

## 500mA, 30V Schottky Barrier Diode

### FEATURES

- Designed for mounting on small surface
- Low Capacitance
- Low forward voltage drop
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- Adapters
- For switching power supply
- Low stored charge
- Inverter

### 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
$I_F$	500	mA
$V_{RRM}$	30	V
$I_{FSM}$	5	A
$V_F$ at $I_F = 500\text{mA}$	0.47	V
$T_{J\text{MAX}}$	125	°C
Package	SOD-323F	
Configuration	Single die	



SOD-323F



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	B0530WS	UNIT
Marking code on the device		B3	
Repetitive peak reverse voltage	$V_{RRM}$	30	V
Forward current	$I_F$	500	mA
Non-repetitive peak forward surge current	$t = 8.3\text{ms}$ $I_{FSM}$	5	A
Junction temperature range	$T_J$	-65 to +125	°C
Storage temperature range	$T_{STG}$	-65 to +125	°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	LIMIT	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	426	°C/W

<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>	$I_F = 100\text{mA}, T_J = 25^\circ\text{C}$	$V_F$	-	0.36	V
	$I_F = 500\text{mA}, T_J = 25^\circ\text{C}$		-	0.47	V
Reverse current @ rated $V_R$ <sup>(2)</sup>	$V_R = 15\text{V}, T_J = 25^\circ\text{C}$	$I_R$	-	80	$\mu\text{A}$
	$V_R = 20\text{V}, T_J = 25^\circ\text{C}$		-	100	$\mu\text{A}$
	$V_R = 30\text{V}, T_J = 25^\circ\text{C}$		-	500	$\mu\text{A}$
Junction capacitance	1MHz, $V_R = 0\text{V}$	$C_J$	-	160	pF

**Notes:**

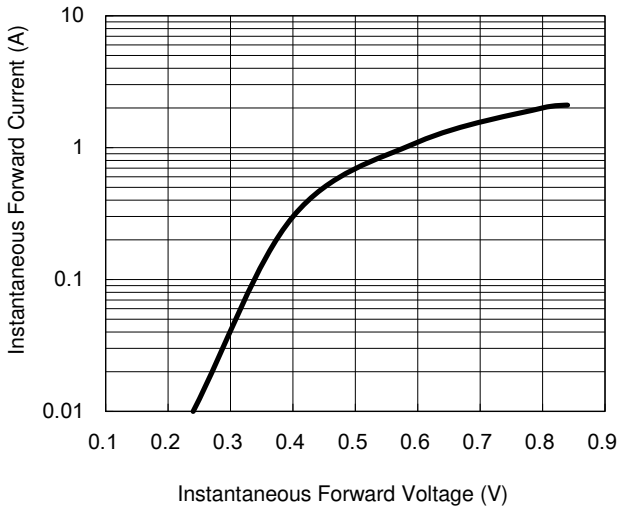
1. Pulse test with  $PW = 0.3\text{ms}$
2. Pulse test with  $PW = 30\text{ms}$

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE</b>	<b>PACKAGE</b>	<b>PACKING</b>
B0530WS RRG	SOD-323F	3,000 / 7" Tape & Reel
B0530WS R9G	SOD-323F	10,000 / 13" Tape & Reel

