

## 1A, 20V Schottky Barrier Surface Mount Rectifier

### FEATURES

- Low forward voltage, high efficiency
- High speed switching
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- Low stored charge
- For switching power supply
- Protection circuits

### MECHANICAL DATA

- Case: SOD-323F
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: Indicated by cathode band
- Weight: 4.60mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	1	A
$V_{RRM}$	20	V
$I_{FSM}$	5	A
$T_{J\ MAX}$	125	°C
Package	SOD-323F	
Configuration	Single die	



**SOD-323F**



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage	$V_{RRM}$	20	V
Reverse voltage, total rms value	$V_{R(RMS)}$	14	V
Forward current	$I_F$	1	A
Surge peak forward current 8.3ms single sine-wave superimposed on rated load	$I_{FSM}$	5	A
Junction temperature	$T_J$	-55 to +125	°C
Storage temperature	$T_{STG}$	-55 to +150	°C

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>UNIT</b>
Junction-to-ambient thermal resistance	$R_{\theta JA}$	220	°C/W

**Thermal Performance Note:** Units mounted on PCB (10mm x 5mm Cu pad test board)

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)					
<b>PARAMETER</b>	<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>MAX</b>	<b>UNIT</b>
Forward voltage <sup>(1)</sup>	$I_F = 10\text{mA}, T_J = 25^\circ\text{C}$	$V_F$	266	290	mV
	$I_F = 100\text{mA}, T_J = 25^\circ\text{C}$		337	360	mV
	$I_F = 1000\text{mA}, T_J = 25^\circ\text{C}$		487	650	mV
Reverse current @ rated $V_R$ <sup>(2)</sup>	$V_R = 5\text{V}, T_J = 25^\circ\text{C}$	$I_R$	-	10	μA
	$V_R = 8\text{V}, T_J = 25^\circ\text{C}$		-	20	μA
	$V_R = 15\text{V}, T_J = 25^\circ\text{C}$		-	50	μA
Junction capacitance	$f = 1\text{MHz}, V_R = 5\text{V}$	$C_J$	29	35	pF

**Notes:**

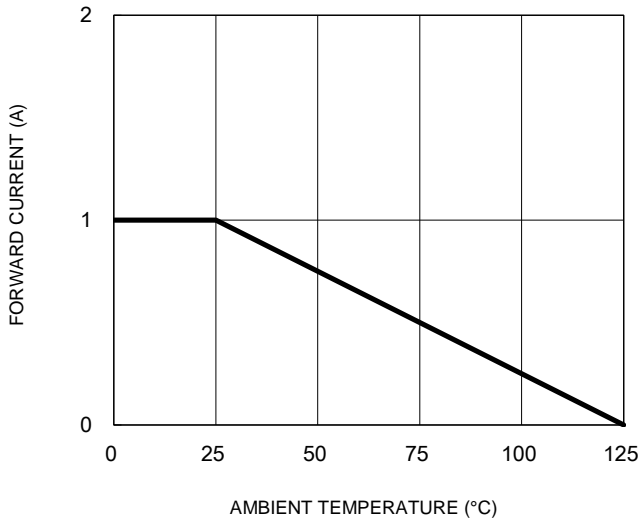
1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE</b>	<b>PACKAGE</b>	<b>PACKING</b>
BAT201M3 RRG	SOD-323F	3,000 / 7" Tape & Reel

