

SBA0520Q-AU / SBA0530Q-AU / SBA0540Q-AU

EXTREME LOW VF SCHOTTKY RECTIFIER

Voltage

20-40 V

Current

0.5 A

Features

- Ultra low forward voltage, Low Power loss
- Surface mount package
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard
- AEC-Q101 qualified

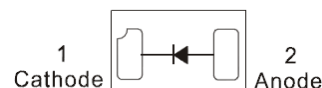
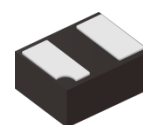
Applications

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

Mechanical Data

- Case: DFN 2L, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.00004 ounces, 0.0011 grams

DFN 2L



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

PARAMETER	SYMBOL	SBA0520Q-AU	SBA0530Q-AU	SBA0540Q-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	$R_{\theta JA}^{(1)}$	430			$^\circ\text{C/W}$
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	SBA0520Q-AU		SBA0530Q-AU		SBA0540Q-AU		UNIT
			TYP.	MAX.	TYP.	MAX.	TYP.	MAX.	
Forward voltage	V_F	$I_F = 10\text{mA}$	0.24	-	0.25	-	0.26	-	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
Reverse current	$I_R^{(2)}$	$I_F = 100\text{mA}$	0.23	-	0.24	-	0.29	-	μA
		$T_J = 25^\circ\text{C}$	4.6	-	4	-	1.3	-	
		$V_R = 10\text{V}$	-	100	9	-	1.9	-	
		$V_R = 20\text{V}$	-	-	-	100	3.1	-	
		$V_R = 30\text{V}$	-	-	-	-	-	50	mA
		$V_R = 40\text{V}$	-	-	-	-	-	-	
		$T_J = 125^\circ\text{C}$	1.7	-	1.4	-	0.5	-	
		$V_R = 20\text{V}$	-	-	3.5	-	0.8	-	
		$V_R = 30\text{V}$	-	-	-	-	1.3	-	
		$V_R = 40\text{V}$	-	-	-	-	-	-	

Note : 1. Mounted on a FR4 PCB, single-sided copper, mini pad.

