

SBA120CH / SBA130CH / SBA140CH

EXTREME LOW VF SCHOTTKY RECTIFIER

Voltage

20-40 V

Current

1 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

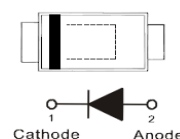
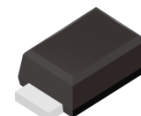
Applications

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

Mechanical Data

- Case: Molded plastic, SOD-323HE
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0002 ounces, 0.005 grams

SOD-323HE



Maximum Ratings (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	SBA120CH	SBA130CH	SBA140CH	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	R _{θJC} ⁽¹⁾	50			°C/W
	R _{θJA} ⁽²⁾	300			
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		SBA120CH		SBA130CH		SBA140CH		UNIT
				TYP.	MAX.	TYP.	MAX.	TYP.	MAX.	
Forward voltage	V _F	I _F = 10mA	T _J = 25 °C	0.22	-	0.22	-	0.23	-	V
		I _F = 0.5A		0.35	-	0.36	-	0.39	-	
		I _F = 1A		-	0.45	-	0.47	-	0.51	
		I _F = 10mA	T _J = 125 °C	0.09	-	0.1	-	0.1	-	V
		I _F = 0.5A		0.27	-	0.3	-	0.33	-	
Reverse current	I _R ⁽³⁾	V _R = 10V	T _J = 25 °C	7.5	-	5.9	-	3.6	-	μA
		V _R = 20V		-	100	10	-	4.2	-	
		V _R = 30V		-	-	-	100	6.1	-	
		V _R = 40V		-	-	-	-	-	100	
		V _R = 20V	T _J = 125 °C	3.2	-	2.2	-	1.2	-	mA
		V _R = 30V		-	-	3.9	-	1.7	-	
		V _R = 40V		-	-	-	-	2.3	-	
		V _R = 40V		-	-	-	-	-	-	

