

SBA120CH-AU / SBA130CH-AU / SBA140CH-AU

Surface Mount Extreme Low V_F 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
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

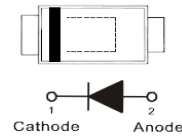
Applications

- Low voltage rectification
- Reverse polarity protection
- Low power consumption applications

Mechanical Data

- Case: Molded plastic, SOD-323HE
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.005 grams

SOD-323HE



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

PARAMETER	SYMBOL	SBA120CH-AU	SBA130CH-AU	SBA140CH-AU	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	(Note 1) $R_{\theta JC}$	50			$^\circ\text{C/W}$
	(Note 2) $R_{\theta JA}$	300			
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	SBA120CH-AU		SBA130CH-AU		SBA140CH-AU		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
		$T_J = 25^\circ\text{C}$														
Reverse current	I_R	$V_R = 10\text{V}$	7.5	-	5.9	-	3.6	-	μA							
		$V_R = 20\text{V}$								-	100	10	-	4.2		
		$V_R = 30\text{V}$													100	6.1
		$V_R = 40\text{V}$													-	-
Reverse current	I_R	$V_R = 20\text{V}$	3.2	-	2.2	-	1.2	-	mA							
		$V_R = 30\text{V}$								-	3.9	-	1.7			
		$V_R = 40\text{V}$												-	-	2.3
		$T_J = 125^\circ\text{C}$														

NOTES : 1. Mounted on a FR4 PCB, single-sided copper, with 100cm² copper pad area.
2. Mounted on a FR4 PCB, single-sided copper, standard footprint.

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TYPICAL CHARACTERISTIC CURVES

