![PANJIT SEMICONDUCTOR logo]

SBA120CS / SBA130CS / SBA140CS

EXTREME LOW VF SCHOTTKY RECTIFIER

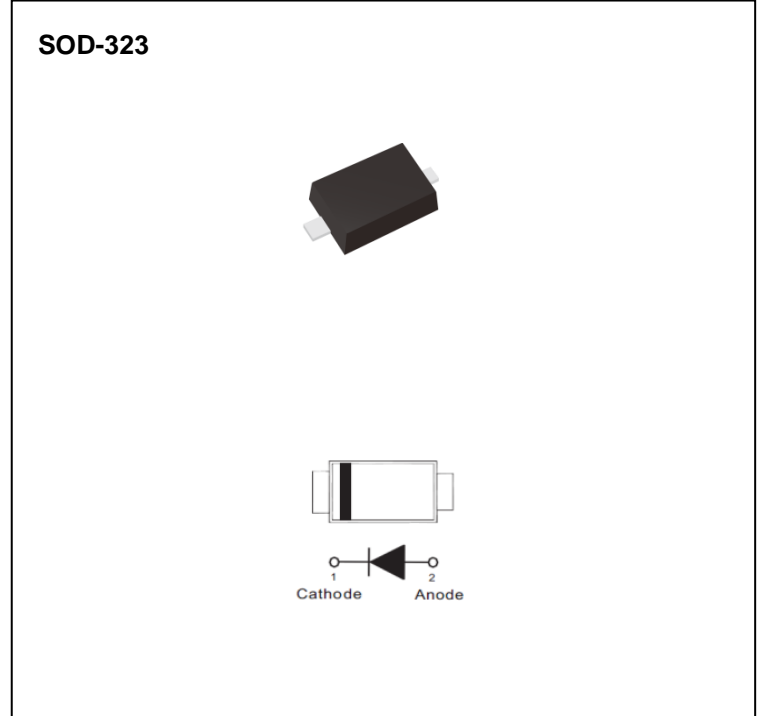| **Voltage**	**20-40 V**	**Current**	**1 A**

SOD-323

Features

- Ultra low forward voltage drop, low power loss
- Fast switching speed
- Surface mount package
- 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, SOD-323
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.00014 ounces, 0.0041 grams

1 Cathode — 2 Anode

Maximum Ratings (T$_A$ = 25°C unless otherwise noted)

PARAMETER	SYMBOL	SBA120CS	SBA130CS	SBA140CS	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$_{F(AV)}$		1		A
Peak forward surge current: 8.3ms single half sine-wave Superimposed on rated load	I$_{FSM}$		8		A
Typical thermal resistance	R$_{\theta JC}$[1]		230		^{o}C/W
	R$_{\theta JA}$[2]		650		
Operating junction temperature range	T$_J$		-55 to +150		^{o}C
Storage temperature range	T$_{STG}$		-55 to +150		^{o}C

Electrical Characteristics

PARAMETER	SYMBOL	TEST CONDITION		SBA120CS		SBA130CS		SBA140CS		UNIT
				TYP.	MAX.	TYP.	MAX.	TYP.	MAX.	
Forward voltage	V$_F$	I$_F$ = 10mA	T$_J$ =25°C	0.22	-	0.22	-	0.23	-	V
		I$_F$ = 0.5A		0.35	-	0.36	-	0.39	-	
		I$_F$ = 1A		-	0.45	-	0.47	-	0.51	
		I$_F$ = 10mA	T$_J$ =125°C	0.09	-	0.1	-	0.1	-	V
		I$_F$ = 0.5A		0.27	-	0.3	-	0.33	-	
Reverse current	I$_R$[3]	V$_R$ = 10V	T$_J$=25°C	7.5	-	5.9	-	3.6	-	μA
		V$_R$ = 20V		-	100	10	-	4.2	-	
		V$_R$ = 30V		-	-	-	100	6.1	-	
		V$_R$ = 40V		-	-	-	-	-	100	
		V$_R$ = 20V	T$_J$ =125°C	3.2	-	2.2	-	1.2	-	mA
		V$_R$ = 30V		-	-	3.9	-	1.7	-	
		V$_R$ = 40V		-	-	-	-	2.3	-	

Note : 1. Mounted on a FR4 PCB, single-sided copper, with 100cm^2 copper pad area.