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

SBA0520Q-AU / SBA0530Q-AU / SBA0540Q-AU

TYPICAL CHARACTERISTIC CURVES

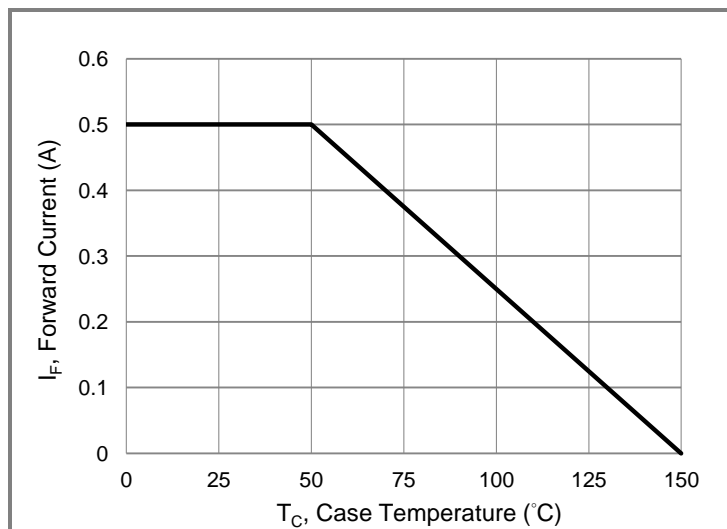


Fig.1 Forward Current Derating Curve

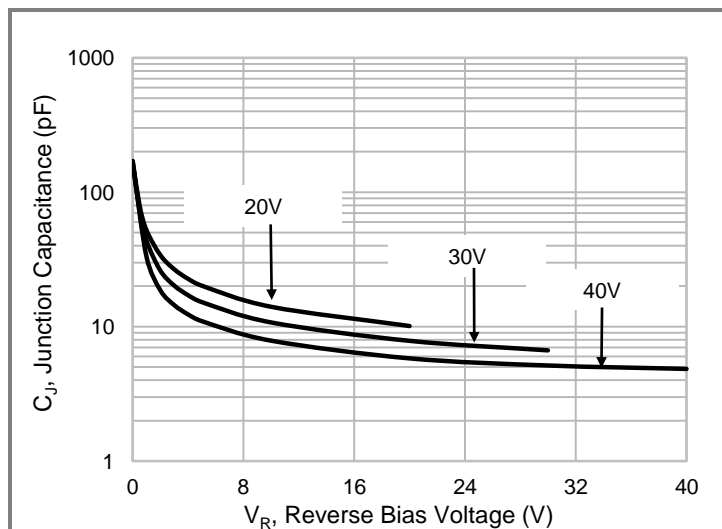


Fig. 2 Typical Junction Capacitance

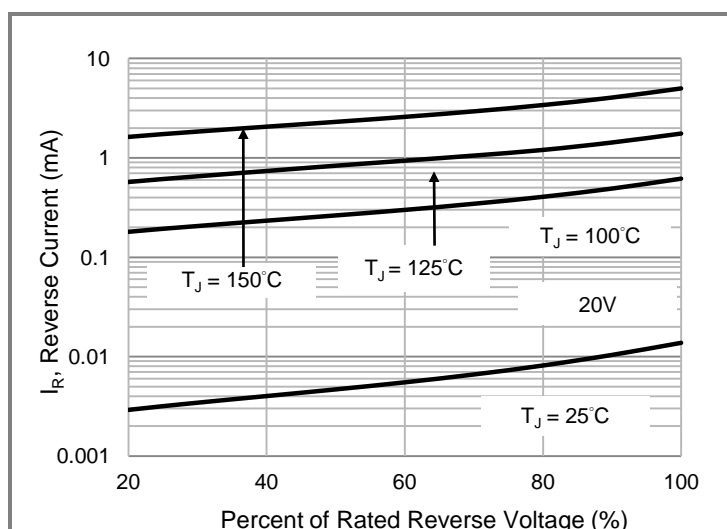


Fig.3 Typical Reverse Characteristics

