

# SBA0520SA-AU / SBA0530SA-AU / SBA0540SA-AU

## EXTREME LOW VF SCHOTTKY RECTIFIER

<b>Voltage</b>	<b>20-40 V</b>	<b>Current</b>	<b>0.5 A</b>
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### Features

- Ultra low forward voltage, low power loss
- Surface mount package
- Ultra thin profile package for space constrained utilization
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard
- AEC-Q101 qualified

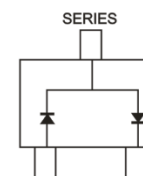
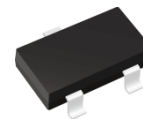
### Applications

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

### Mechanical Data

- Case: Molded plastic, SOT-23
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0003 ounces, 0.0084 grams

SOT-23



### Maximum Ratings (T<sub>A</sub> = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	SBA0520SA-AU	SBA0530SA-AU	SBA0540SA-AU	UNIT
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	20	30	40	V
Maximum rms voltage	V <sub>RMS</sub>	14	21	28	V
Maximum dc blocking voltage	V <sub>R</sub>	20	30	40	V
Maximum average forward rectified current	I <sub>F(AV)</sub>	0.5			A
Peak forward surge current: 8.3ms single half sine-wave Superimposed on rated load	I <sub>FSM</sub>	2			A
Typical thermal resistance	R <sub>θJA</sub> <sup>(1)</sup>	350			°C/W
	R <sub>θJC</sub> <sup>(2)</sup>	180			
Operating junction temperature range	T <sub>J</sub>	-55 to +150			°C
Storage temperature range	T <sub>STG</sub>	-55 to +150			°C

### Electrical Characteristics

PARAMETER	SYMBOL	TEST CONDITION	SBA0520SA-AU		SBA0530SA-AU		SBA0540SA-AU		UNIT
			TYP.	MAX.	TYP.	MAX.	TYP.	MAX.	
Forward voltage	V <sub>F</sub>	I <sub>F</sub> = 10mA	0.24	-	0.25	-	0.23	-	V
		I <sub>F</sub> = 100mA	0.32	-	0.33	-	0.35	-	
		I <sub>F</sub> = 500mA	-	0.48	-	0.52	-	0.6	
		T <sub>J</sub> = 25 °C							
Reverse current	I <sub>R</sub> <sup>(3)</sup>	I <sub>F</sub> = 10mA	0.13	-	0.13	-	0.15	-	V
		I <sub>F</sub> = 100mA	0.23	-	0.24	-	0.29	-	
		T <sub>J</sub> = 125 °C							
		V <sub>R</sub> = 10V	4.6	-	4	-	1.3	-	μA
V <sub>R</sub> = 20V	-	100	9	-	1.9	-			
V <sub>R</sub> = 30V	-	-	-	100	3.1	-			
V <sub>R</sub> = 40V	-	-	-	-	-	50			
Reverse current	I <sub>R</sub> <sup>(3)</sup>	V <sub>R</sub> = 20V	1.7	-	1.4	-	0.5	-	mA
		V <sub>R</sub> = 30V	-	-	3.5	-	0.8	-	
		V <sub>R</sub> = 40V	-	-	-	-	1.3	-	
		T <sub>J</sub> = 125 °C							

- Note : 1. Mounted on a FR4 PCB, single-sided copper, mini pad.  
 2. Mounted on a FR4 PCB, single-sided copper, with 100cm<sup>2</sup> copper pad area.  
 3. Short duration pulse test used to minimize self-heating effect.



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**TYPICAL CHARACTERISTIC CURVES**

