

# 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>
----------------	----------------	----------------	--------------

### Features

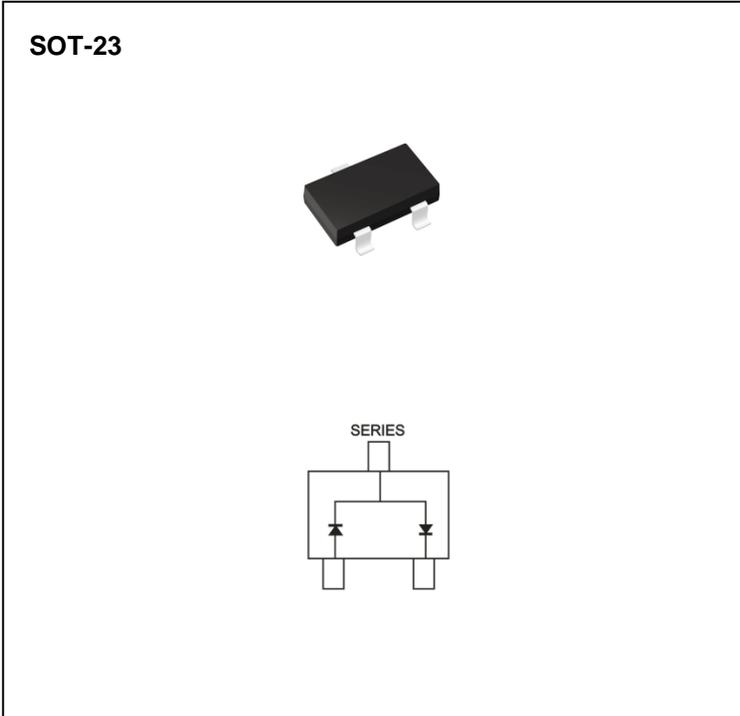
- Ultra low forward voltage, low power loss
- Surface mount package
- Ultra thin profile package for space constrained utilization
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard
- AEC-Q101 qualified

### 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



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

PARAMETER	SYMBOL	SBA0520SA-AU	SBA0530SA-AU	SBA0540SA-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	$I_{F(AV)}$	0.5			A
Peak forward surge current: 8.3ms single half sine-wave Superimposed on rated load	$I_{FSM}$	2			A
Typical thermal resistance	$R_{\theta JA}^{(1)}$	350			$^\circ\text{C/W}$
	$R_{\theta JC}^{(2)}$	180			
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

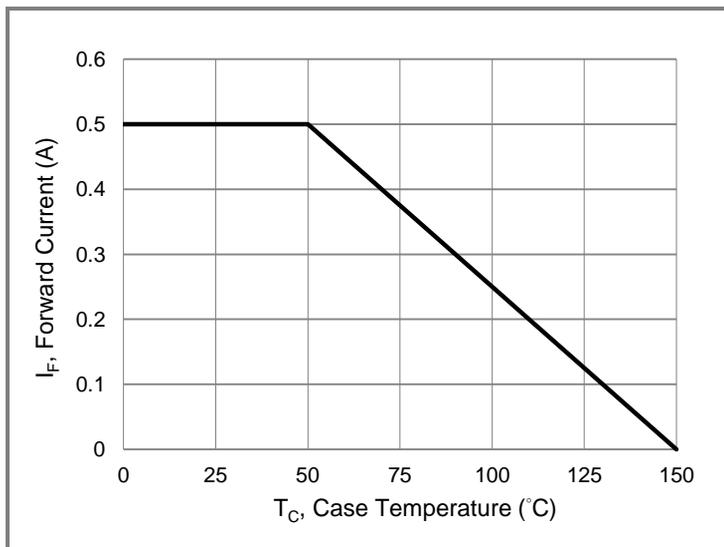
PARAMETER	SYMBOL	TEST CONDITION	SBA0520SA-AU		SBA0530SA-AU		SBA0540SA-AU		UNIT
			TYP.	MAX.	TYP.	MAX.	TYP.	MAX.	
Forward voltage	$V_F$	$I_F = 10\text{mA}$	0.24	-	0.25	-	0.23	-	V
		$I_F = 100\text{mA}$	0.32	-	0.33	-	0.35	-	
		$I_F = 500\text{mA}$	-	0.48	-	0.52	-	0.6	
		$I_F = 10\text{mA}$	0.13	-	0.13	-	0.15	-	V
$I_F = 100\text{mA}$	0.23	-	0.24	-	0.29	-			
Reverse current	$I_R^{(3)}$	$V_R = 10\text{V}$	4.6	-	4	-	1.3	-	$\mu\text{A}$
		$V_R = 20\text{V}$	-	100	9	-	1.9	-	
		$V_R = 30\text{V}$	-	-	-	100	3.1	-	
		$V_R = 40\text{V}$	-	-	-	-	-	50	
		$V_R = 20\text{V}$	1.7	-	1.4	-	0.5	-	mA
		$V_R = 30\text{V}$	-	-	3.5	-	0.8	-	
$V_R = 40\text{V}$	-	-	-	-	1.3	-			