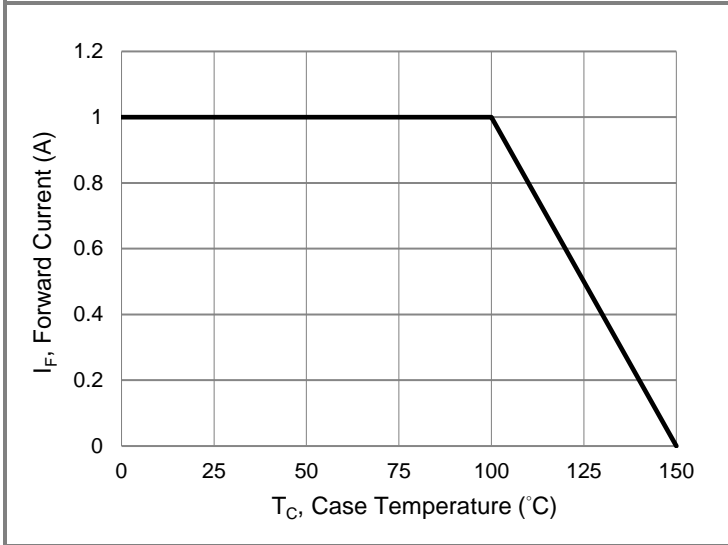


Fig.1 Forward Current Derating Curve

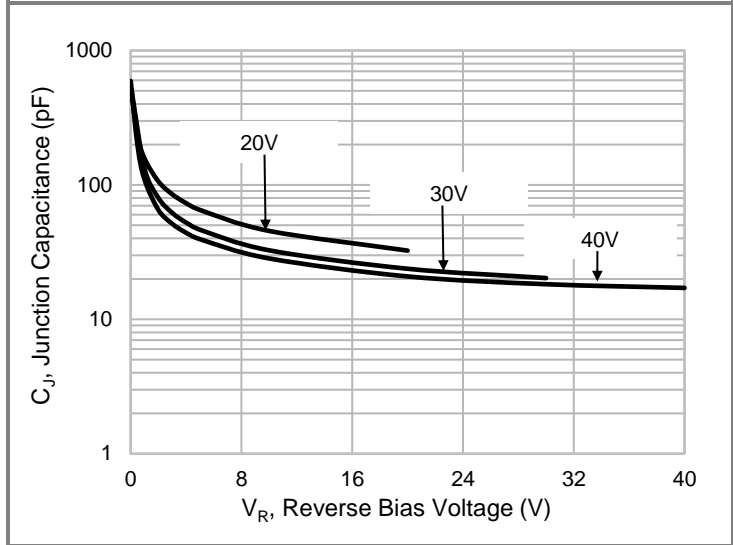


Fig. 2 Typical Junction Capacitance

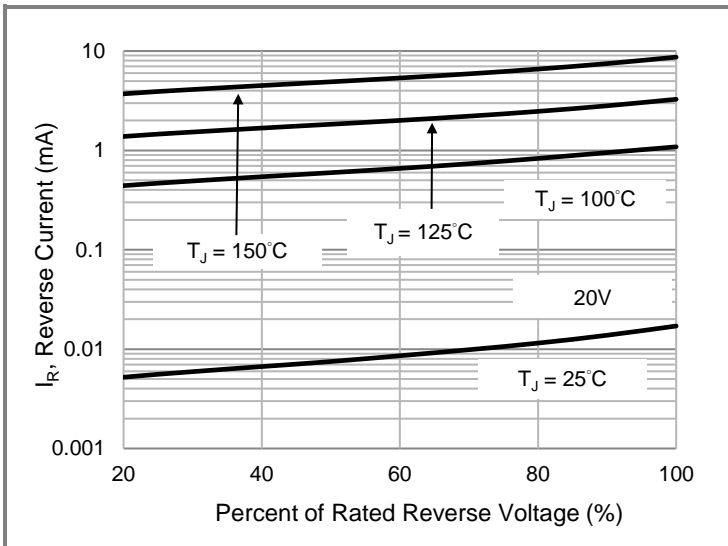


Fig.3 Typical Reverse Characteristics

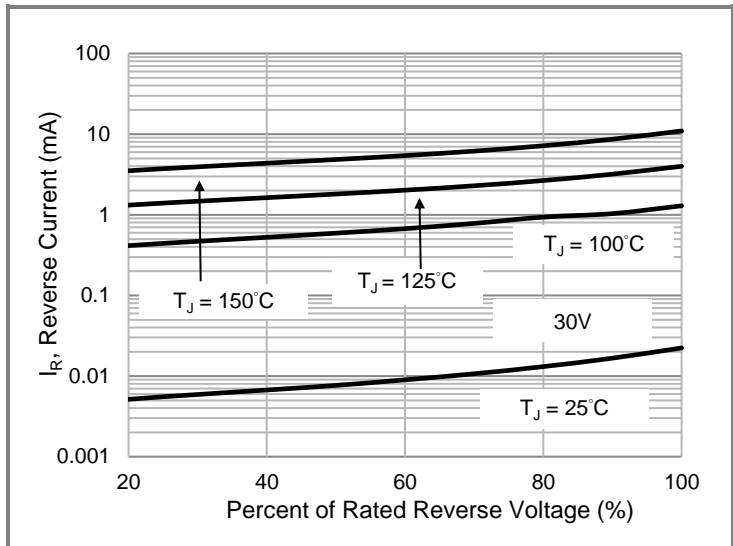