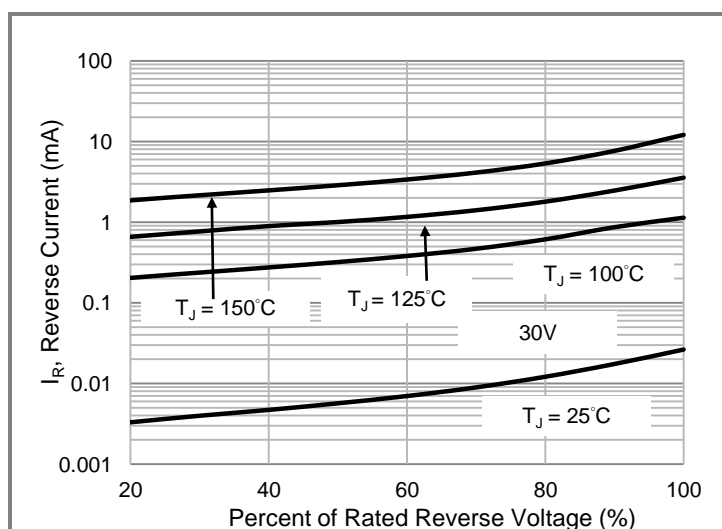


Fig.4 Typical Reverse Characteristics

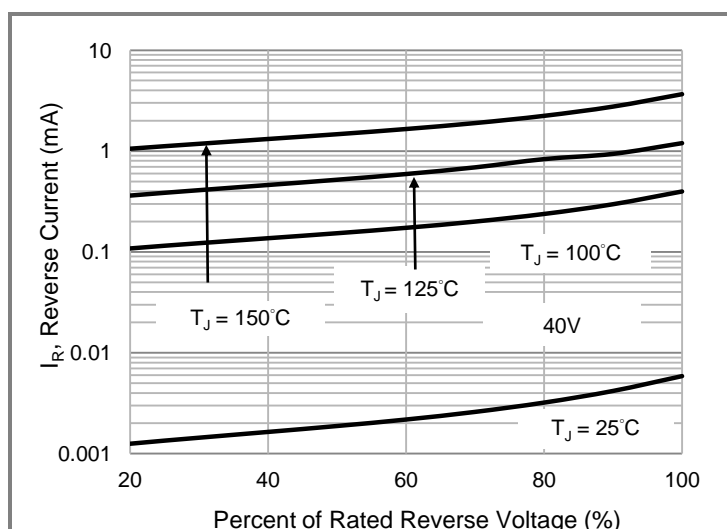


Fig.5 Typical Reverse Characteristics

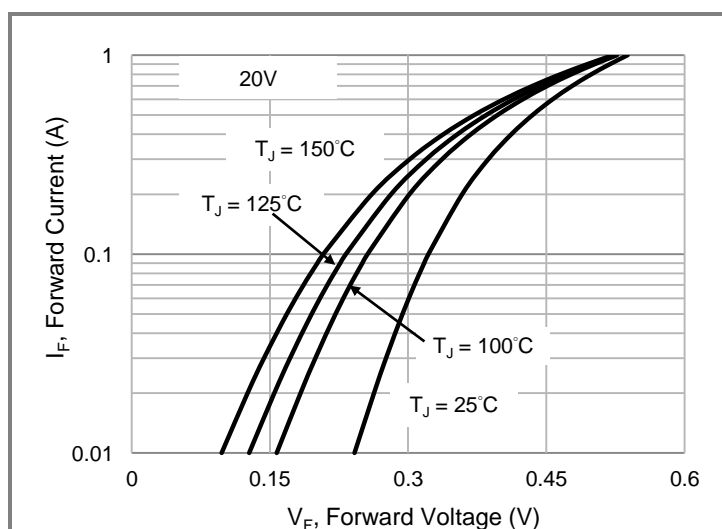


Fig.6 Typical Forward Characteristics

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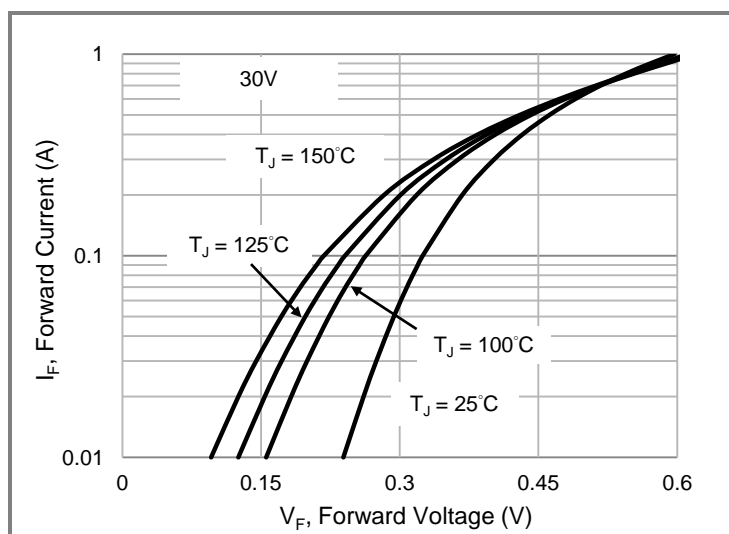