- 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.

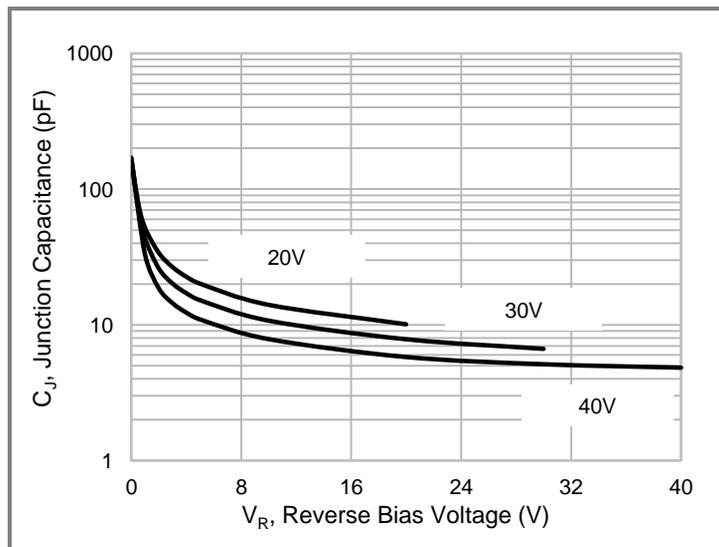


**SBA0520SA-AU / SBA0530SA-AU / SBA0540SA-AU**

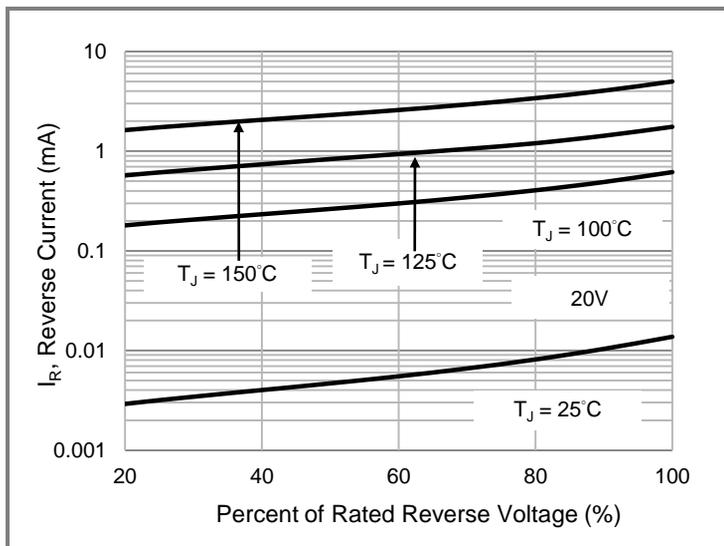
**TYPICAL CHARACTERISTIC CURVES**



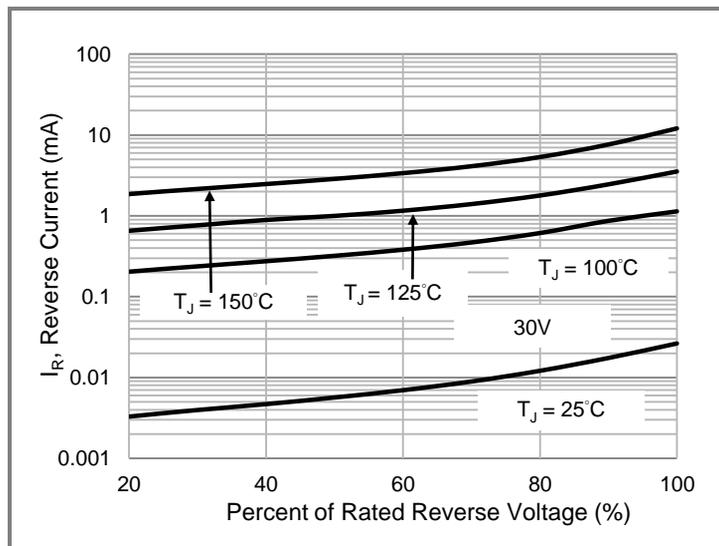
