

SBA0520CA / SBA0530CA / SBA0540CA

EXTREME LOW VF SCHOTTKY RECTIFIER

Voltage	20-40 V	Current	0.5 A
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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

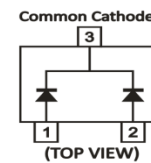
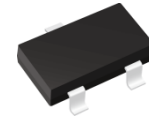
Applications

- 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 °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 _{θJA} ⁽¹⁾	350			°C/W
	R _{θJC} ⁽²⁾	180			
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	SBA0520CA		SBA0530CA		SBA0540CA		UNIT												
			TYP.	MAX.	TYP.	MAX.	TYP.	MAX.													
Forward voltage	V _F	I _F = 10mA	0.24	-	0.25	-	0.23	-	V												
		I _F = 100mA								T _J = 25 °C	0.32	-	0.33	-	0.35	-					
		I _F = 500mA															-	0.48	-	0.52	-
		I _F = 10mA	T _J = 125 °C	0.13	-	0.13	-	0.15		-											
I _F = 100mA	-	0.23							-		0.24	-	0.29	-							
Reverse current			I _R ⁽³⁾	V _R = 10V	4.6	-	4	-		1.3					-	μA					
	V _R = 20V	T _J = 25 °C		-					100		9	-	1.9	-							
	V _R = 30V																-	-	100	3.1	-
	V _R = 40V																				
	V _R = 20V	T _J = 125 °C		1.7	-	1.4	-	0.5	-												
	V _R = 30V									-	-	3.5	-	0.8	-						
V _R = 40V	-		-													-	-	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

