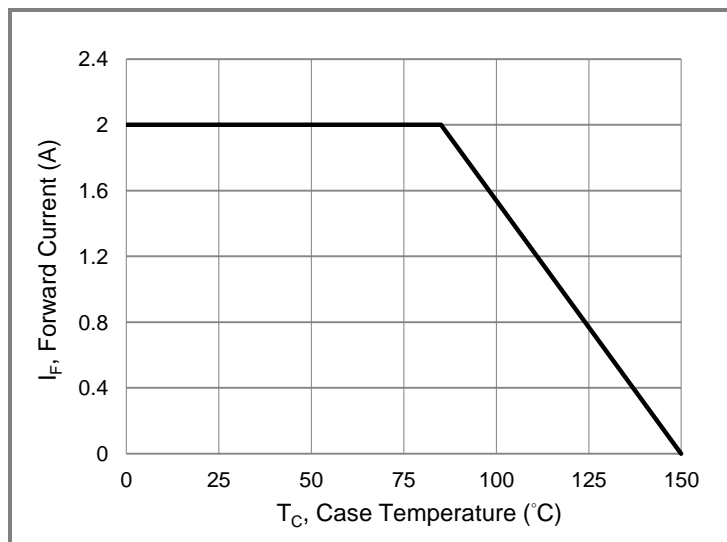


Fig.1 Forward Current Derating Curve

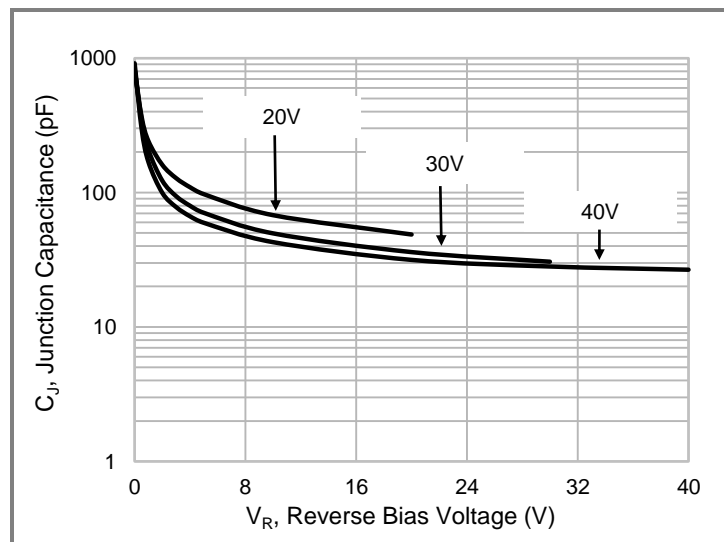


Fig. 2 Typical Junction Capacitance

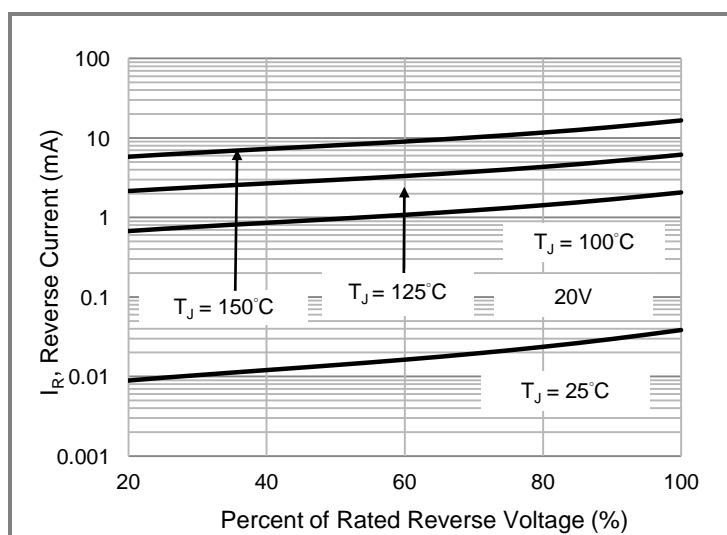


Fig.3 Typical Reverse Characteristics

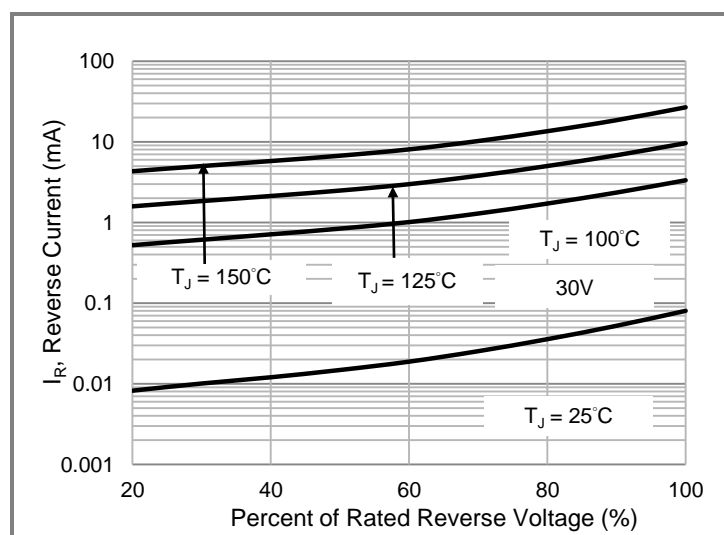


