

## 250mA, 100V SMD Switching Diode

### FEATURES

- Fast switching device ( $t_{rr} < 4\text{ns}$ )
- Ideal for automated placement
- Moisture sensitivity level: level 1, per J-STD-020
- Compliance to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- On-board DC/DC converter

### MECHANICAL DATA

- Case: SOD-323
- Molding compound meets UL 94 V-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:  $4.85 \pm 0.5\text{mg}$  (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	250	mA
$V_R$	100	V
$V_F$ at $I_F=150\text{mA}$	1.25	V
$T_J$ Max.	150	°C
Package	SOD-323	
Configuration	Single die	



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	BAS316	UNIT
Marking code on the device		A6	
Power dissipation	$P_D$	200	mW
Forward current	$I_F$	250	mA
Non-repetitive peak forward surge current	$I_{FRM}$	Pulse Width = 1 $\mu\text{s}$	4.0
		Pulse Width = 1 ms	1.0
Junction temperature range	$T_J$	-65 to +150	°C
Storage temperature range	$T_{STG}$	-65 to +150	°C

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)					
<b>PARAMETER</b>	<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>MIN</b>	<b>MAX</b>	<b>UNIT</b>
Forward voltage per diode <sup>(1)</sup>	$I_F = 1.0\text{mA}, T_J = 25^\circ\text{C}$	$V_F$	-	0.715	V
	$I_F = 10\text{mA}, T_J = 25^\circ\text{C}$		-	0.855	
	$I_F = 50\text{mA}, T_J = 25^\circ\text{C}$		-	1.000	
	$I_F = 150\text{mA}, T_J = 25^\circ\text{C}$		-	1.250	
Reverse voltage	$I_R = 100\mu\text{A}, T_J = 25^\circ\text{C}$	$V_R$	100	-	V
Reverse current @ rated $V_R$ <sup>(2)</sup>	$V_R = 25\text{V}, T_J = 25^\circ\text{C}$	$I_R$	-	0.03	$\mu\text{A}$
	$V_R = 75\text{V}, T_J = 25^\circ\text{C}$		-	1.00	
Junction capacitance	$f = 1\text{MHz}, V_R = 0\text{V}$	$C_J$	-	1.5	pF
Reverse recovery time	$I_F = 10\text{mA}, I_R = 10\text{mA}, R_L = 100\Omega$	$t_{rr}$	-	4.0	ns

**Notes:**

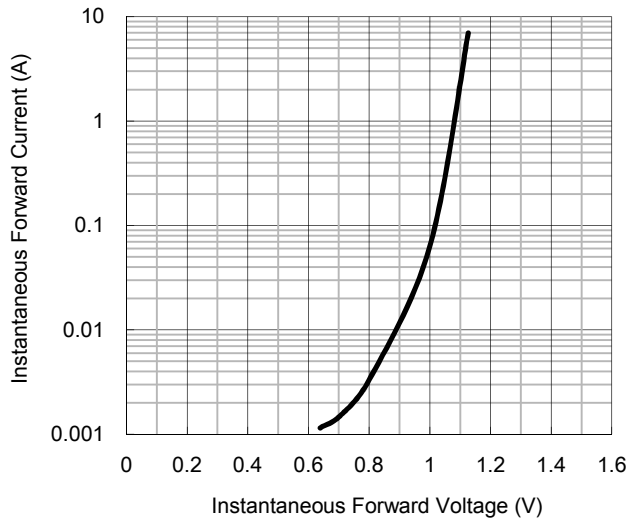
1. Pulse test with  $PW=0.3\text{ms}$
2. Pulse test with  $PW=30\text{ms}$

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE</b>	<b>PACKAGE</b>	<b>PACKING</b>
BAS316 RRG	SOD-323	3K / 7" Reel