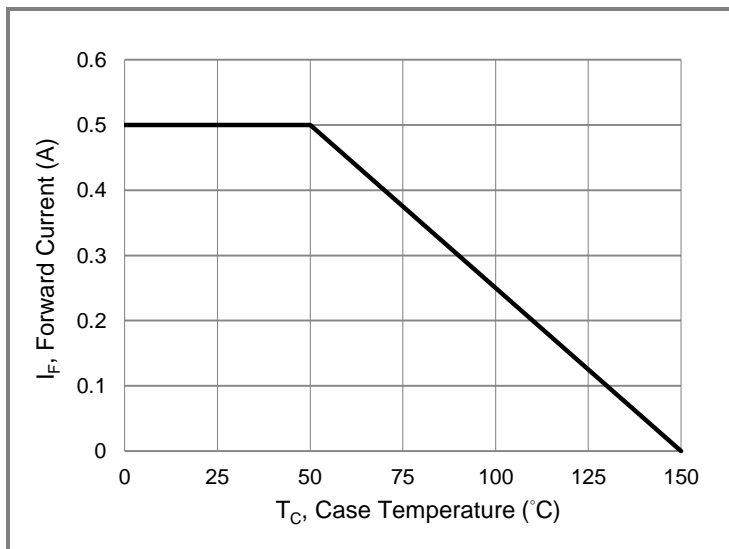


Fig.1 Forward Current Derating Curve

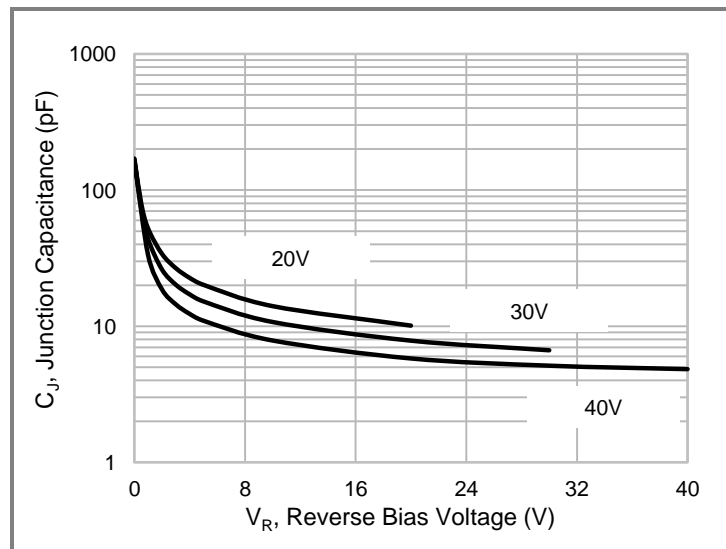


Fig. 2 Typical Junction Capacitance

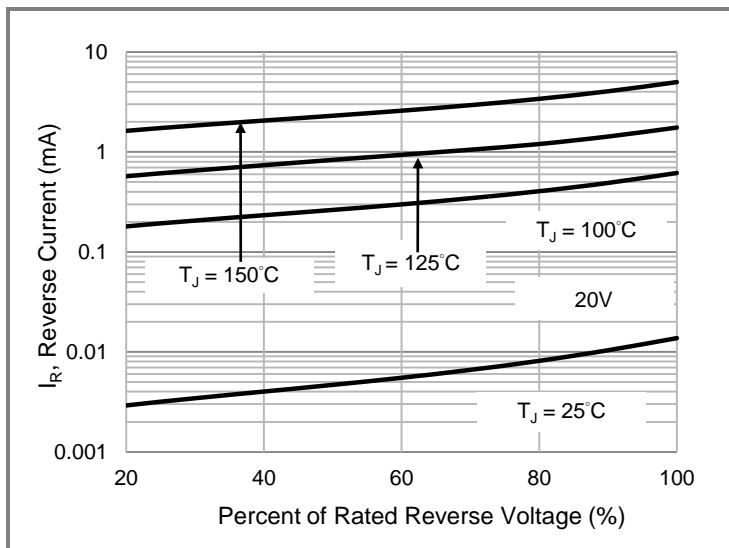


Fig.3 Typical Reverse Characteristics