    2. Mounted on a FR4 PCB, single-sided copper, mini pad.

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

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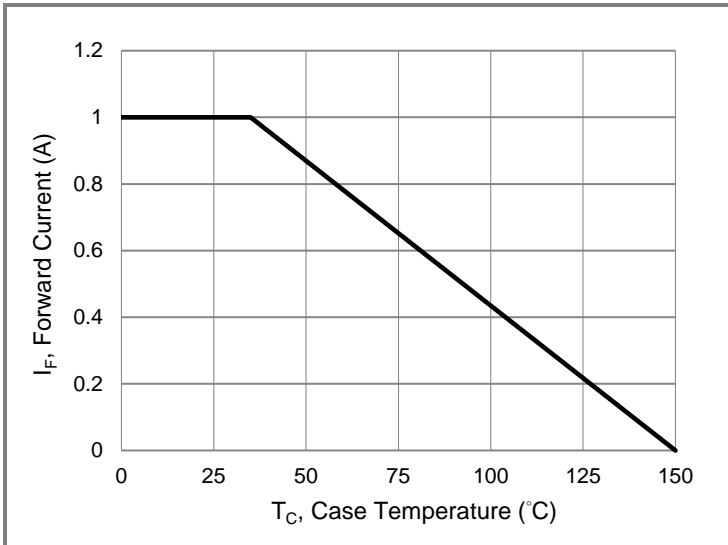## TYPICAL CHARACTERISTIC CURVES
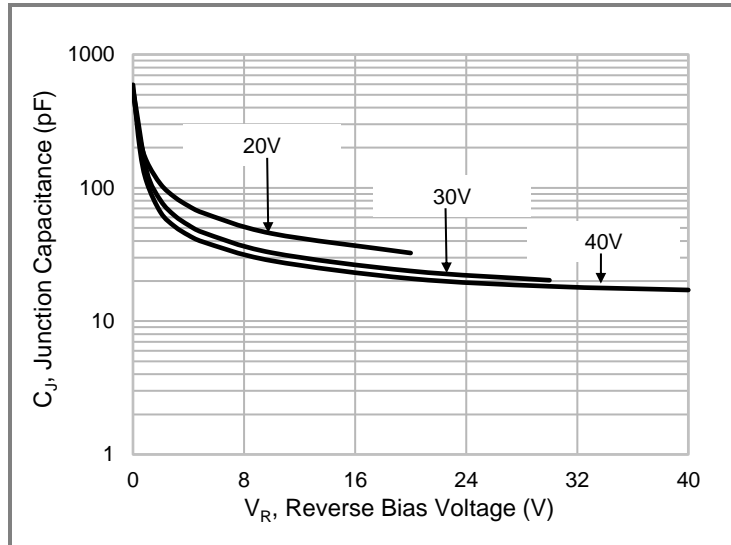

