



SBA120CS / SBA130CS / SBA140CS

EXTREME LOW VF SCHOTTKY RECTIFIER

Voltage	20-40 V	Current	1 A
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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-323
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.00014 ounces, 0.0041 grams

SOD-323



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

PARAMETER	SYMBOL	SBA120CS	SBA130CS	SBA140CS	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}	8			A
Typical thermal resistance	$R_{\theta JC}^{(1)}$	230			$^\circ\text{C/W}$
	$R_{\theta JA}^{(2)}$	650			
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	SBA120CS		SBA130CS		SBA140CS		UNIT									
			TYP.	MAX.	TYP.	MAX.	TYP.	MAX.										
Forward voltage	V_F	$I_F = 10\text{mA}$	0.22	-	0.22	-	0.23	-	V									
		$I_F = 0.5\text{A}$								0.35	-	0.36	-	0.39				
		$I_F = 1\text{A}$													0.45	0.47	0.51	
		$I_F = 10\text{mA}$	0.09	-	0.1	-	0.1	-										
$I_F = 0.5\text{A}$	0.27	0.3							0.33									
Reverse current	$I_R^{(3)}$	$V_R = 10\text{V}$	7.5	-	5.9	-	3.6	-	μA									
		$V_R = 20\text{V}$								-	100	10	-	4.2				
		$V_R = 30\text{V}$													-	-	100	6.1
		$V_R = 40\text{V}$																
		$V_R = 20\text{V}$	3.2	-	2.2	-	1.2	-										
		$V_R = 30\text{V}$								-	-	3.9	-	1.7				
		$V_R = 40\text{V}$													-	-	-	2.3