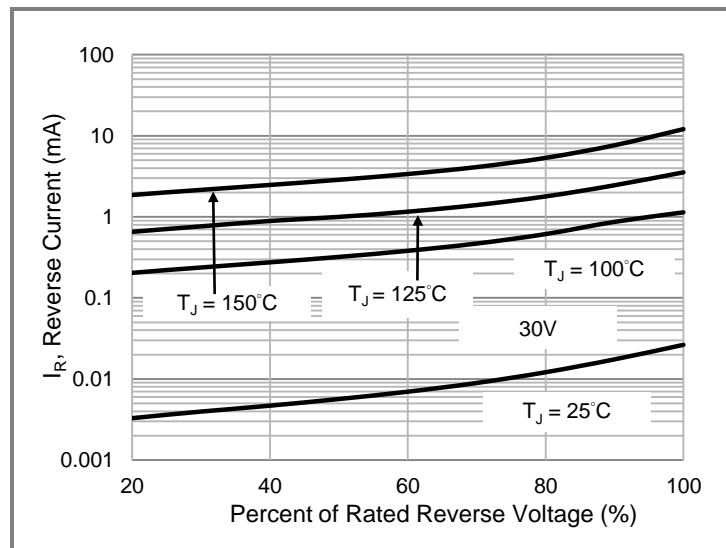


Fig.4 Typical Reverse Characteristics

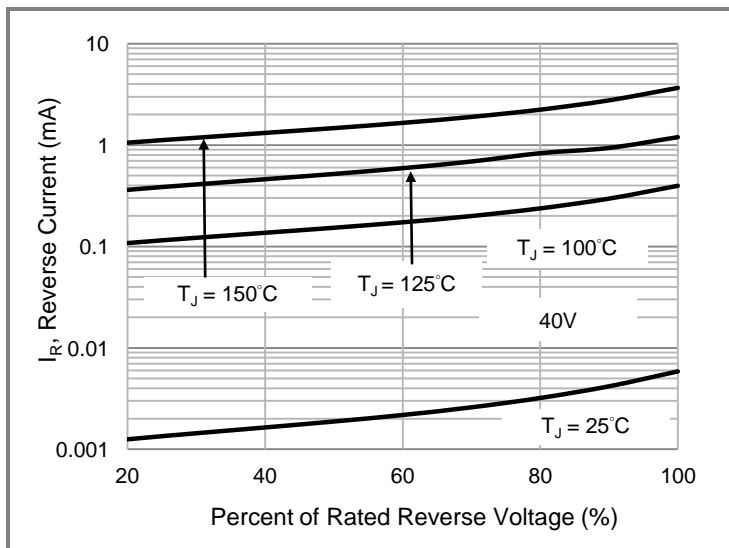


Fig.5 Typical Reverse Characteristics

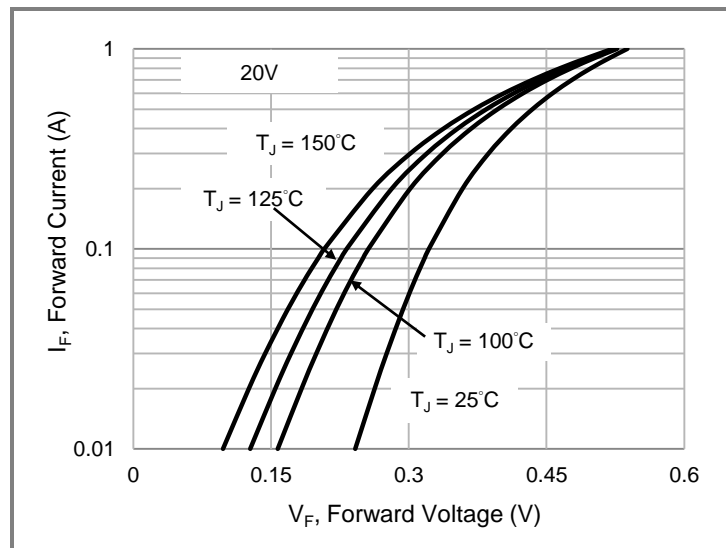
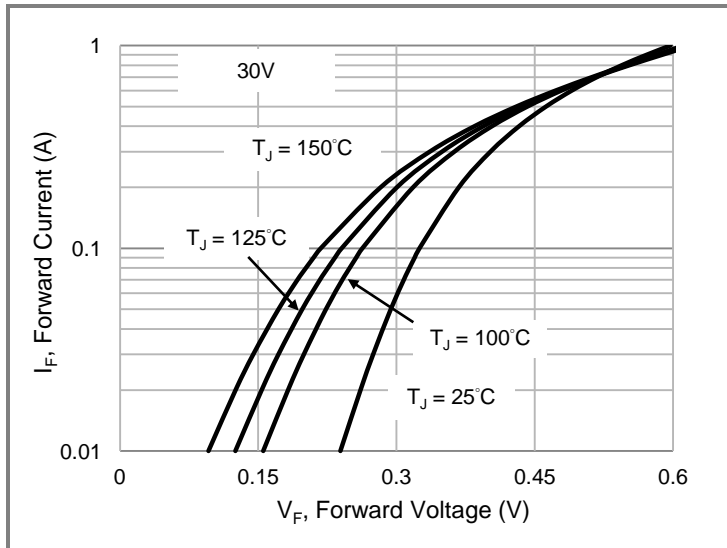


