

# SBA0520CA / SBA0530CA / SBA0540CA

## EXTREME LOW VF SCHOTTKY RECTIFIER

**Voltage** **20-40 V** **Current** **0.5 A**

### 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

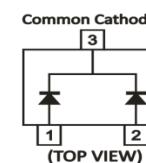
### Applications

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

PARAMETER	SYMBOL	SBA0520CA	SBA0530CA	SBA0540CA	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	$R_{\theta JA}^{(1)}$ $R_{\theta JC}^{(2)}$	350 180			$^\circ\text{C}/\text{W}$
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		SBA0520CA		SBA0530CA		SBA0540CA		UNIT
				TYP.	MAX.	TYP.	MAX.	TYP.	MAX.	
Forward voltage	$V_F$	$I_F = 10\text{mA}$	$T_J = 25^\circ\text{C}$	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	
		$I_F = 10\text{mA}$	$T_J = 125^\circ\text{C}$	0.13	-	0.13	-	0.15	-	V
		$I_F = 100\text{mA}$		0.23	-	0.24	-	0.29	-	
Reverse current	$I_R^{(3)}$	$V_R = 10\text{V}$	$T_J = 25^\circ\text{C}$	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	
		$V_R = 20\text{V}$	$T_J = 125^\circ\text{C}$	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  $100\text{cm}^2$  copper pad area.