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

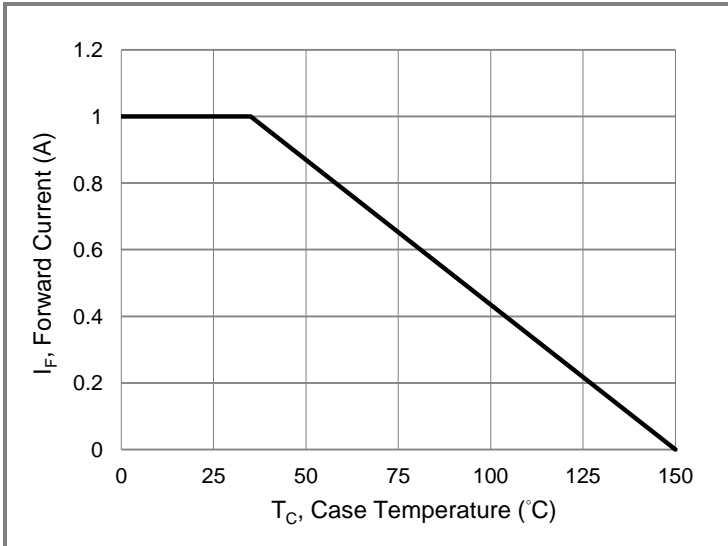


Fig.1 Forward Current Derating Curve

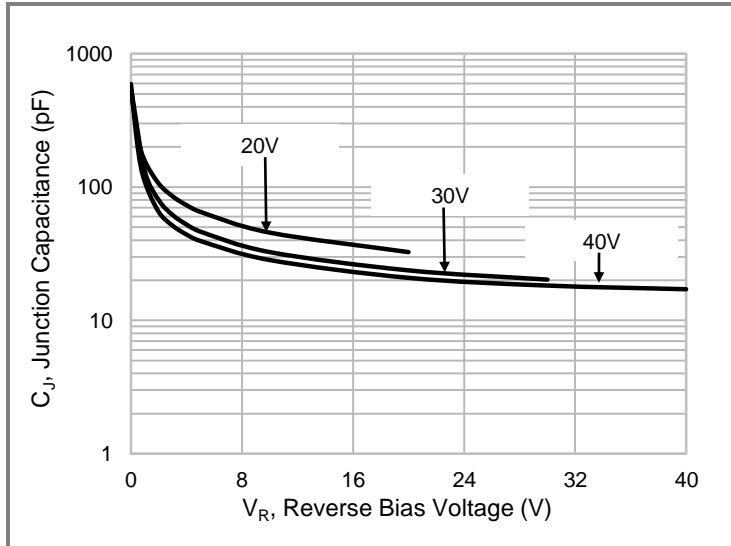


Fig. 2 Typical Junction Capacitance

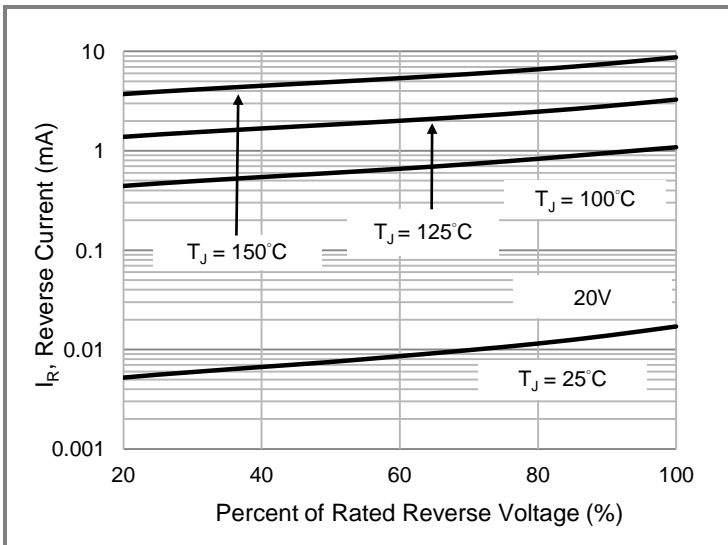


Fig.3 Typical Reverse Characteristics

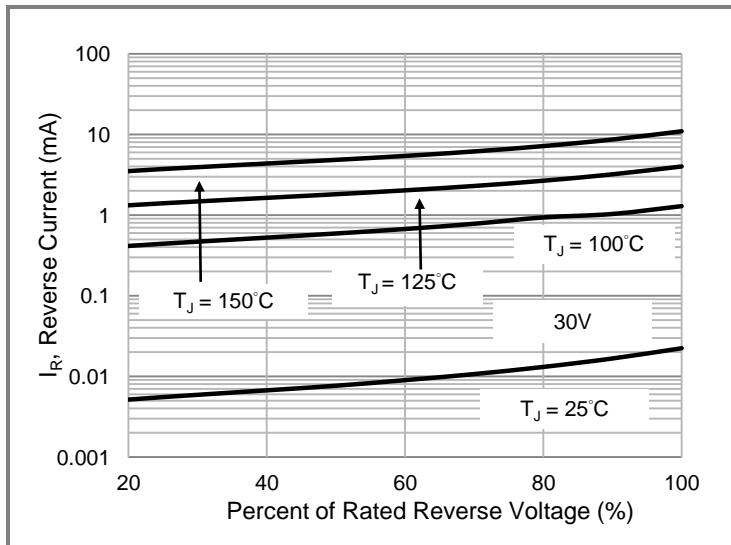