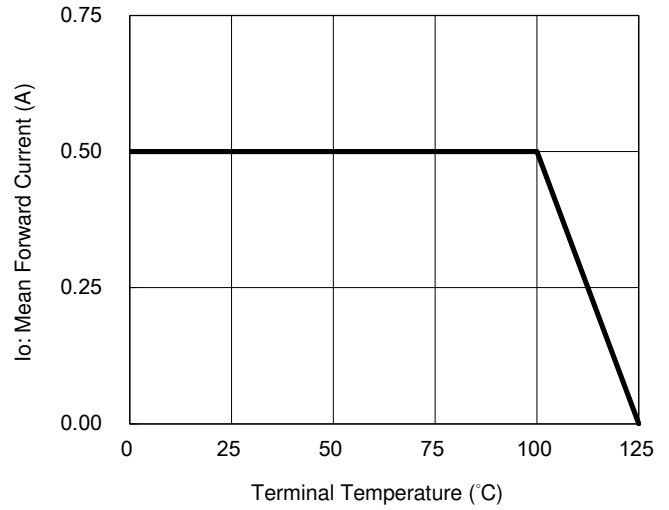
**CHARACTERISTICS CURVES**

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

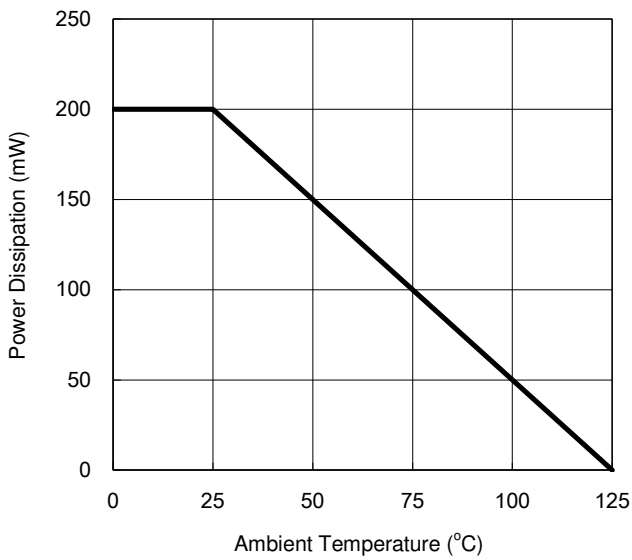
**Fig.1 Typical Forward Characteristics**



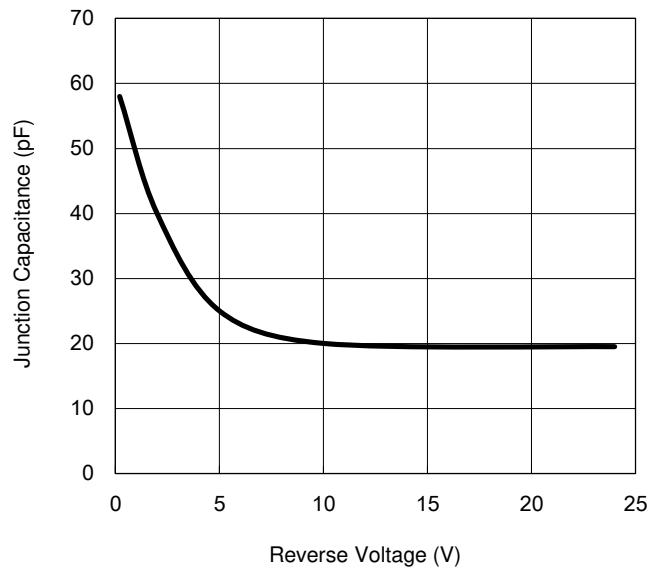
**Fig.2 Forward Current Derating Curve**