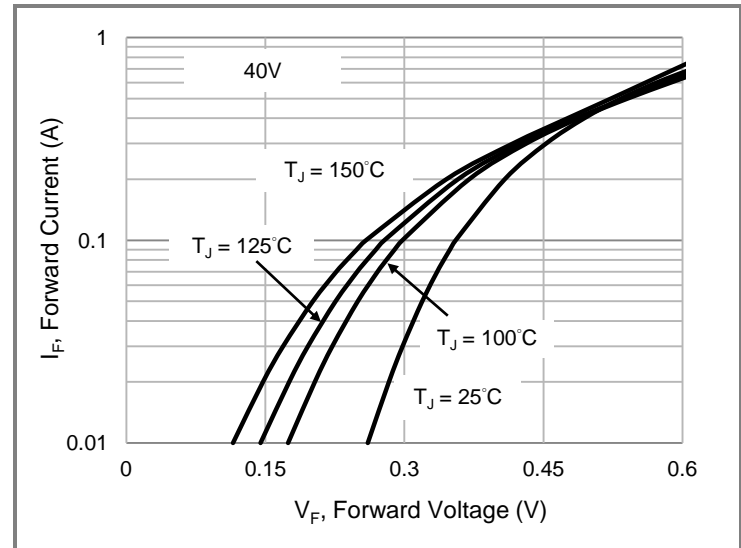
Fig.6 Typical Forward Characteristics



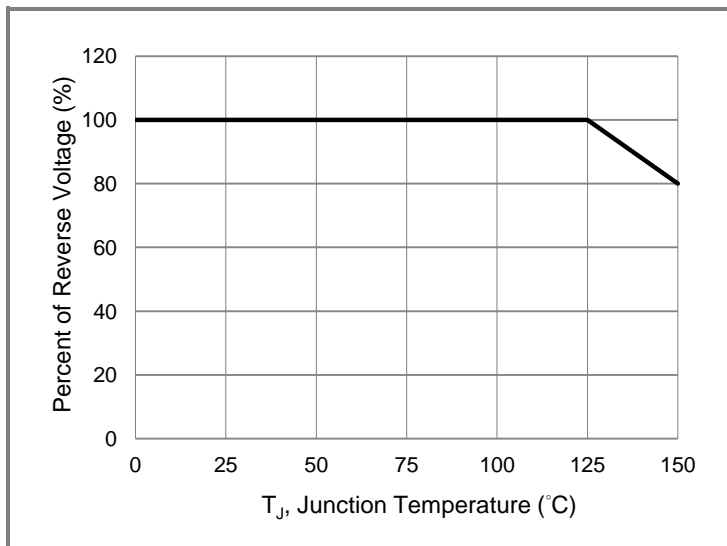
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**Fig.7 Typical Forward Characteristics**