3. Short duration pulse test used to minimize self-heating effect.

## SBA0520CA / SBA0530CA / SBA0540CA

### TYPICAL CHARACTERISTIC CURVES

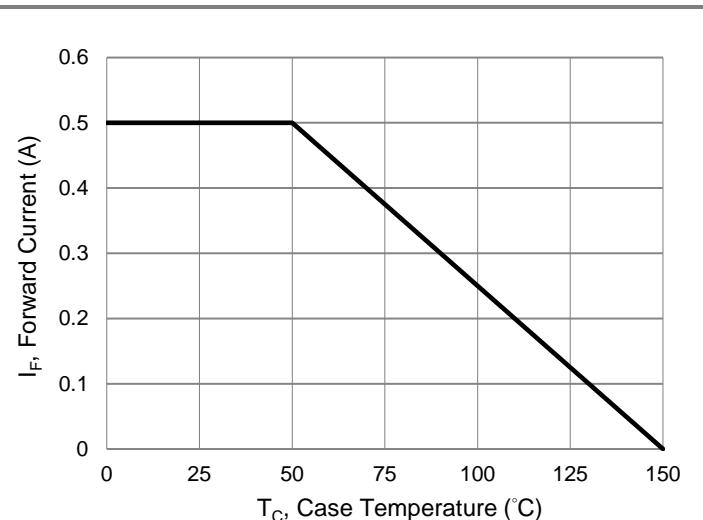


Fig.1 Forward Current Derating Curve

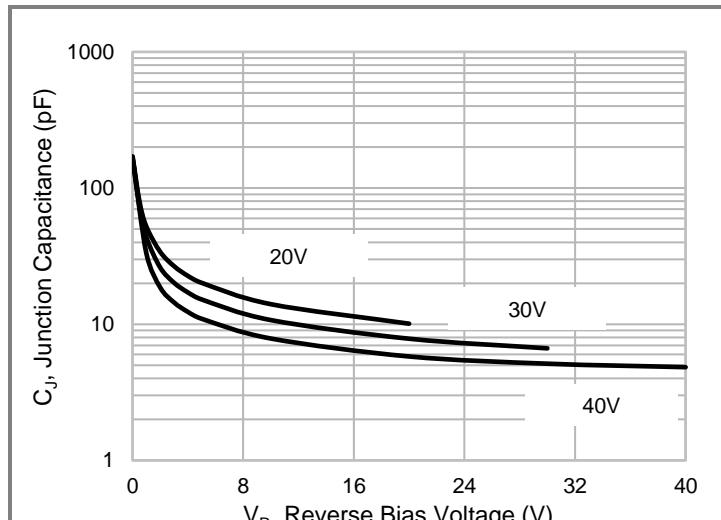


Fig. 2 Typical Junction Capacitance

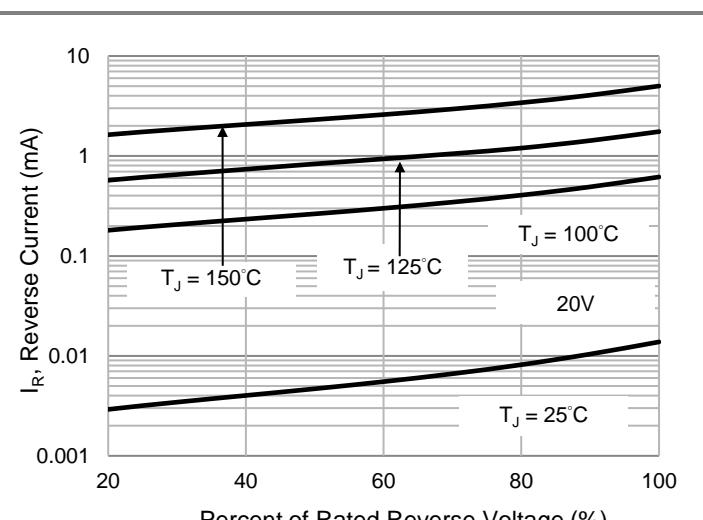


Fig.3 Typical Reverse Characteristics

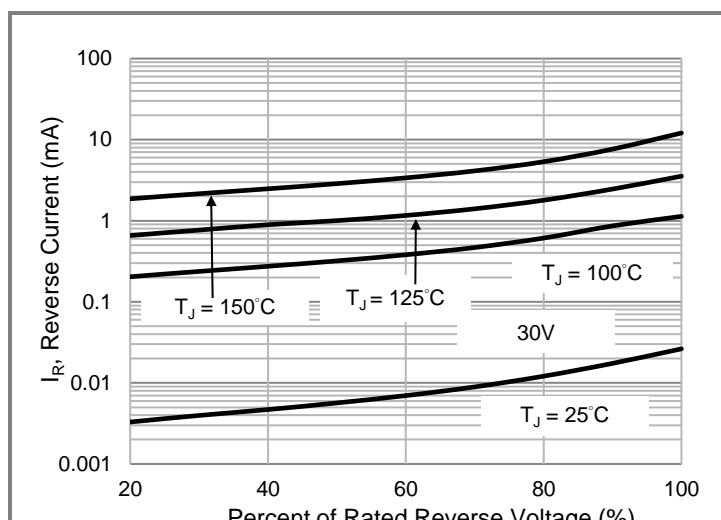


Fig.4 Typical Reverse Characteristics

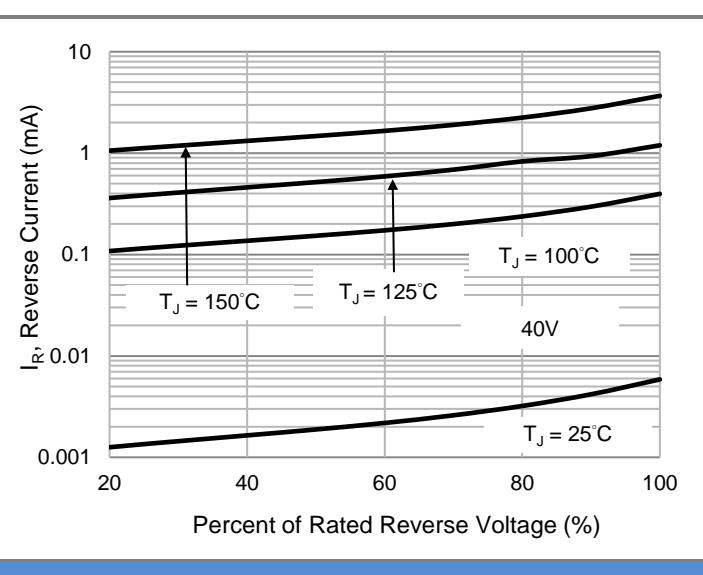