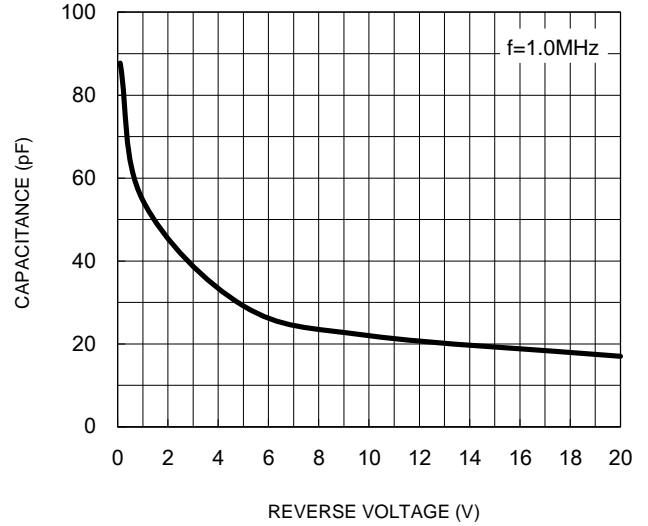
**CHARACTERISTICS CURVES**

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

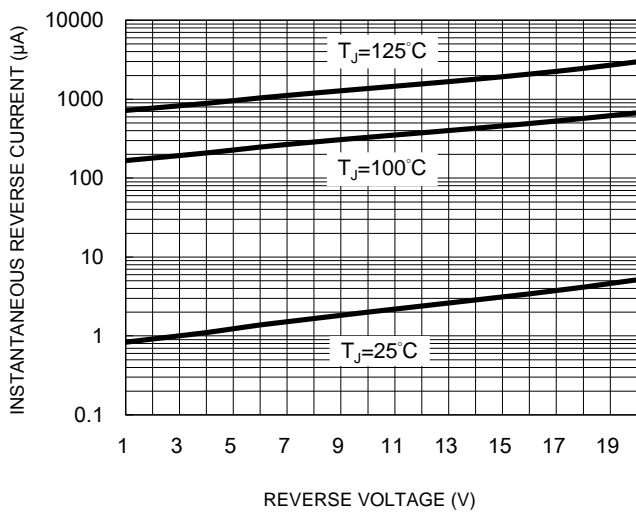
**Fig.1 Forward Current Derating Curve**



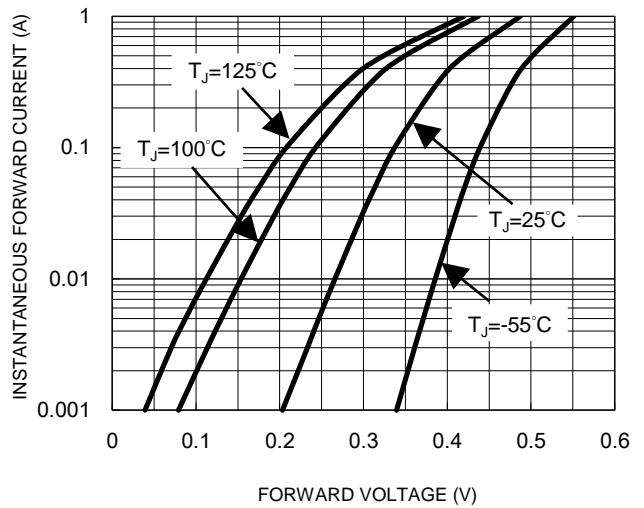
**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**