Fig.1 Forward Current Derating Curve
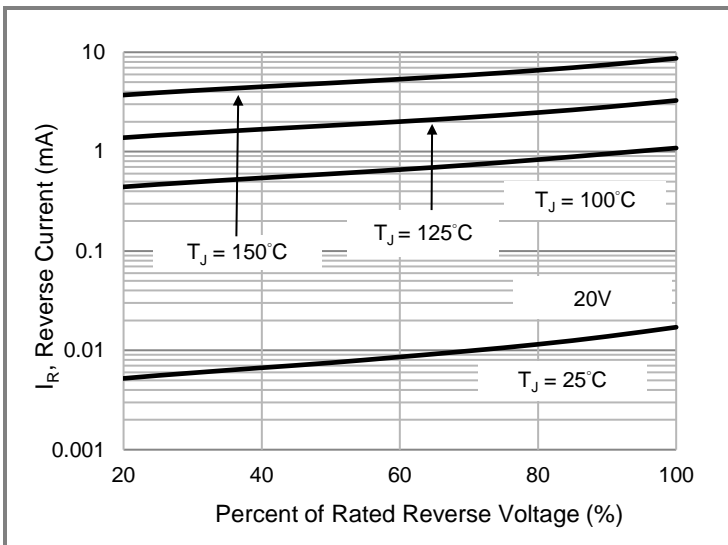

Fig. 2 Typical Junction Capacitance
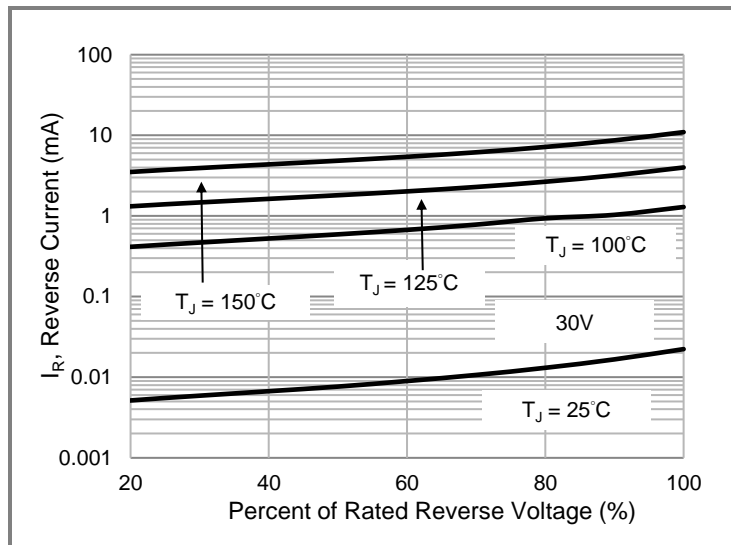

Fig.3 Typical Reverse Characteristics

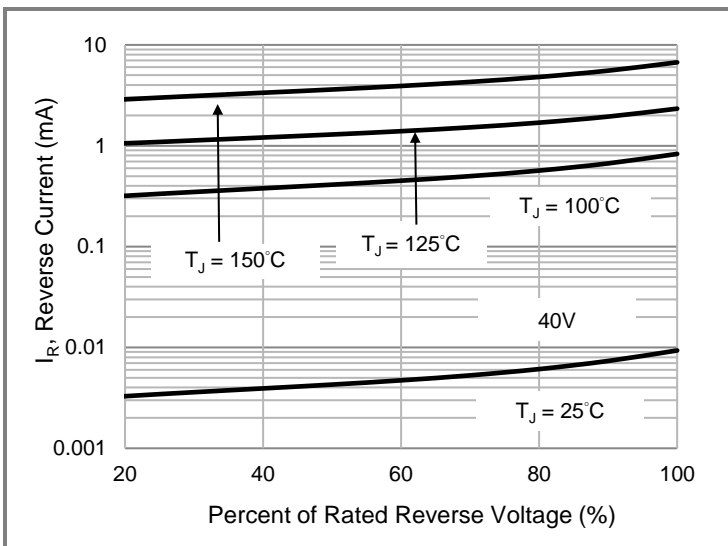
Fig.4 Typical Reverse Characteristics

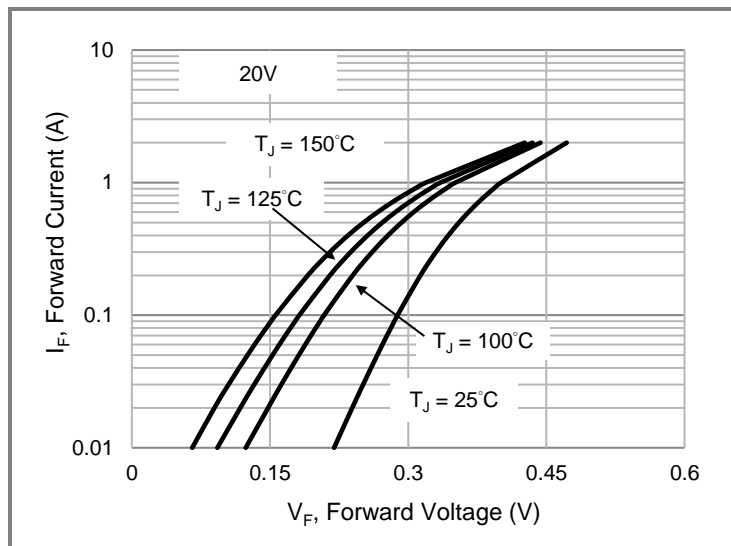**Fig.5 Typical Reverse Characteristics**