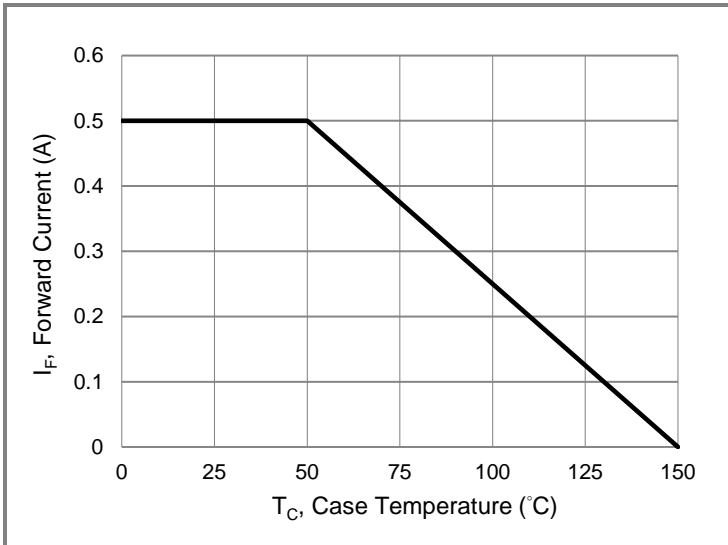


Fig.1 Forward Current Derating Curve

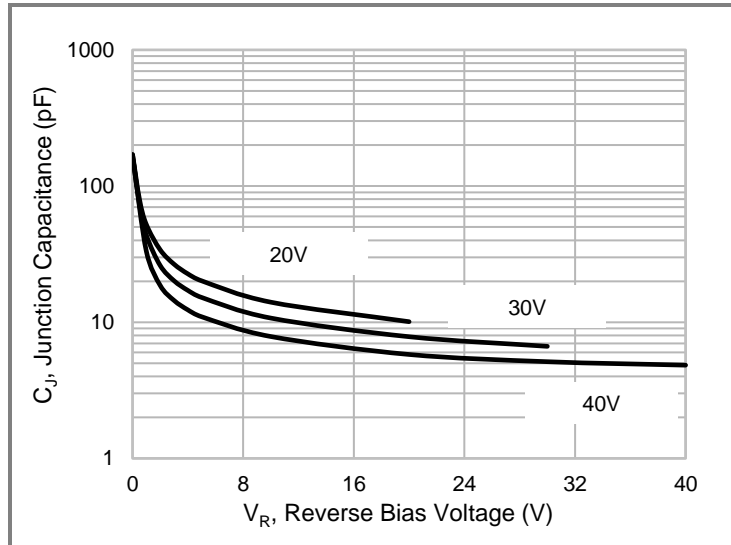


Fig. 2 Typical Junction Capacitance

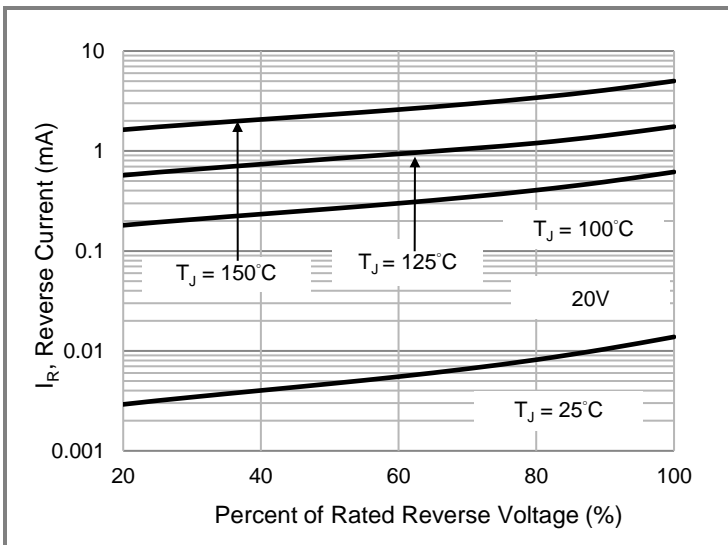


Fig.3 Typical Reverse Characteristics

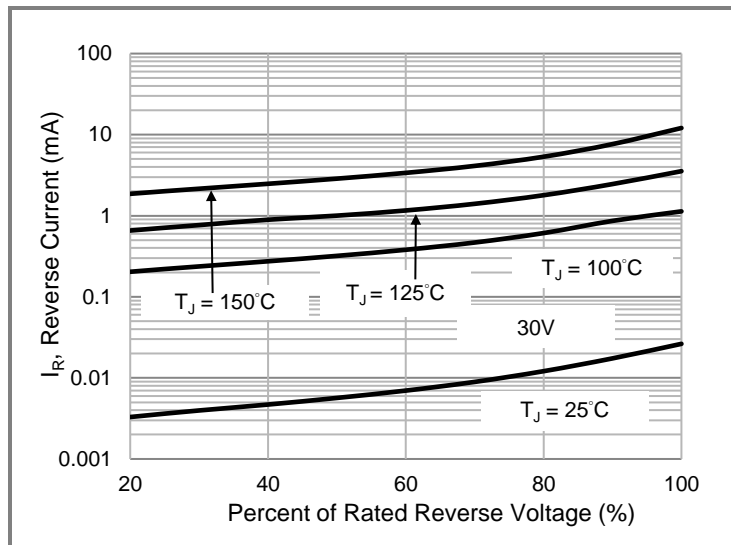


Fig.4 Typical Reverse Characteristics