**Fig.1 Forward Current Derating Curve**



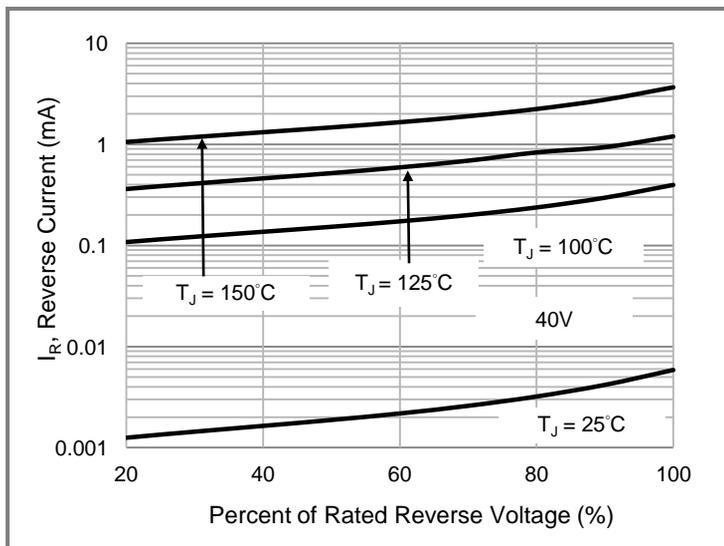
**Fig. 2 Typical Junction Capacitance**



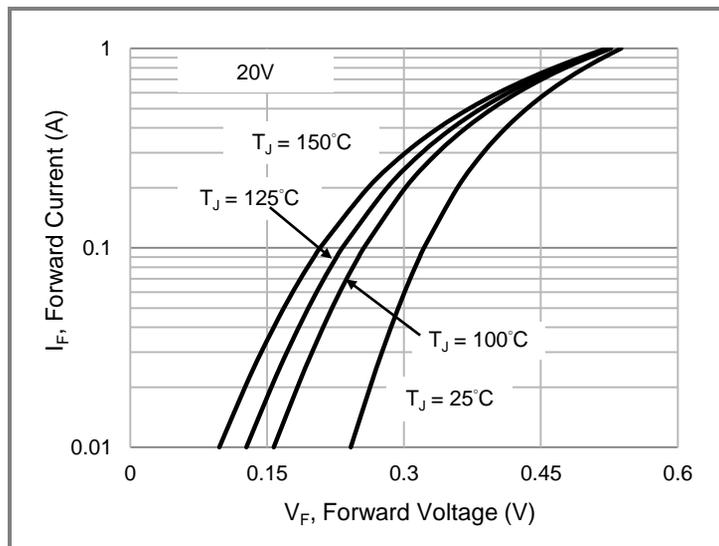
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Reverse Characteristics**