**Fig.8 Typical Forward Characteristics**



**Fig.9 Operating Temperature Derating Curve**

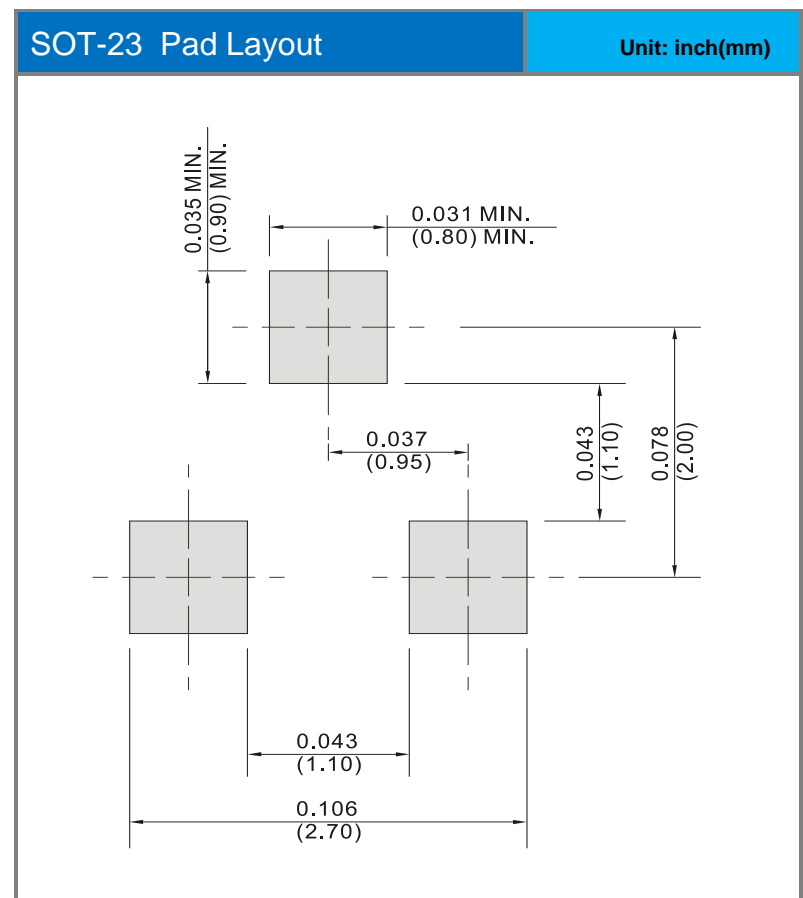
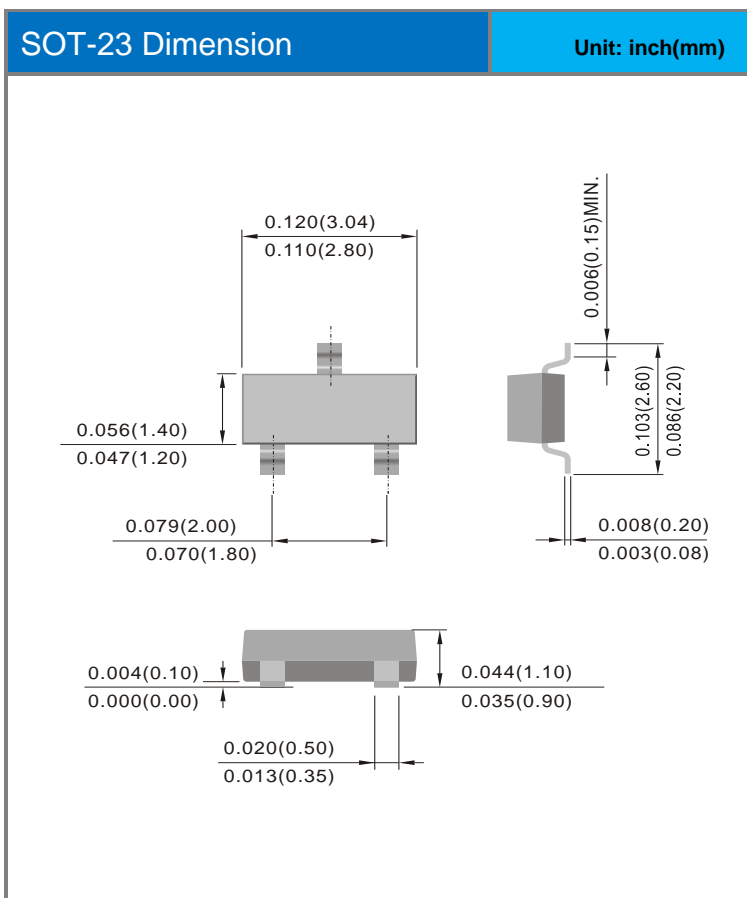


# SBA0520SA-AU / SBA0530SA-AU / SBA0540SA-AU

## Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
SBA0520SA-AU_R1_000A1	SOT-23	3K pcs / 7" reel	2SA	Halogen free
SBA0530SA-AU_R1_000A1	SOT-23	3K pcs / 7" reel	3SA	Halogen free
SBA0540SA-AU_R1_000A1	SOT-23	3K pcs / 7" reel	4SA	Halogen free

## Packaging Information & Mounting Pad Layout





## SBA0520SA-AU / SBA0530SA-AU / SBA0540SA-AU

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