



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

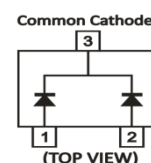
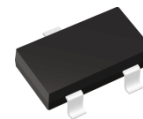
Applications

- 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	$R_{\theta JA}^{(1)}$	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	SBA0520CA		SBA0530CA		SBA0540CA		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	-	μA
		$V_R = 20\text{V}$	-	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 100cm² copper pad area.

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



SBA0520CA / SBA0530CA / SBA0540CA

TYPICAL CHARACTERISTIC CURVES

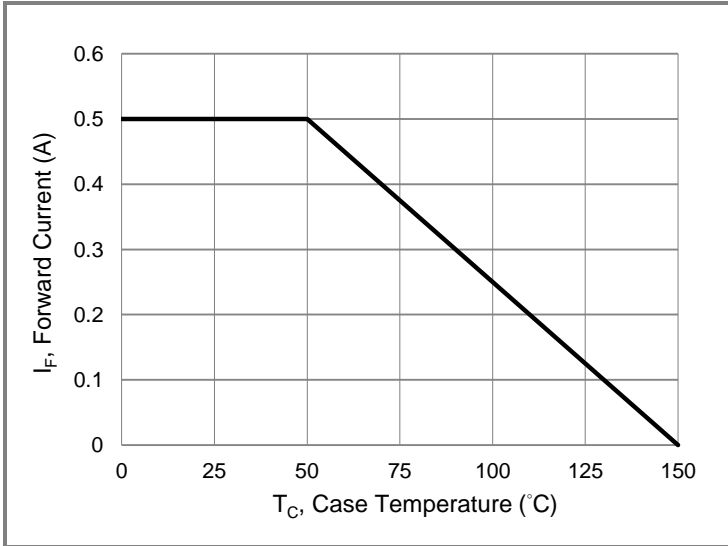


Fig.1 Forward Current Derating Curve

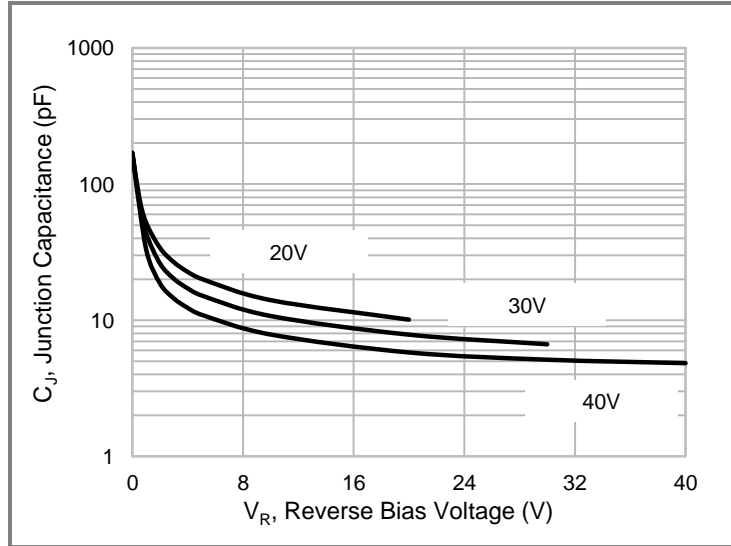


Fig. 2 Typical Junction Capacitance

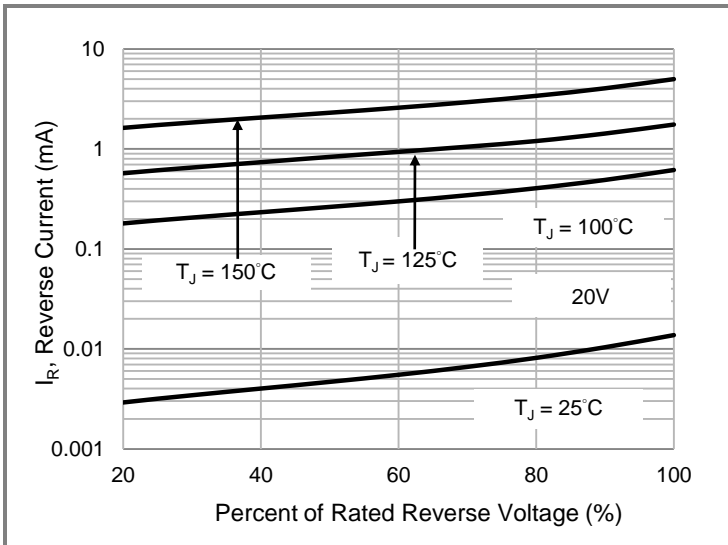


Fig.3 Typical Reverse Characteristics

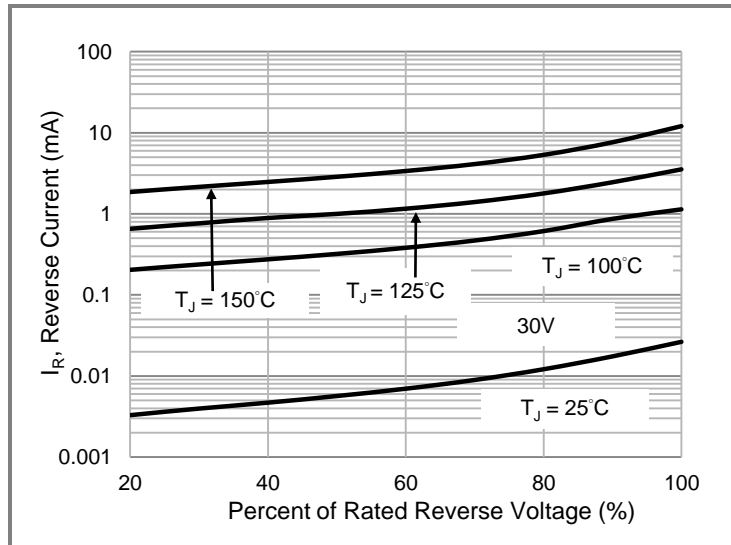