Fig.5 Typical Reverse Characteristics

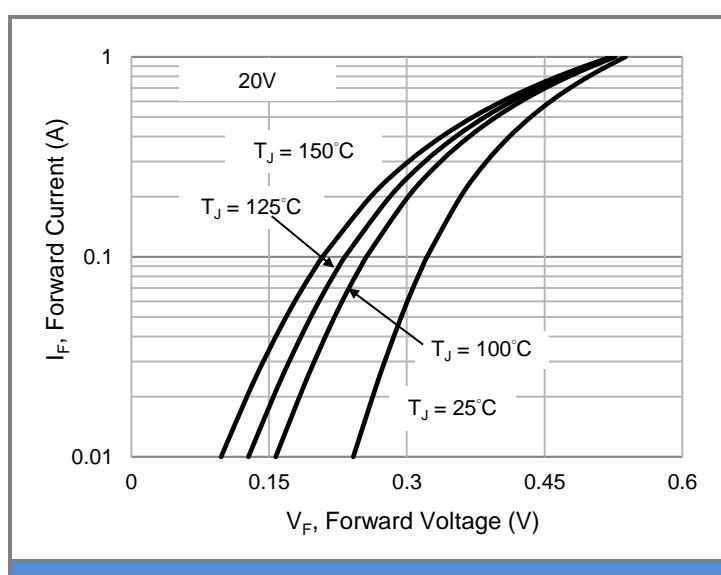


Fig.6 Typical Forward Characteristics

## SBA0520CA / SBA0530CA / SBA0540CA

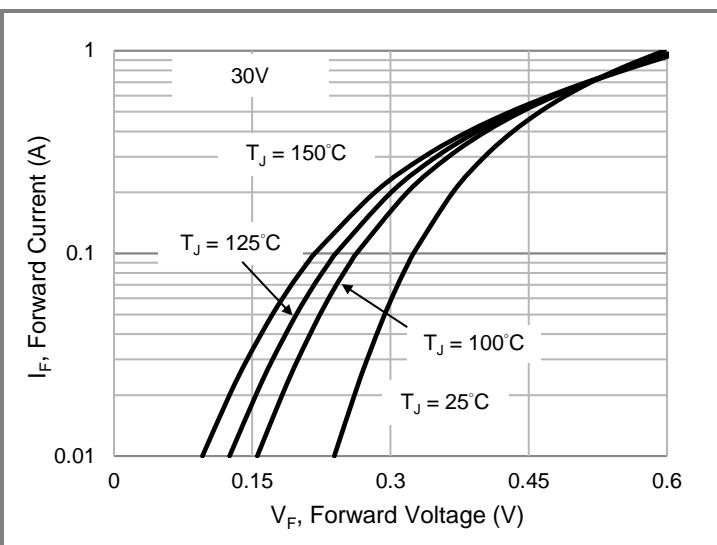


Fig.7 Typical Forward Characteristics

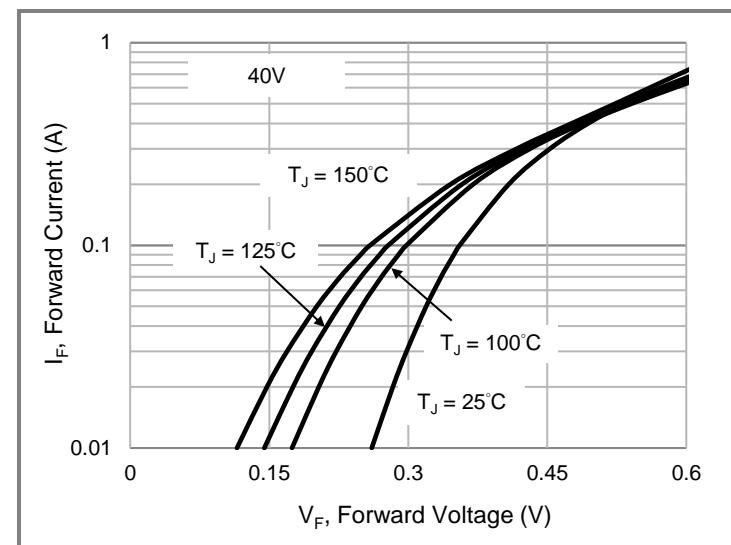


Fig.8 Typical Forward Characteristics

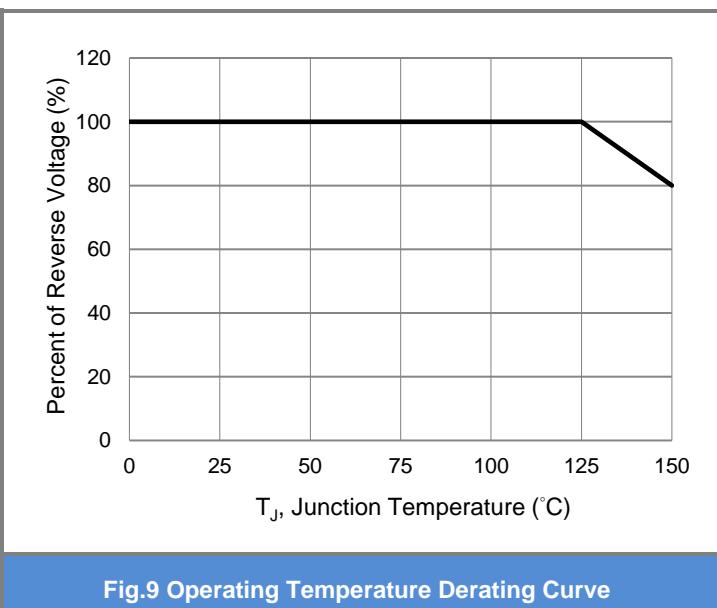


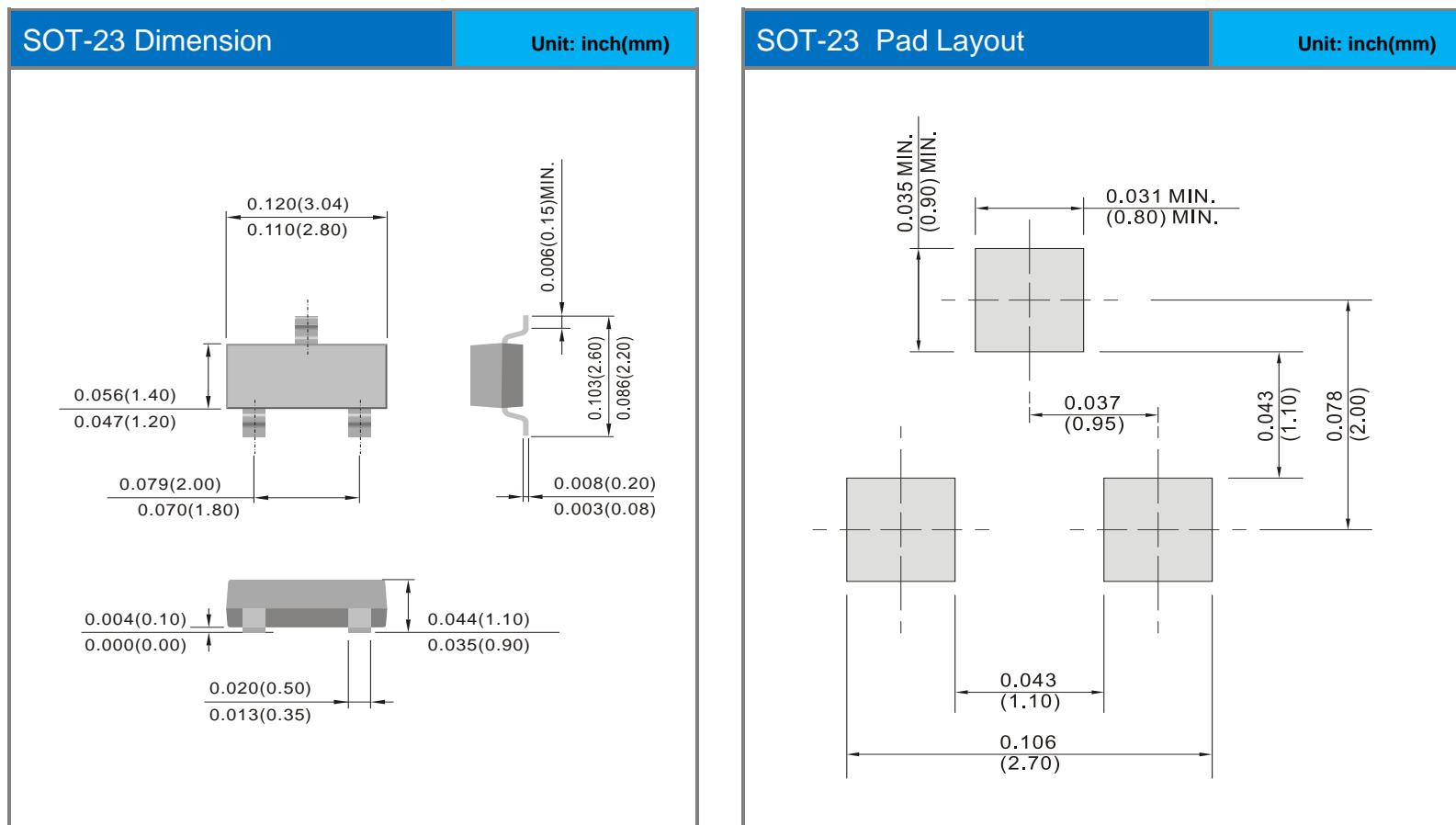
Fig.9 Operating Temperature Derating Curve

## **SBA0520CA / SBA0530CA / SBA0540CA**

## Product and Packing Information

Part No.	Package Type	Packing Type	Marking
SBA0520CA	SOT-23	3K pcs / 7" reel	2AS
SBA0530CA	SOT-23	3K pcs / 7" reel	3AS
SBA0540CA	SOT-23	3K pcs / 7" reel	4AS

## Packaging Information & Mounting Pad Layout



## **SBA0520CA / SBA0530CA / SBA0540CA**

### **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 requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, 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.

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Panjit](#):

[SBA0540CA\\_R1\\_00001](#)