**Fig.5 Typical Reverse Characteristics**



**Fig.6 Typical Forward Characteristics**



**SBA0520SA-AU / SBA0530SA-AU / SBA0540SA-AU**

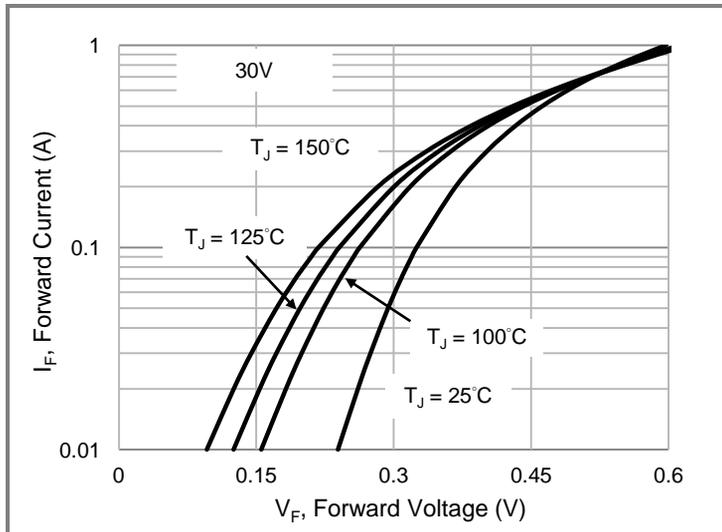


Fig.7 Typical Forward Characteristics

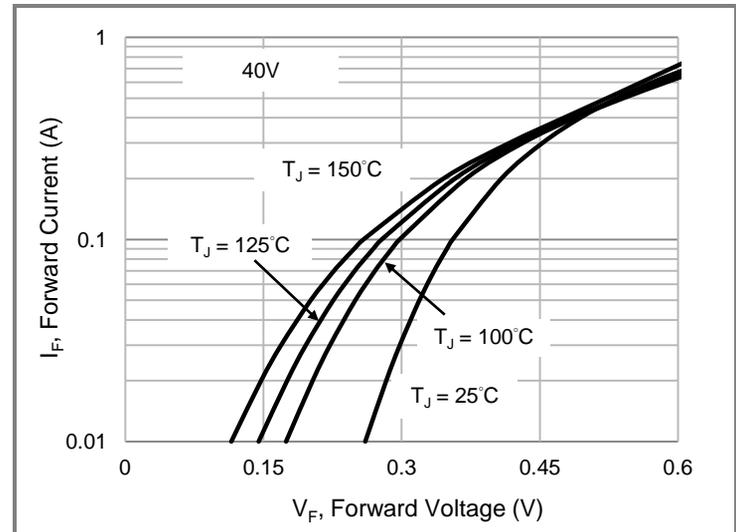


Fig.8 Typical Forward Characteristics

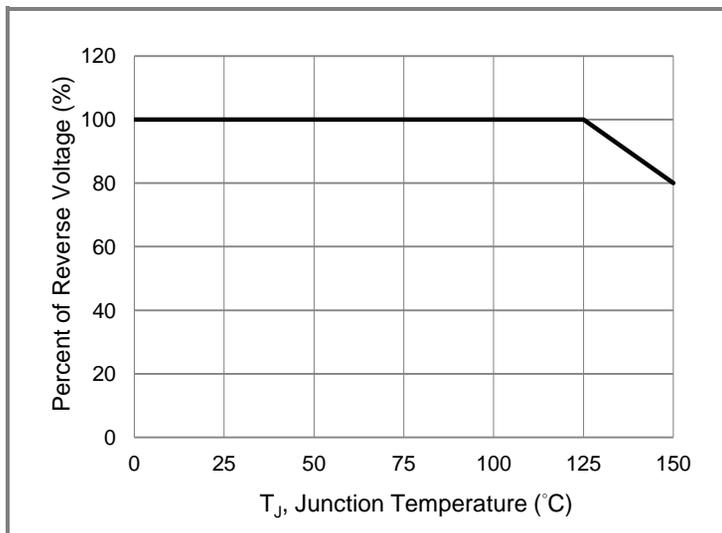


Fig.9 Operating Temperature Derating Curve

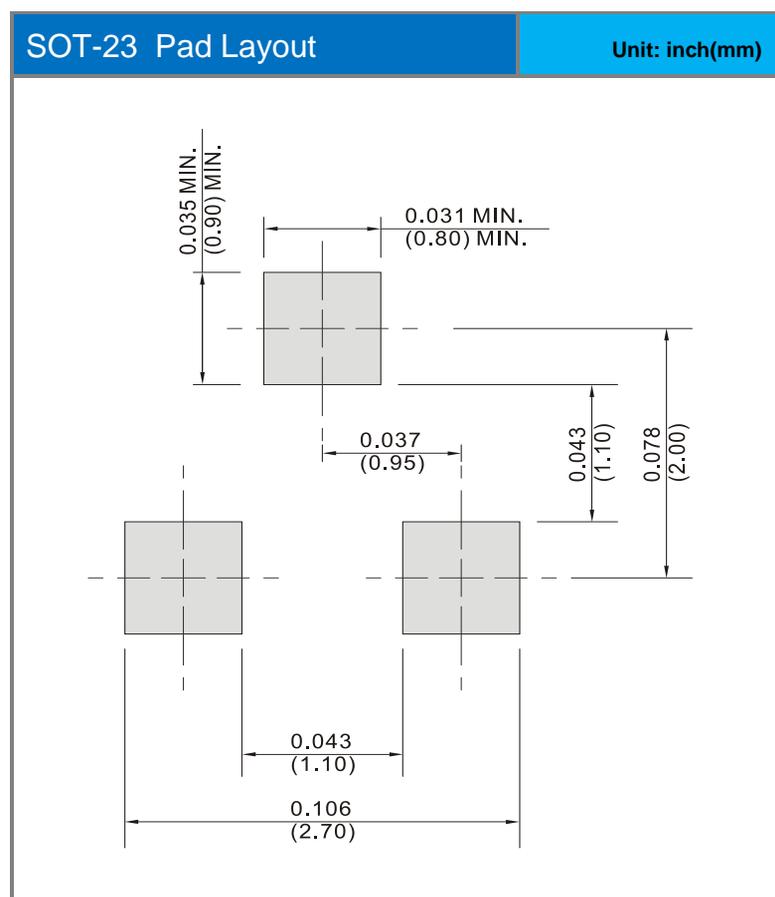
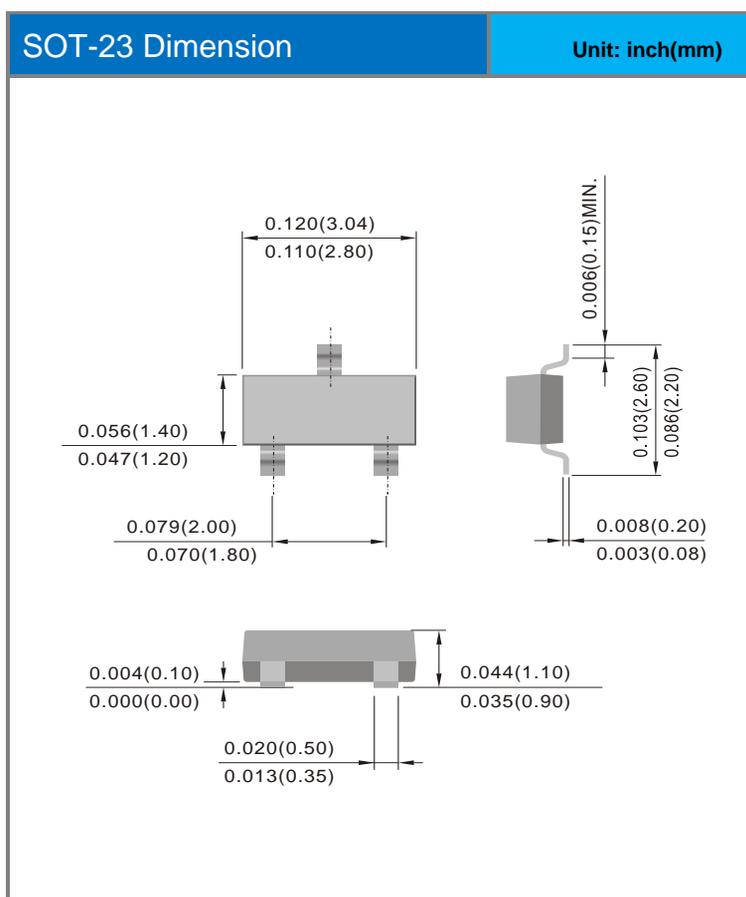


## SBA0520SA-AU / SBA0530SA-AU / SBA0540SA-AU

### 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

### Disclaimer

- Reproducing and modifying information of the document is prohibited without permission from Panjit International Inc..
- Panjit International Inc. reserves the rights to make changes of the content herein the document anytime without notification. Please refer to our website for the latest document.
- Panjit International Inc. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Panjit International Inc. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Panjit International Inc. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Panjit International Inc. for any damages resulting from such improper use or sale.
- Since Panjit uses lot number as the tracking base, please provide the lot number for tracking when complaining.