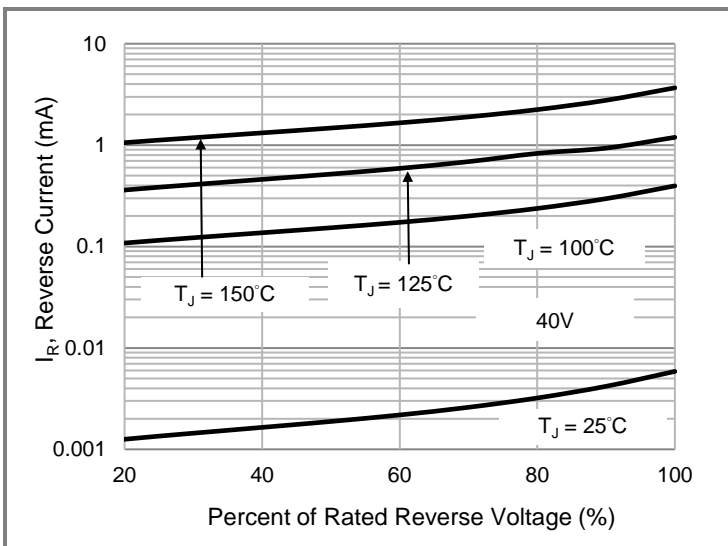


Fig.5 Typical Reverse Characteristics

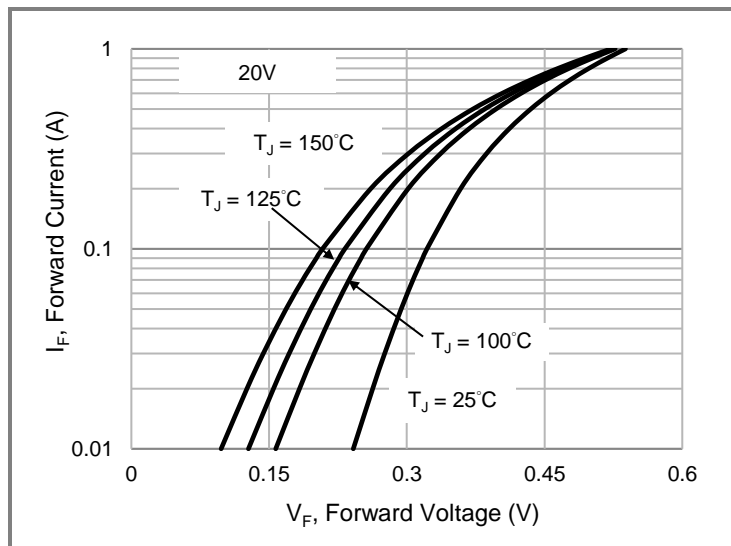


Fig.6 Typical Forward Characteristics

SBA0520CA / SBA0530CA / SBA0540CA

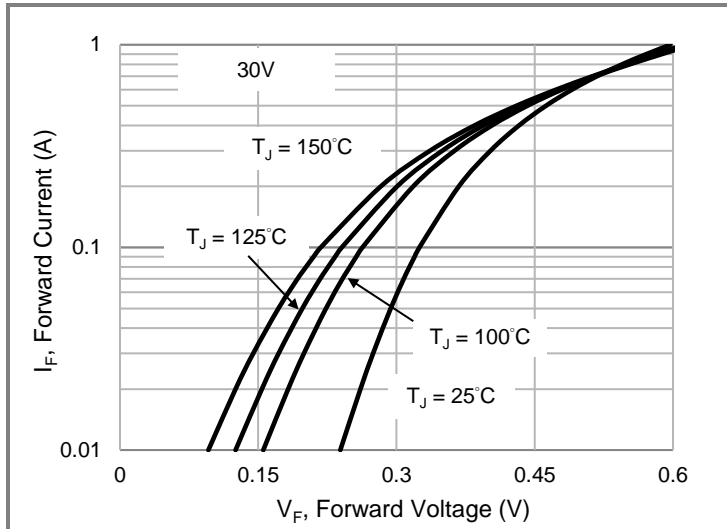


Fig.7 Typical Forward Characteristics

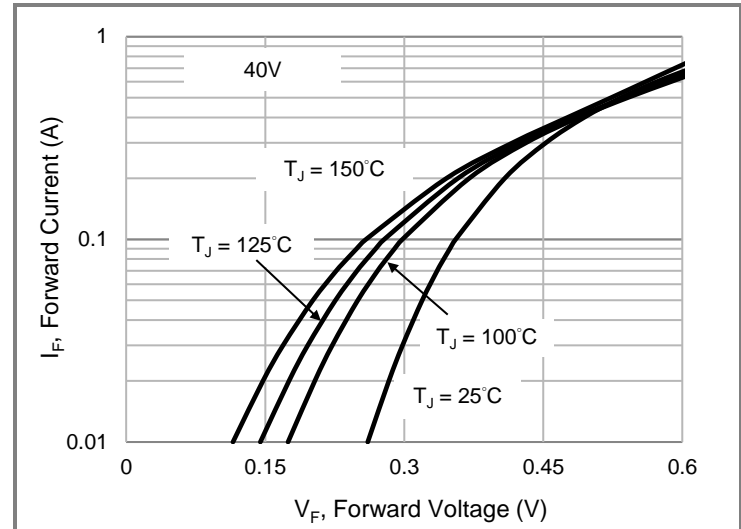