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

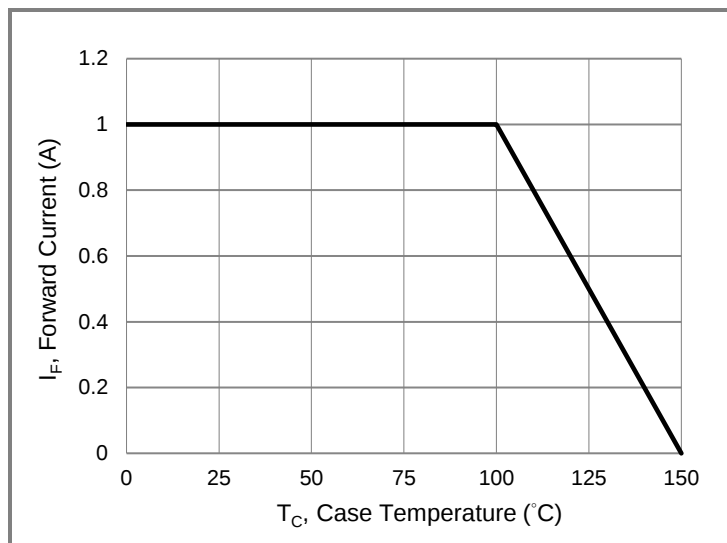


Fig.1 Forward Current Derating Curve

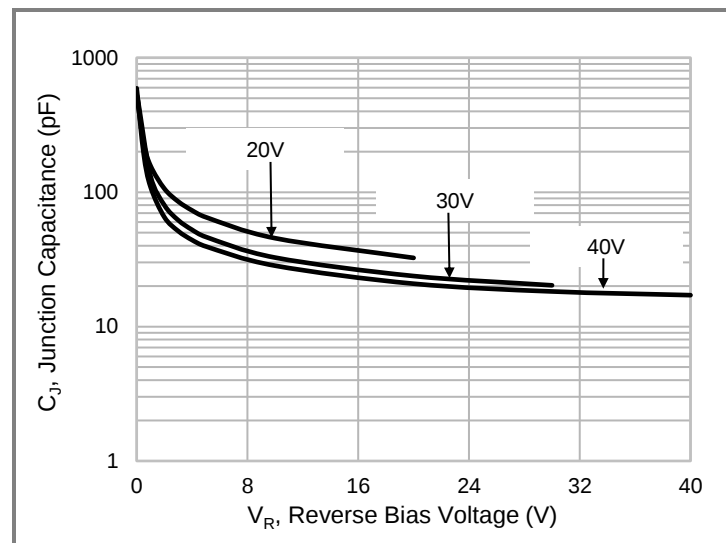


Fig. 2 Typical Junction Capacitance

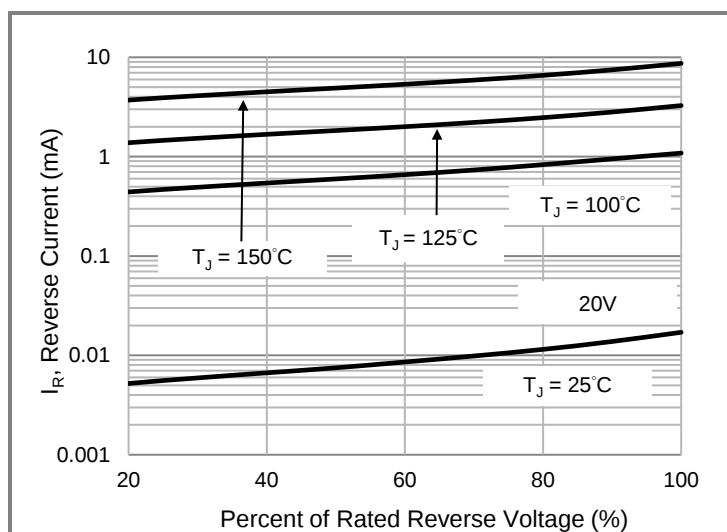


Fig.3 Typical Reverse Characteristics

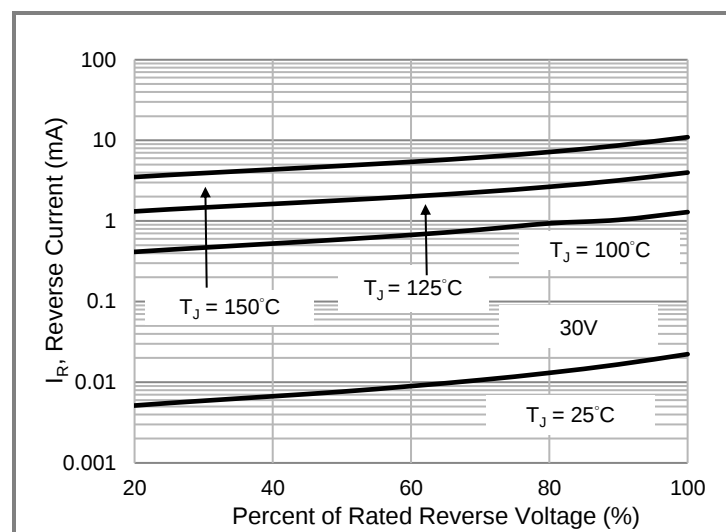