Fig.4 Typical Reverse Characteristics

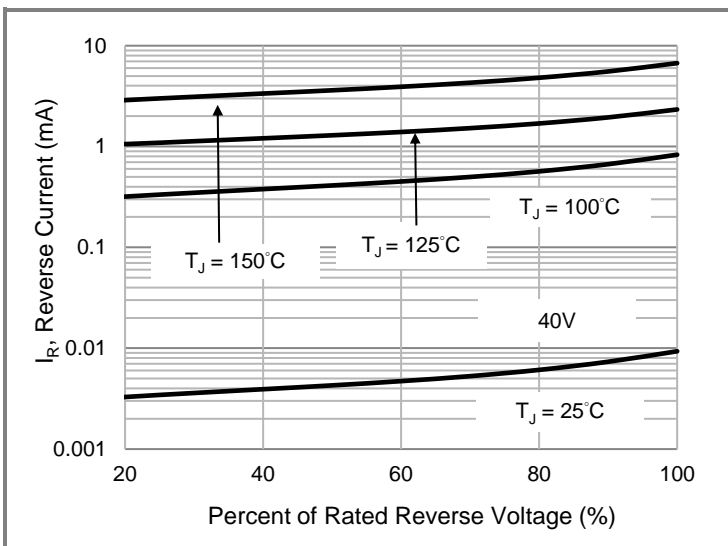


Fig.5 Typical Reverse Characteristics

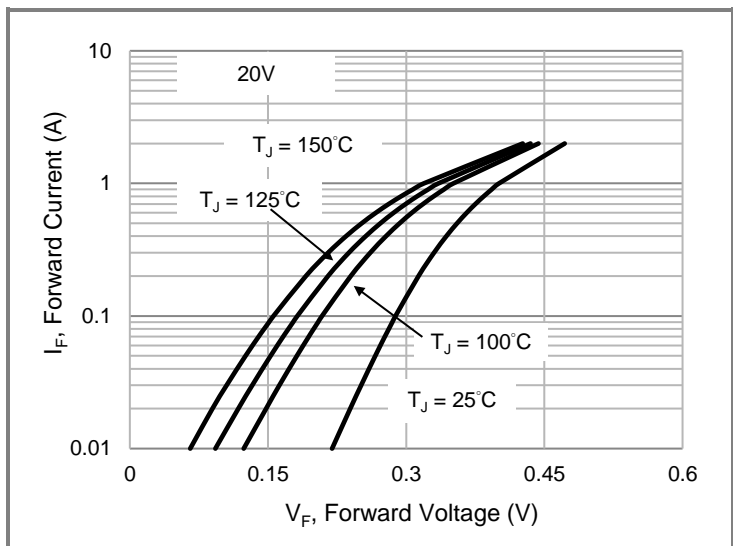


Fig.6 Typical Forward Characteristics

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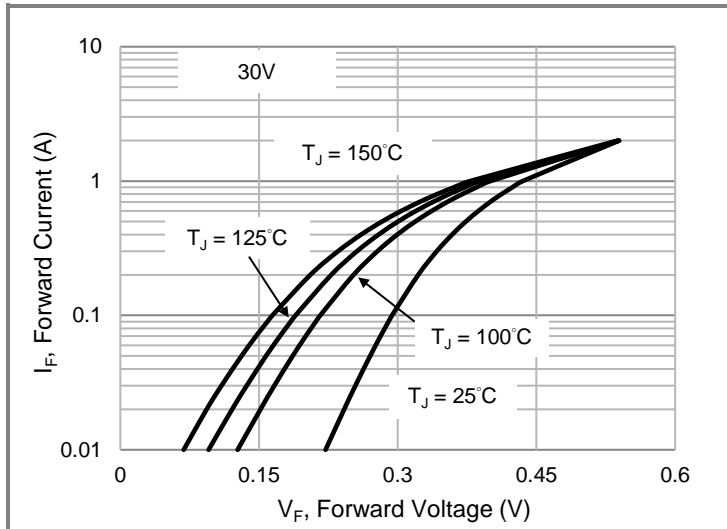