Fig.4 Typical Reverse Characteristics

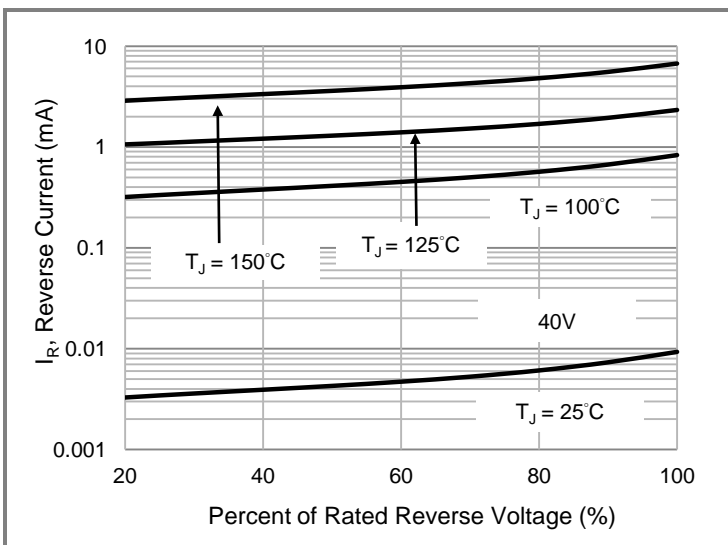


Fig.5 Typical Reverse Characteristics

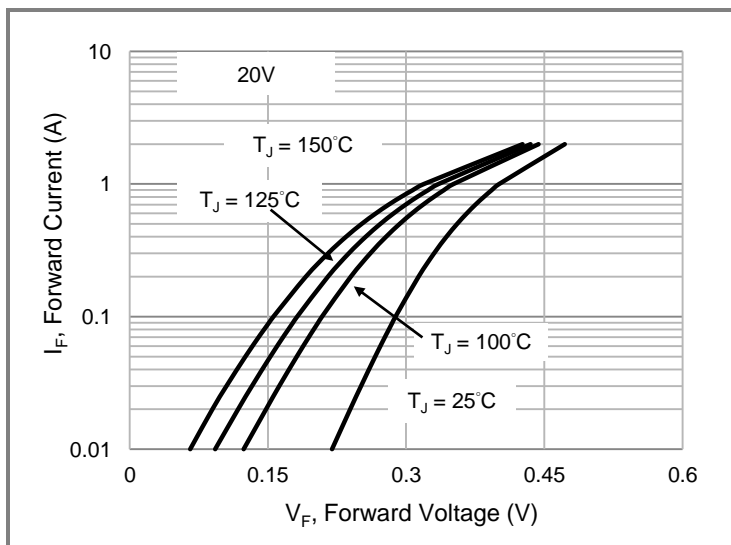


Fig.6 Typical Forward Characteristics



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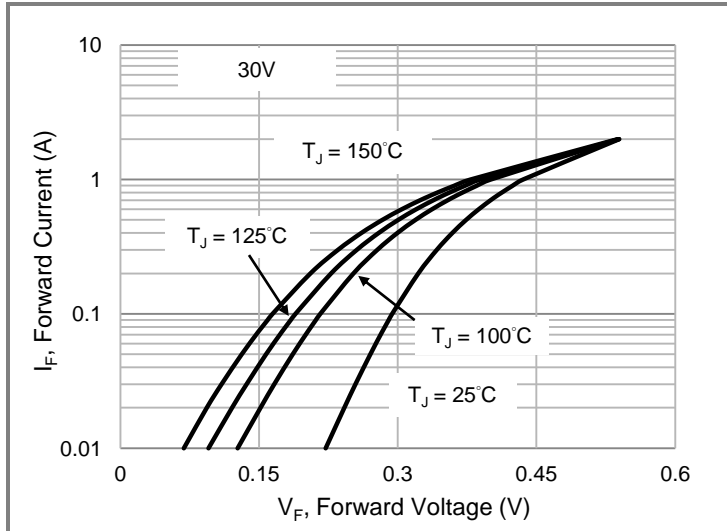