Fig.4 Typical Reverse Characteristics

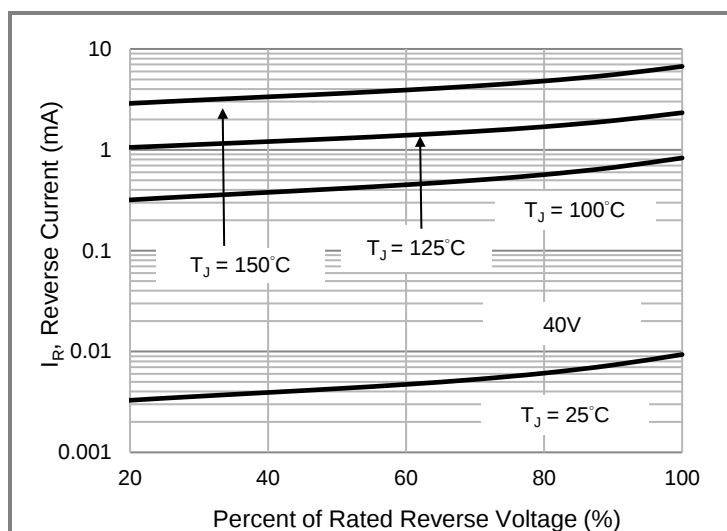


Fig.5 Typical Reverse Characteristics

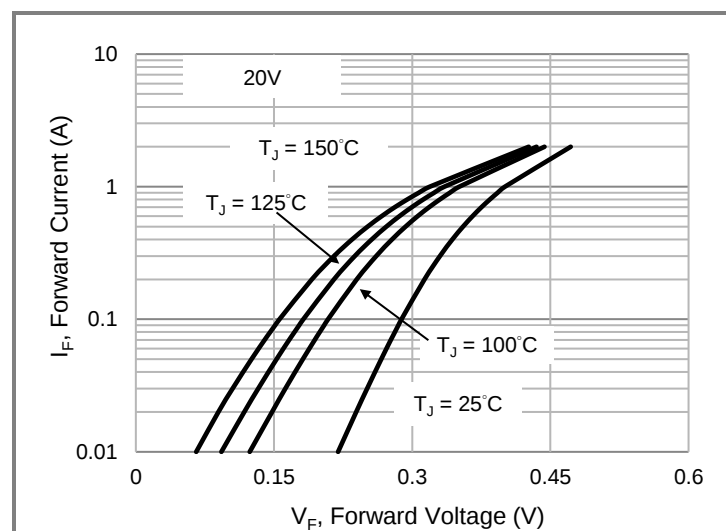


Fig.6 Typical Forward Characteristics

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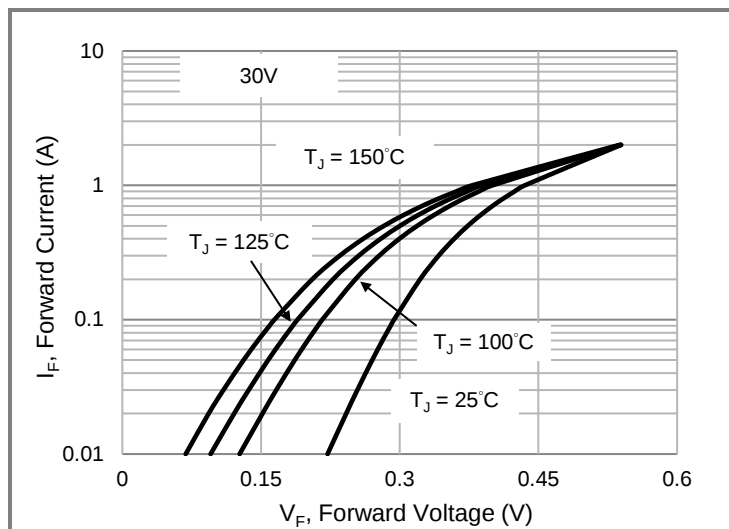