Fig.4 Typical Reverse Characteristics

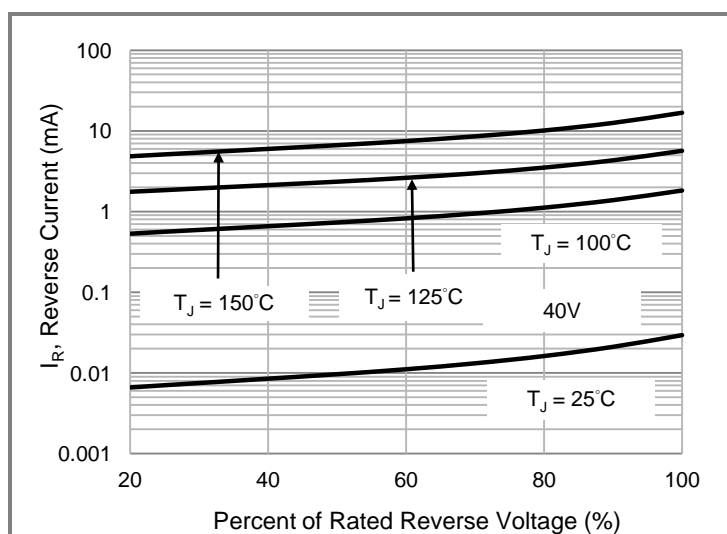


Fig.5 Typical Reverse Characteristics

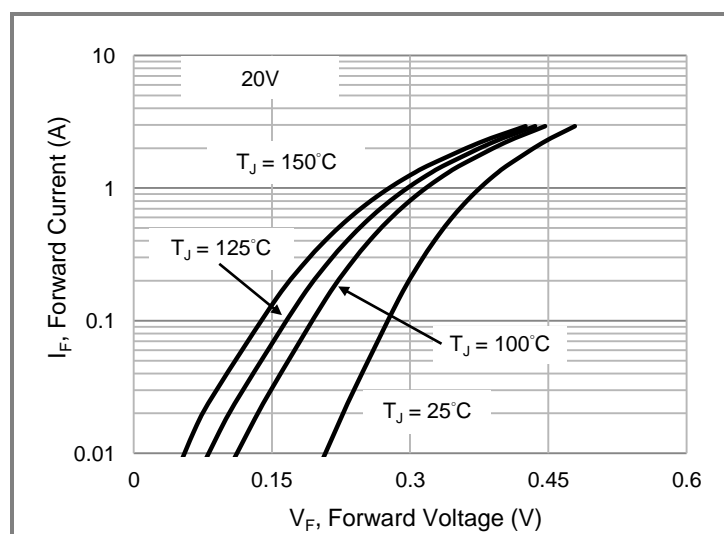


Fig.6 Typical Forward Characteristics

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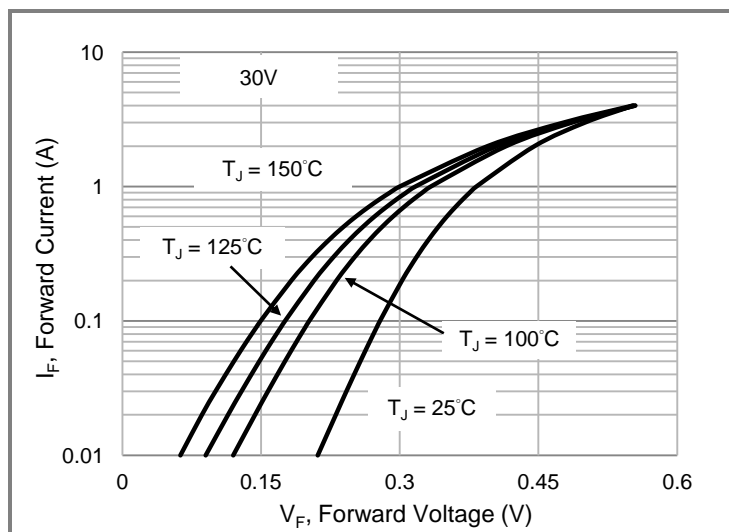