Fig.6 Typical Forward Characteristics
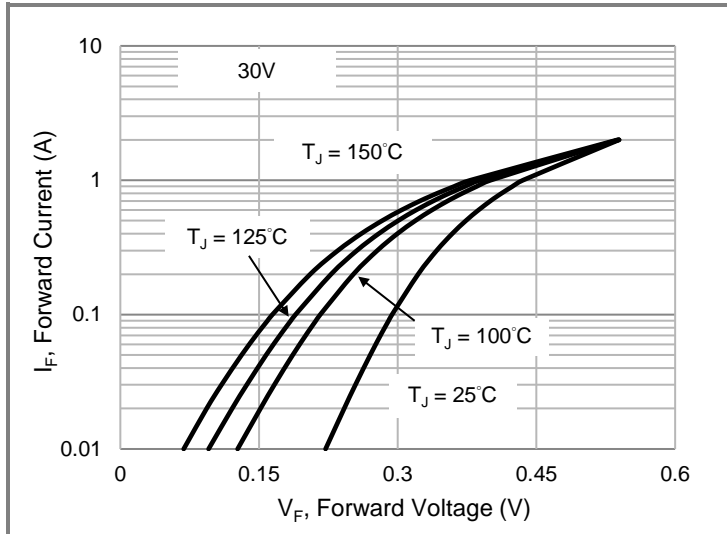
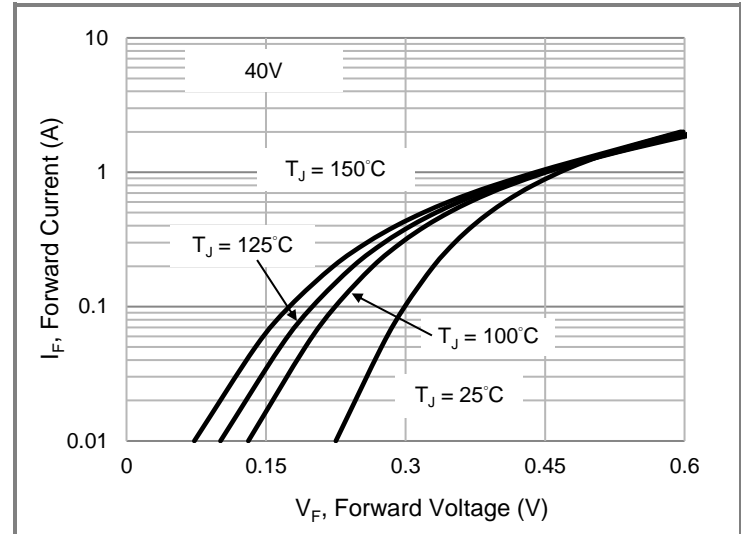## SBA120CS / SBA130CS / SBA140CS