Fig.7 Typical Forward Characteristics

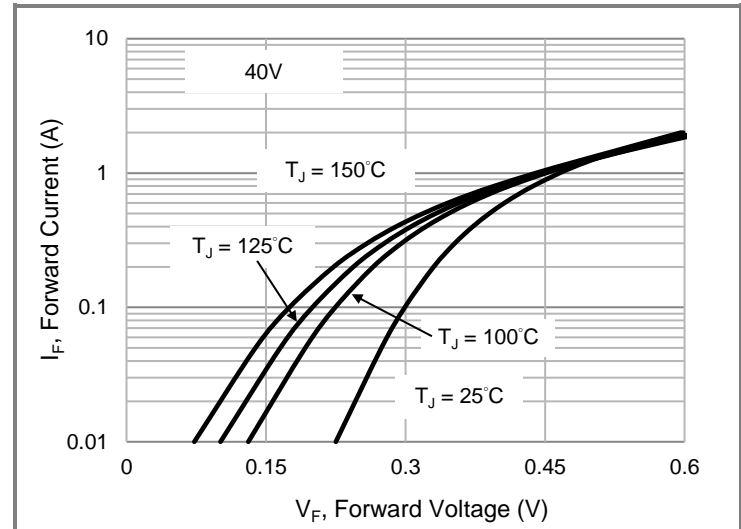


Fig.8 Typical Forward Characteristics

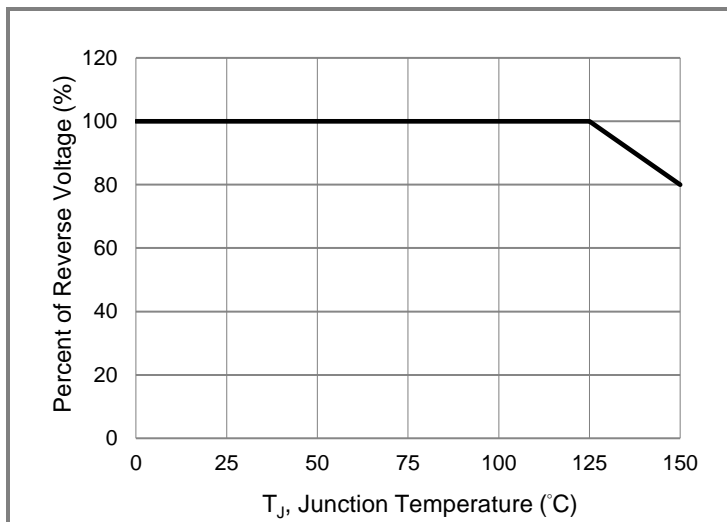


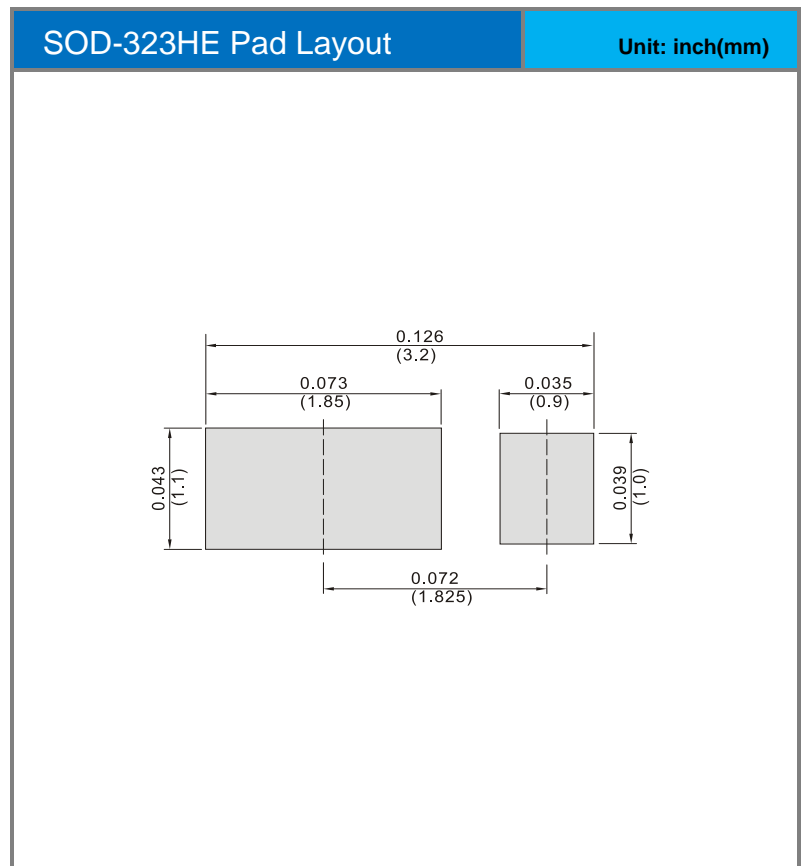
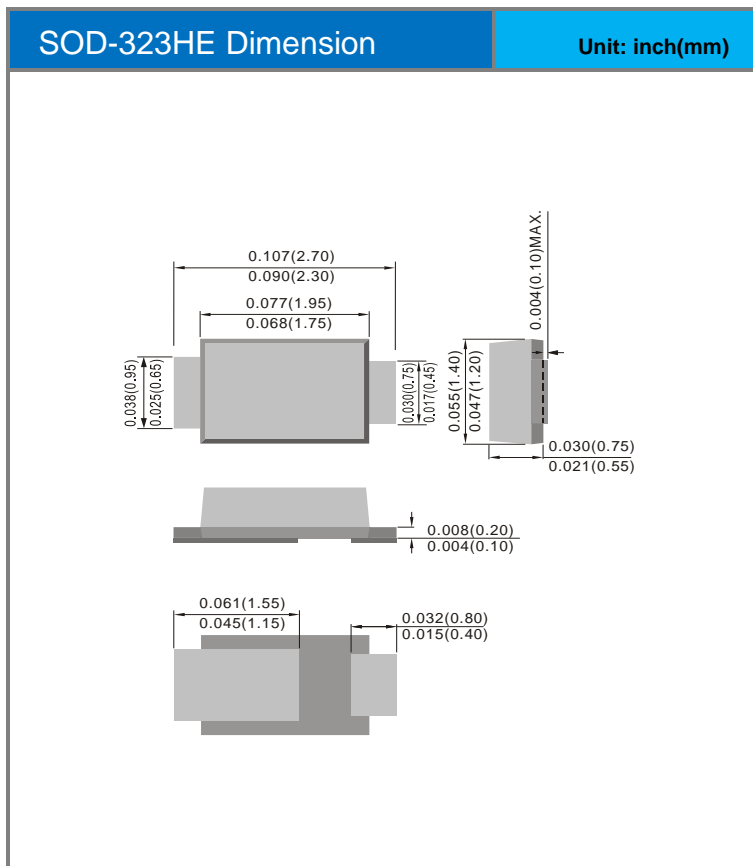
Fig.9 Operating Temperature Derating Curve

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Product and Packing Information

Part No.	Package Type	Packing Type	Marking
SBA120CH-AU	SOD-323HE	5K pcs / 7" reel	B7
SBA130CH-AU	SOD-323HE	5K pcs / 7" reel	A7
SBA140CH-AU	SOD-323HE	5K pcs / 7" reel	C7

Packaging Information & Mounting Pad Layout



SBA120CH-AU / SBA130CH-AU / SBA140CH-AU

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