Fig.8 Typical Forward Characteristics

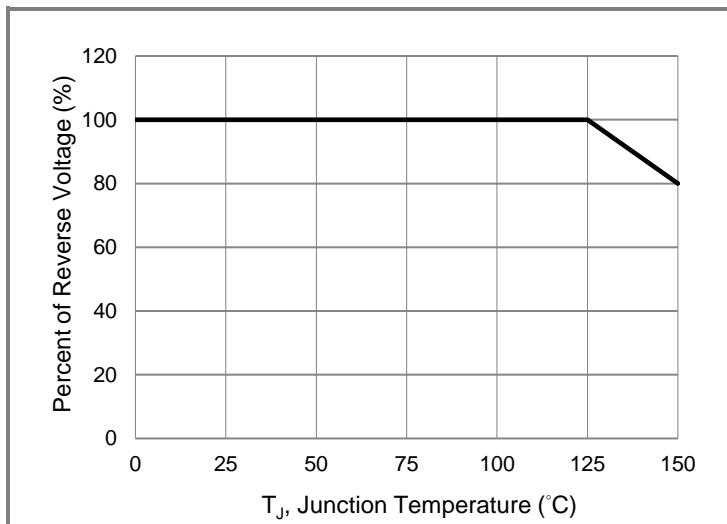


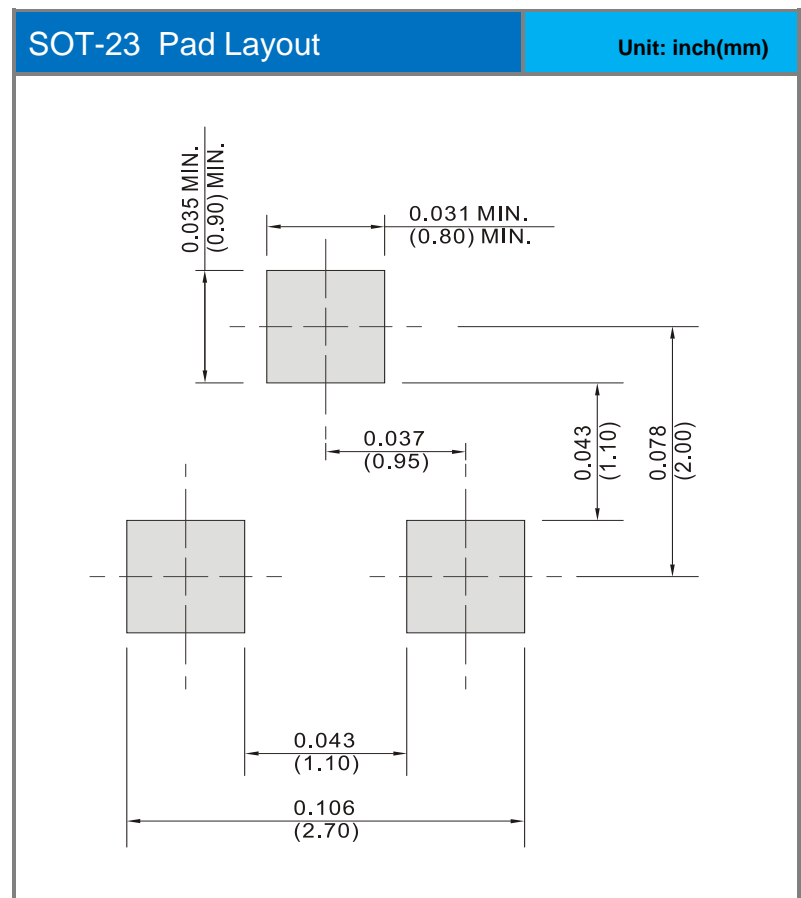
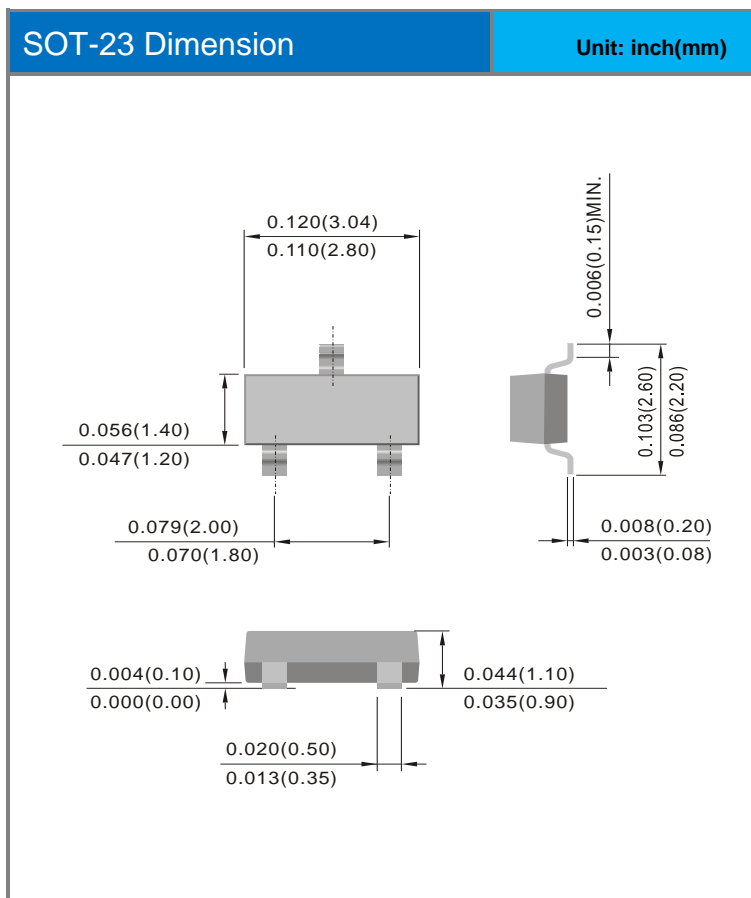
Fig.9 Operating Temperature Derating Curve

SBA0520CA / SBA0530CA / SBA0540CA

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

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