**Fig.3 Admissible Power Dissipation Curve**



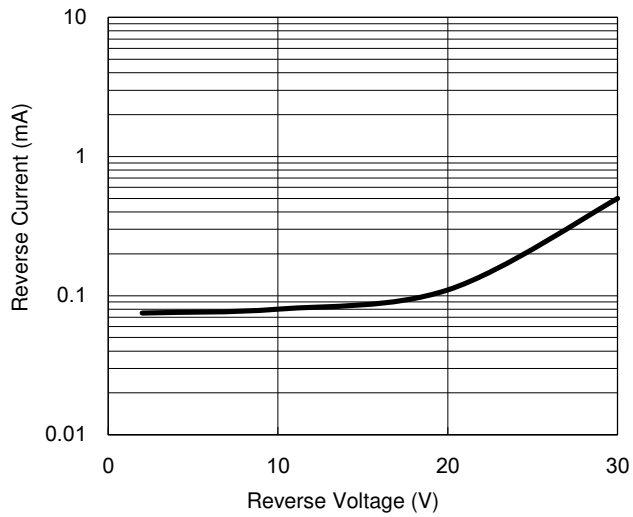
**Fig.4 Typical Junction Capacitance**



### CHARACTERISTICS CURVES

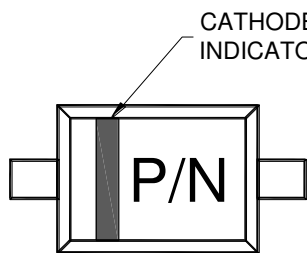
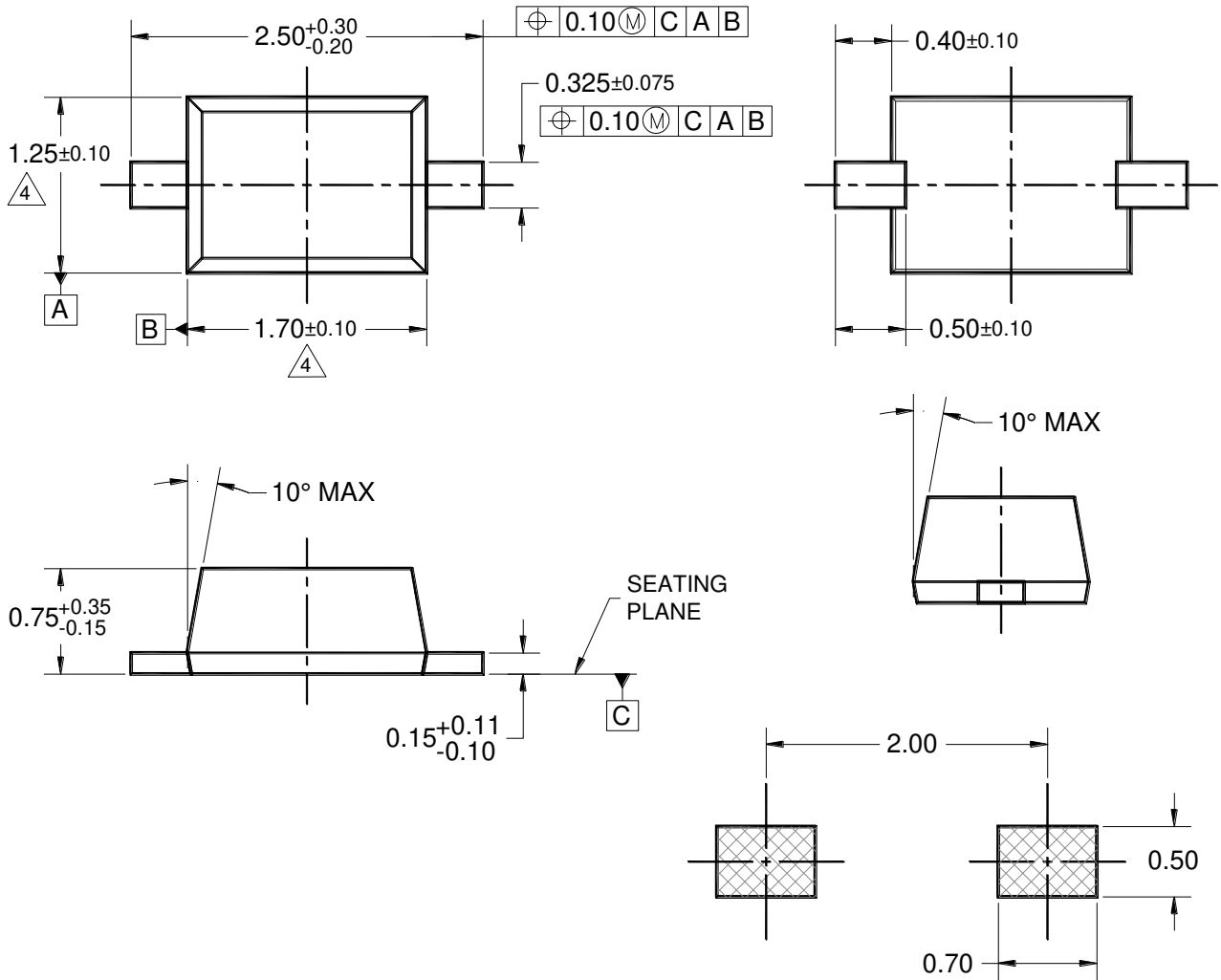
( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig.5 Typical Reverse Characteristics**



**PACKAGE OUTLINE DIMENSIONS**

**SOD-323F**



MARKING DIAGRAM

P/N = MARKING CODE

**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.

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