Fig.7 Typical Forward Characteristics

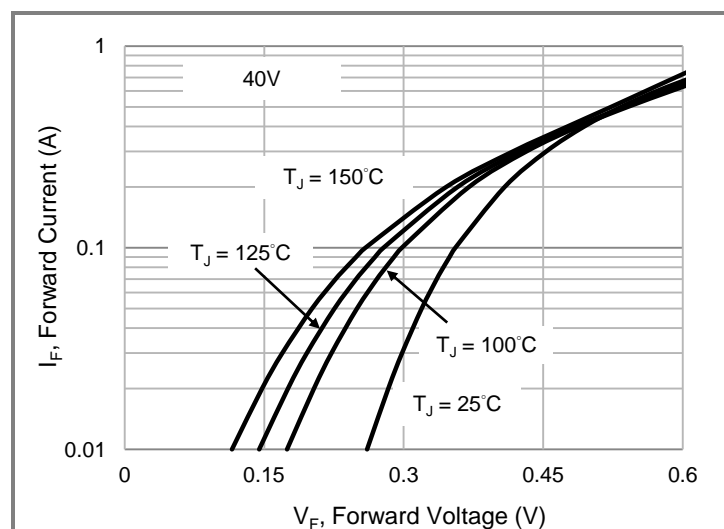


Fig.8 Typical Forward Characteristics

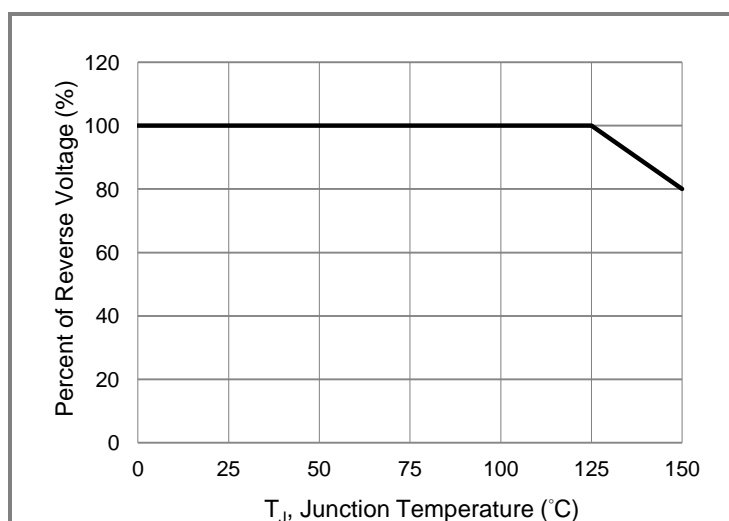


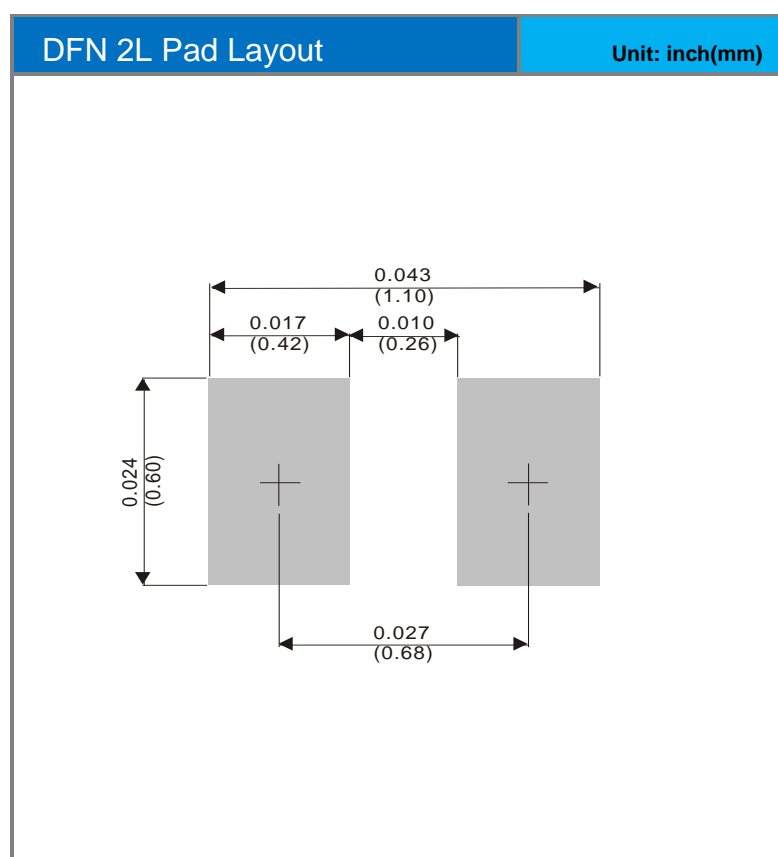
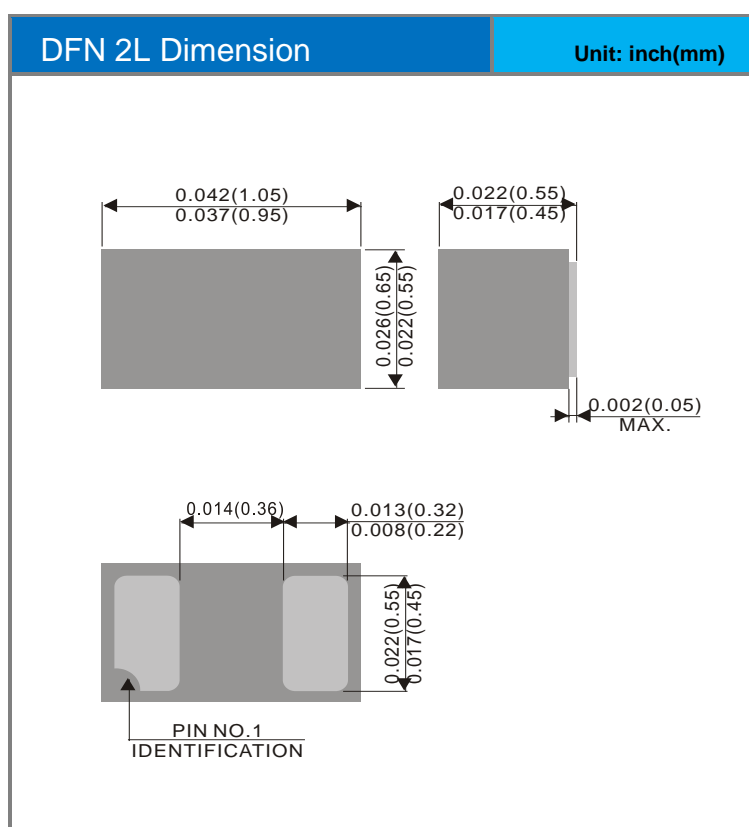
Fig.9 Operating Temperature Derating Curve

SBA0520Q-AU / SBA0530Q-AU / SBA0540Q-AU

Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
SBA0520Q-AU_R1_000A1	DFN 2L	8K / 7" Reel	A7	Halogen free
SBA0530Q-AU_R1_000A1	DFN 2L	8K / 7" Reel	E7	Halogen free
SBA0540Q-AU_R1_000A1	DFN 2L	8K / 7" Reel	C7	Halogen free

Packaging Information & Mounting Pad Layout





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