Fig.4 Typical Reverse Characteristics

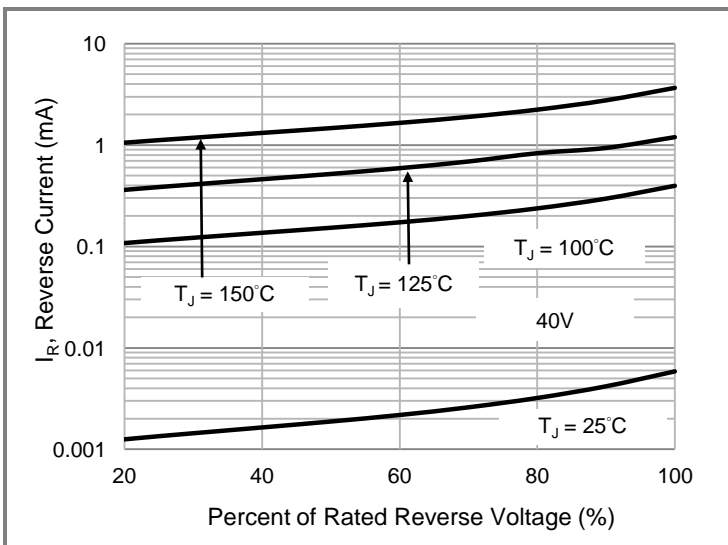


Fig.5 Typical Reverse Characteristics

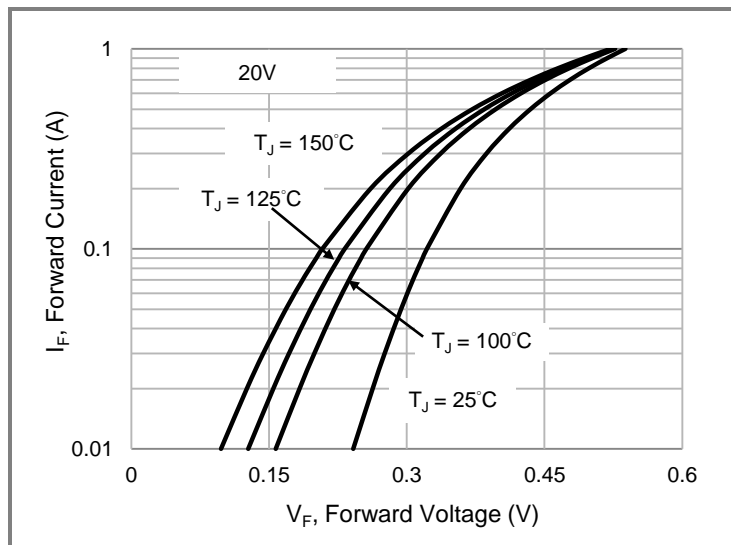


Fig.6 Typical Forward Characteristics



SBA0520CA / SBA0530CA / SBA0540CA

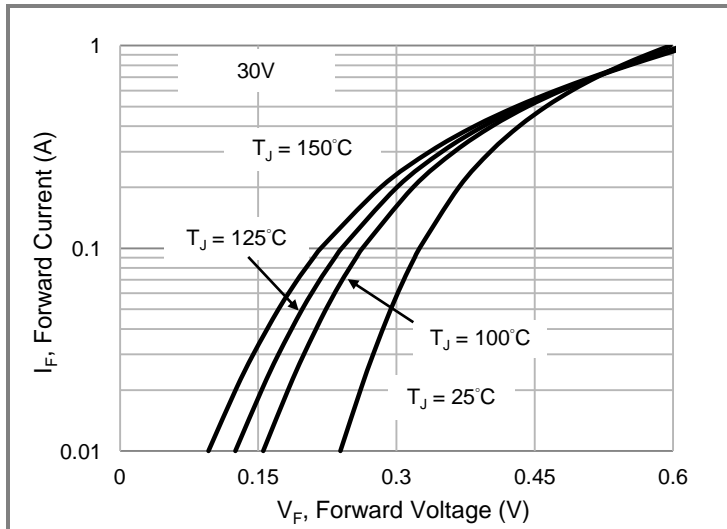


Fig.7 Typical Forward Characteristics

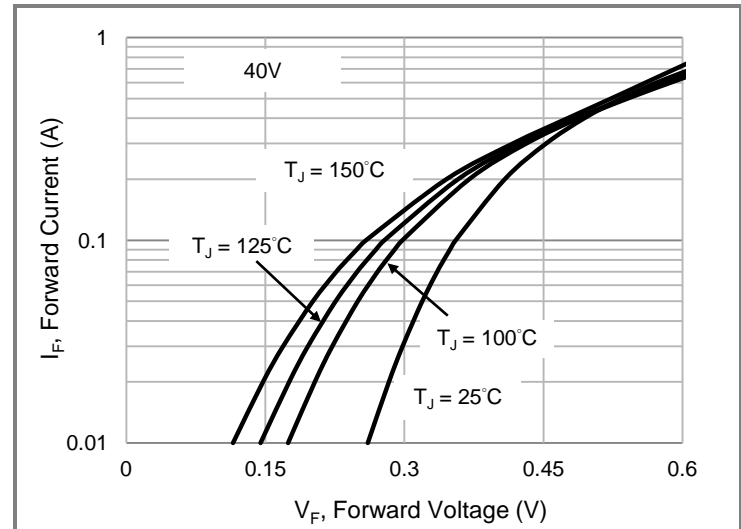


Fig.8 Typical Forward Characteristics

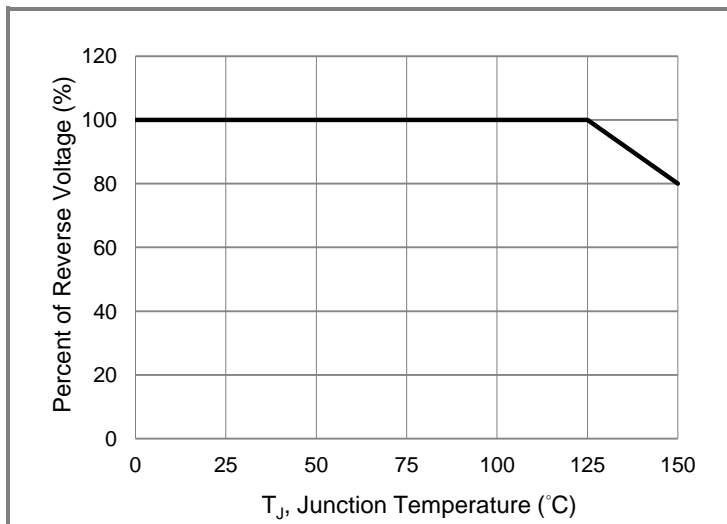