Fig.7 Typical Forward Characteristics

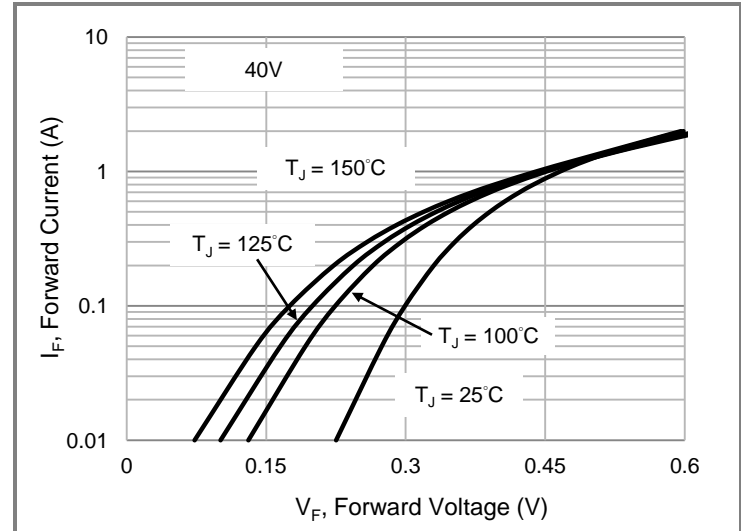


Fig.8 Typical Forward Characteristics

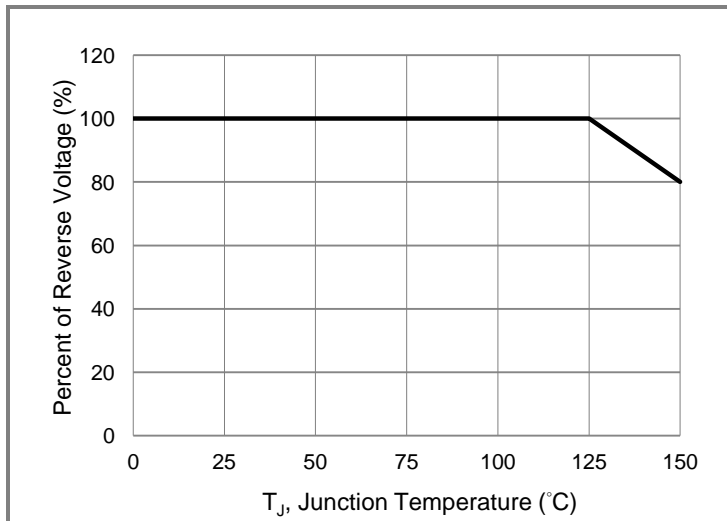


Fig.9 Operating Temperature Derating Curve

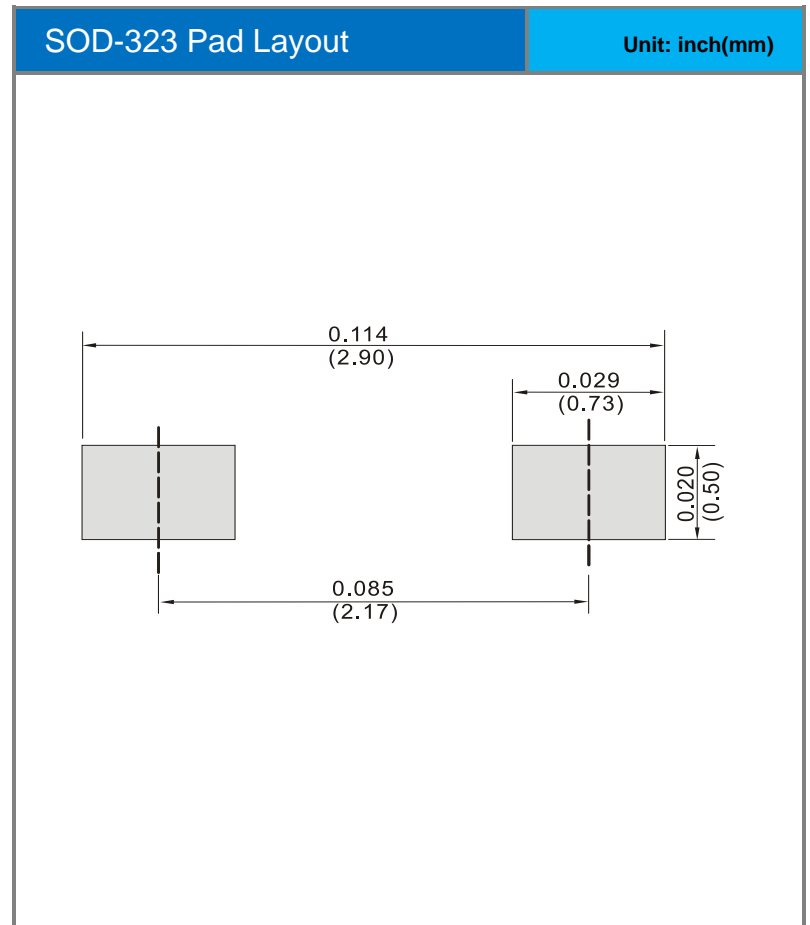
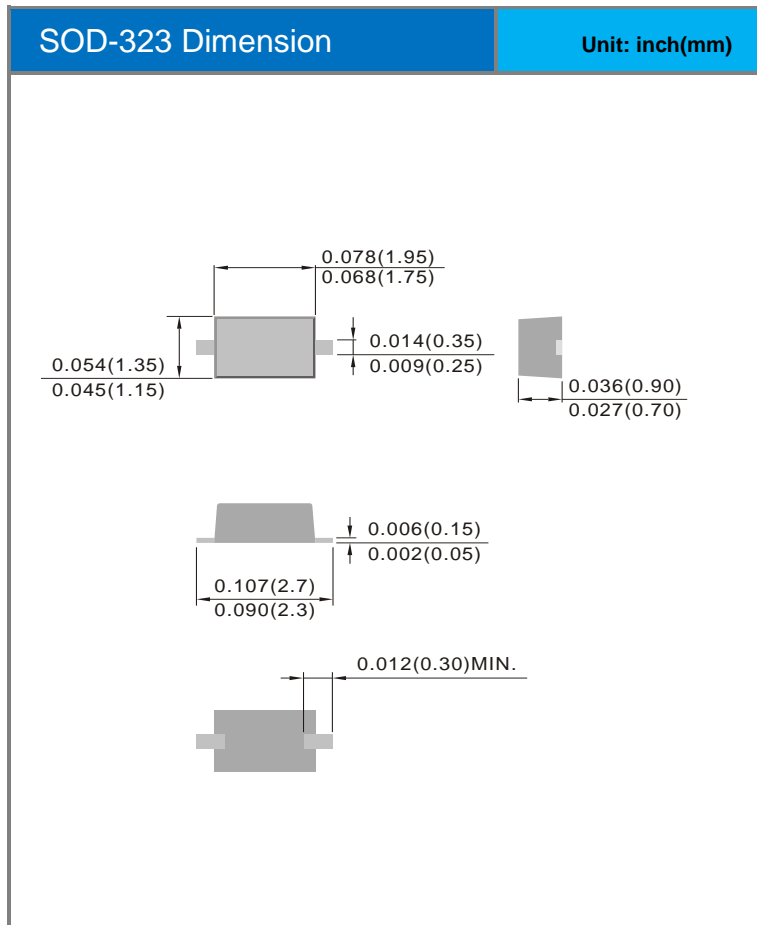


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Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
SBA120CS_R1_00001	SOD-323	5K pcs / 7" reel	A7	Halogen free
SBA130CS_R1_00001	SOD-323	5K pcs / 7" reel	B7	Halogen free
SBA140CS_R1_00001	SOD-323	5K pcs / 7" reel	C7	Halogen free

Packaging Information & Mounting Pad Layout





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