Fig.7 Typical Forward Characteristics
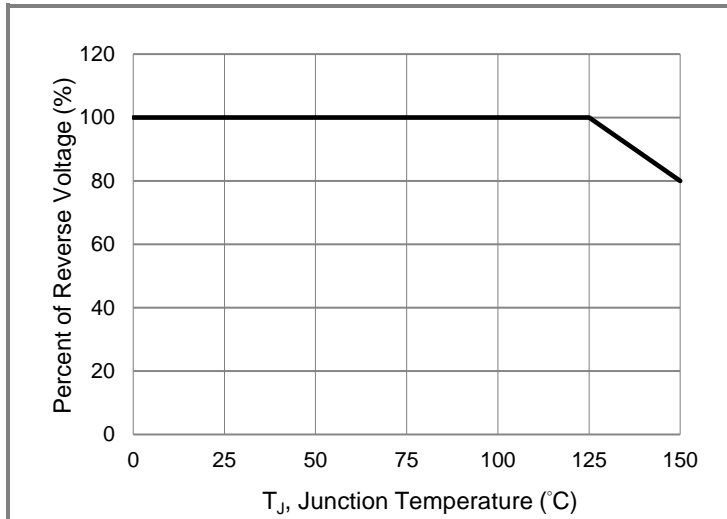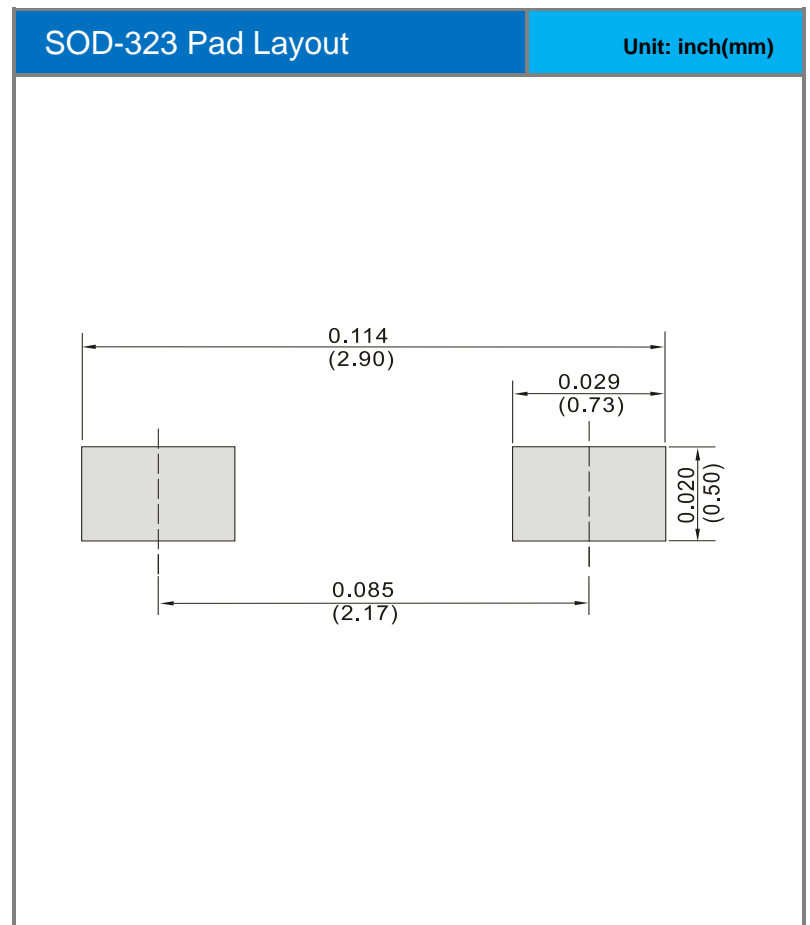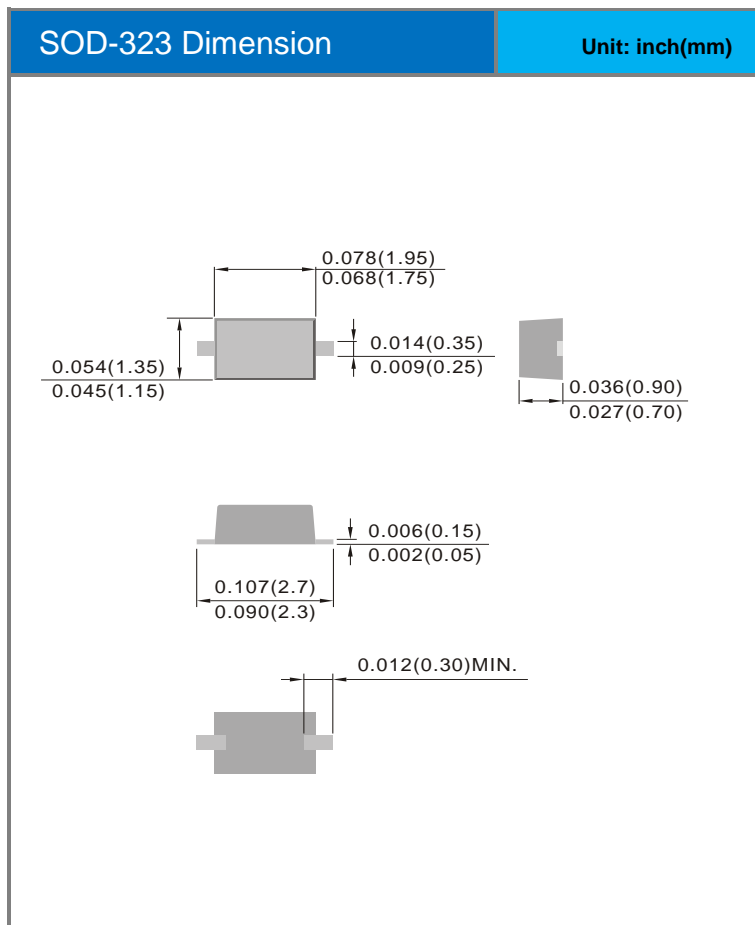

Fig.8 Typical Forward Characteristics

Fig.9 Operating Temperature Derating Curve

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Product and Packing Information

Part No.	Package Type	Packing Type	Marking
SBA120CS	SOD-323	5K pcs / 7" reel	A7
SBA130CS	SOD-323	5K pcs / 7" reel	B7
SBA140CS	SOD-323	5K pcs / 7" reel	C7

Packaging Information & Mounting Pad Layout

SOD-323 Dimension	Unit: inch(mm)

0.078(1.95)
0.068(1.75)

0.054(1.35)
0.045(1.15)

0.014(0.35)
0.009(0.25)

0.036(0.90)
0.027(0.70)

0.006(0.15)
0.002(0.05)

0.107(2.7)
0.090(2.3)

0.012(0.30)MIN.

SOD-323 Pad Layout	Unit: inch(mm)

0.114
(2.90)

0.029
(0.73)

0.020
(0.50)

0.085
(2.17)

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