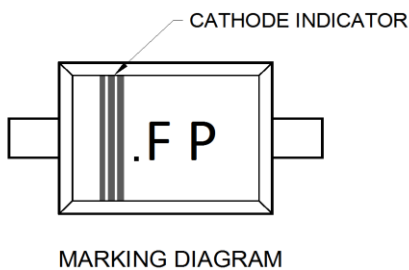
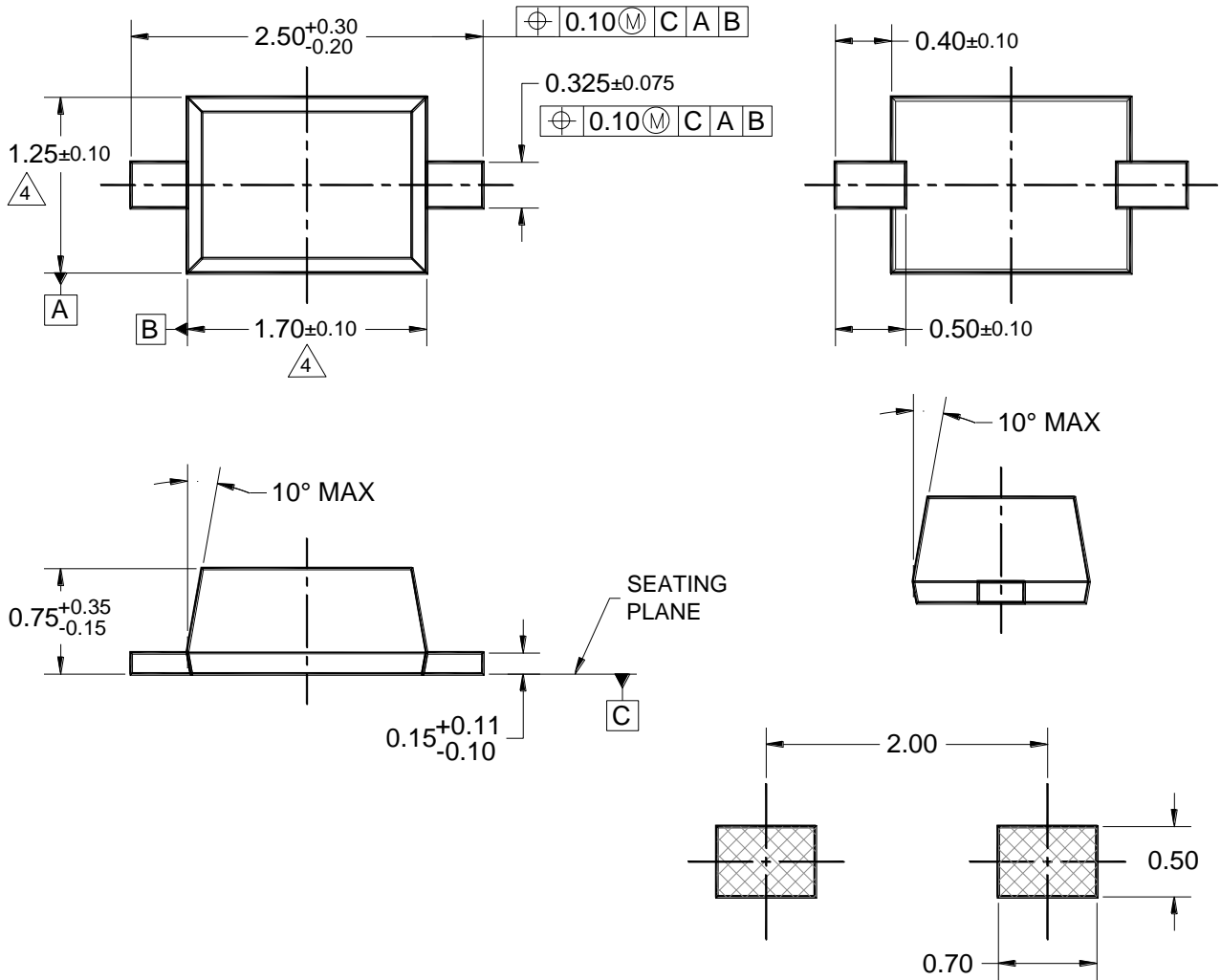


**Fig.4 Typical Forward Characteristics**



**PACKAGE OUTLINE DIMENSIONS**

**SOD-323F**



**SUGGESTED PAD LAYOUT**

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: EIAJ ED-7500A-1, SC-90.

4. MOLDED PLASTIC BODY LATERAL DIMENSIONS DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

5. DWG NO. REF: HQ2SD07-SOD323F-018 REV A.

## **Notice**

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf assumes no responsibility or liability for any errors or inaccuracies.

Purchasers are solely responsible for the choice, selection, and use of TSC products and TSC assumes no liability for application assistance or the design of Purchasers' products.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.

# Mouser Electronics

Authorized Distributor

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

[Taiwan Semiconductor:](#)

[BAT201M3 RRG](#)