Fig.9 Operating Temperature Derating Curve

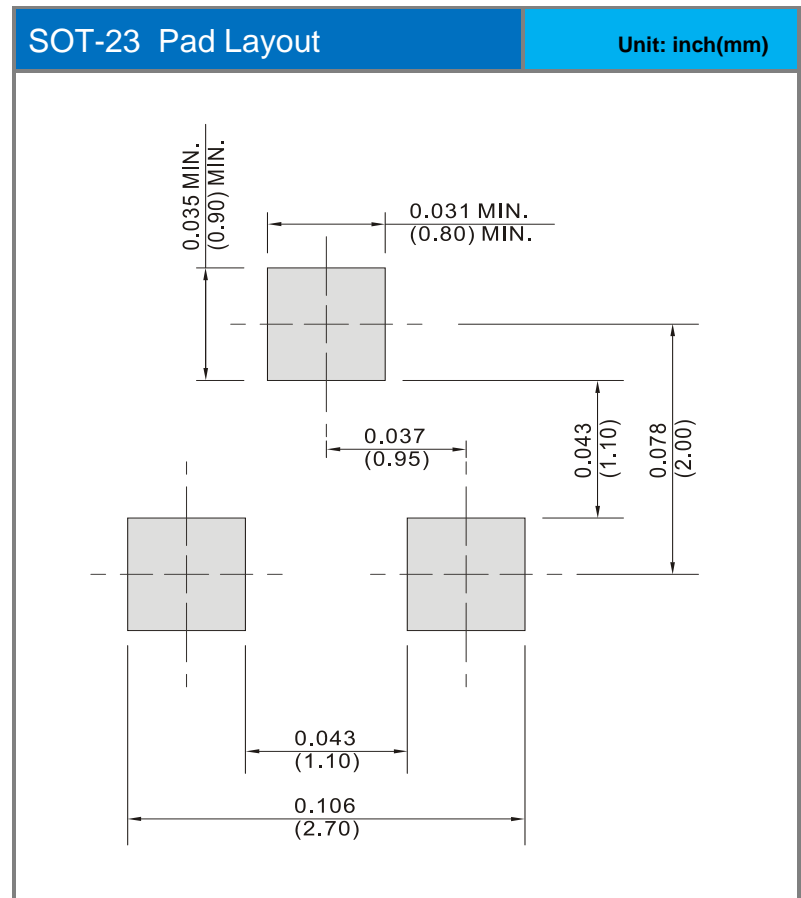
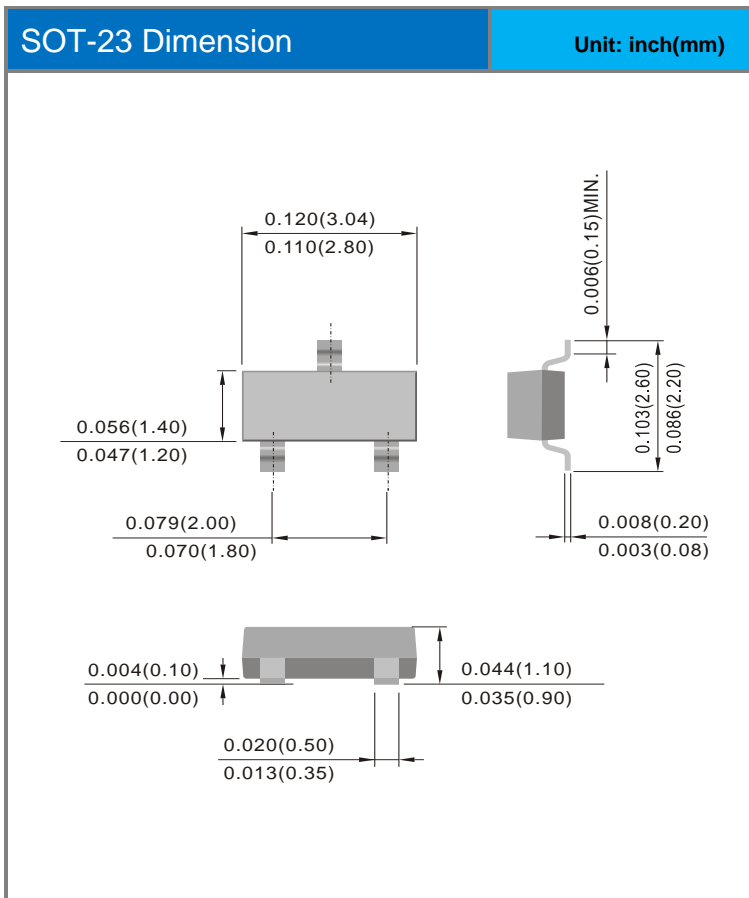


SBA0520CA / SBA0530CA / SBA0540CA

Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
SBA0520CA_R1_00001	SOT-23	3K pcs / 7" reel	2AS	Halogen free
SBA0530CA_R1_00001	SOT-23	3K pcs / 7" reel	3AS	Halogen free
SBA0540CA_R1_00001	SOT-23	3K pcs / 7" reel	4AS	Halogen free

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.