Fig.7 Typical Forward Characteristics

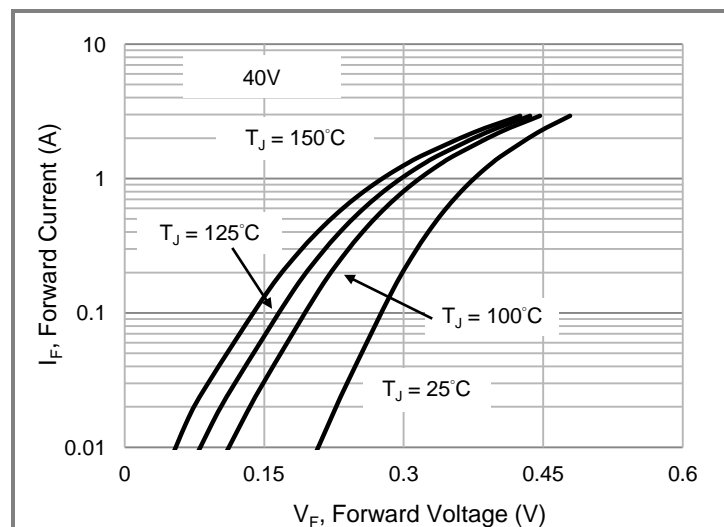


Fig.8 Typical Forward Characteristics

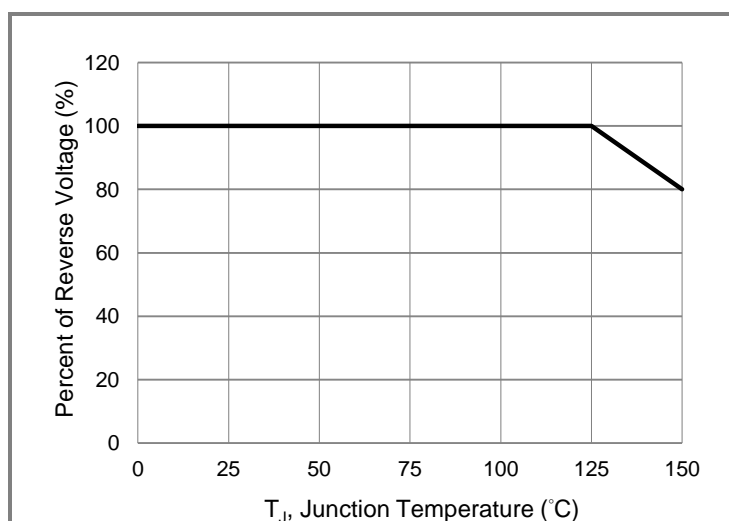


Fig.9 Operating Temperature Derating Curve



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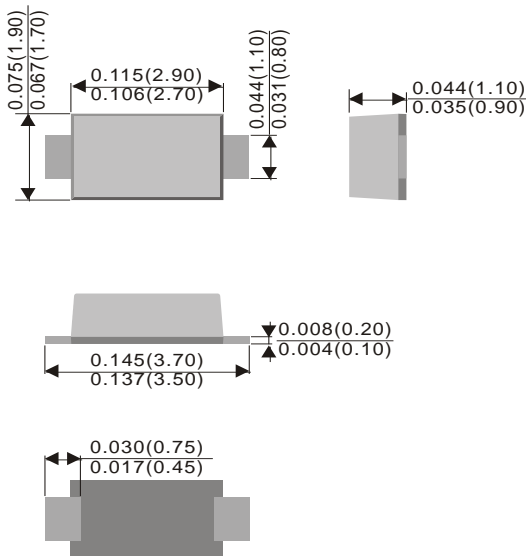
Part No Packing Code Version

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

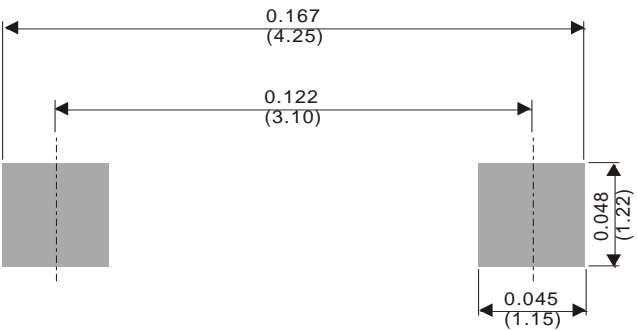
SOD-123FL Dimension

Unit: inch(mm)



SOD-123FL Pad Layout

Unit: inch(mm)





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