Fig.7 Typical Forward Characteristics

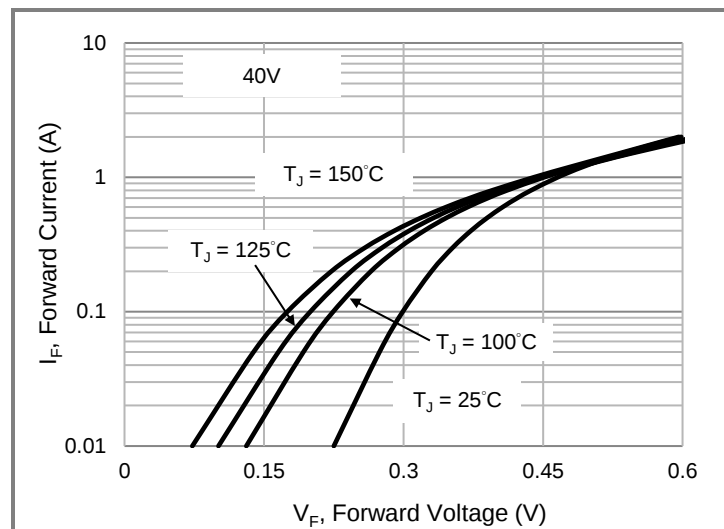


Fig.8 Typical Forward Characteristics

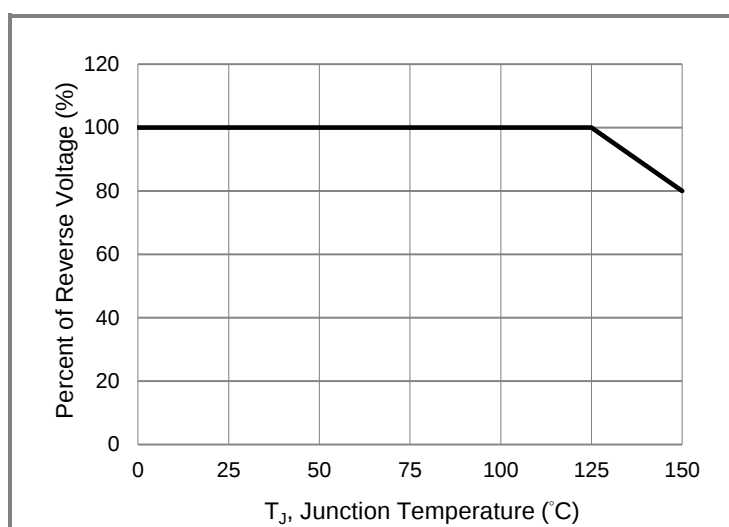


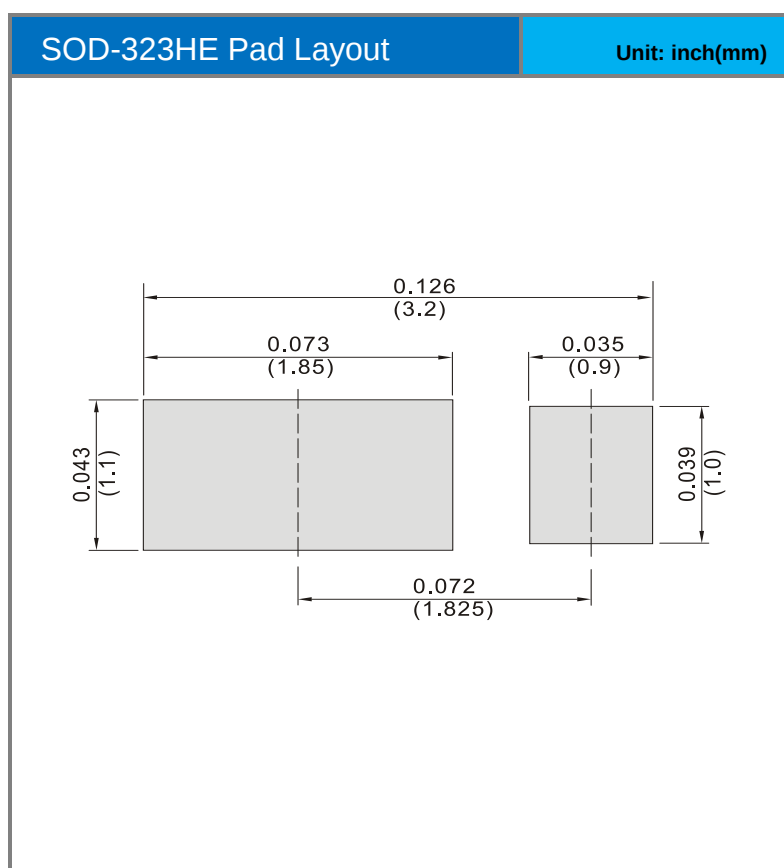
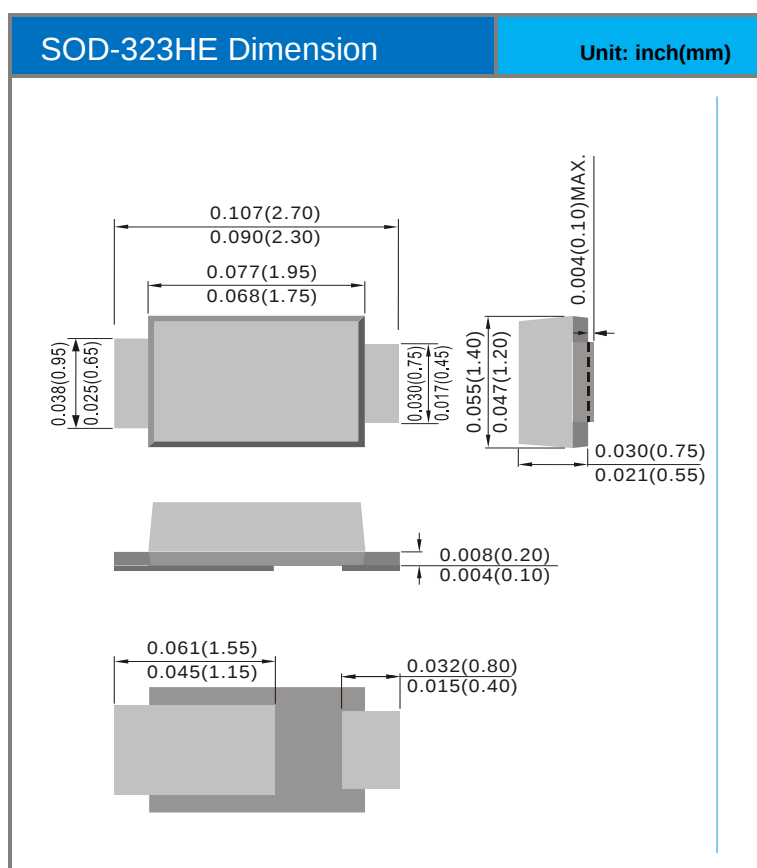
Fig.9 Operating Temperature Derating Curve

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Product and Packing Information

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

Packaging Information & Mounting Pad Layout



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