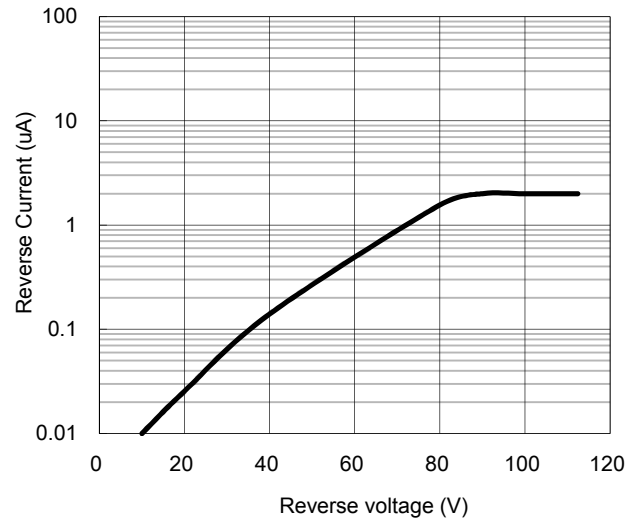
**CHARACTERISTICS CURVES**

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

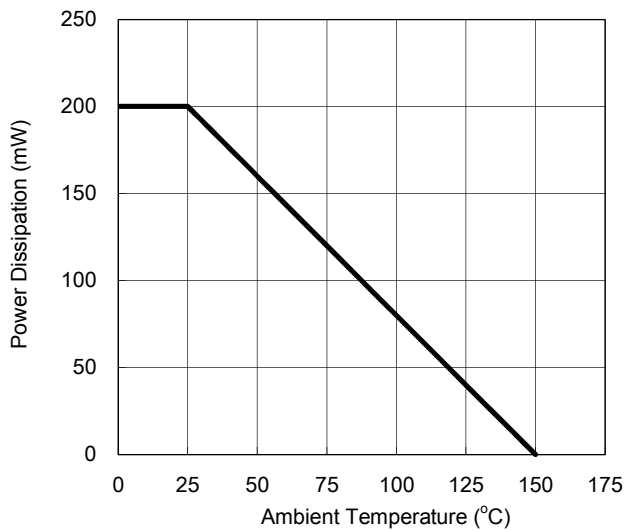
**Fig.1 Typical Forward Characteristics**



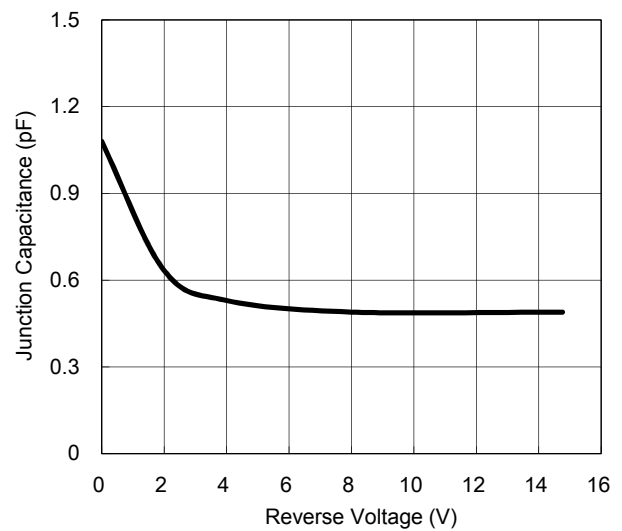
**Fig.2 Reverse Current**



**Fig.3 Admissible Power Dissipation Curve**

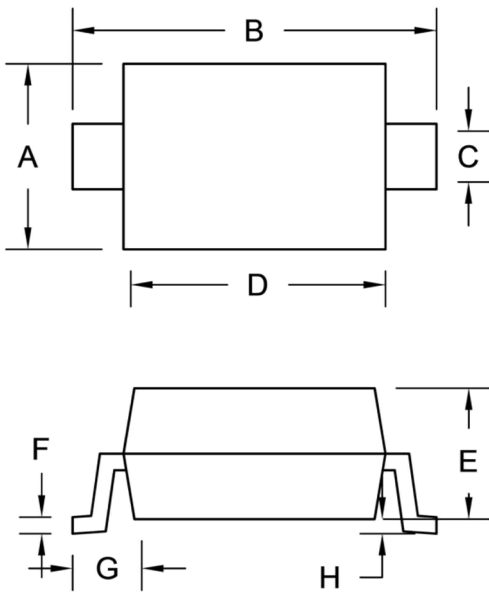


**Fig.4 Typical Junction Capacitance**



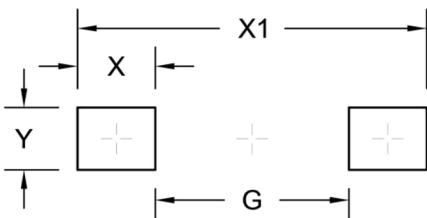
**PACKAGE OUTLINE DIMENSION**

SOD-323



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.150	1.400	0.045	0.055
B	2.300	2.700	0.091	0.106
C	0.250	0.450	0.010	0.018
D	1.600	1.800	0.063	0.071
E	0.800	1.000	0.031	0.039
F	0.050	0.177	0.002	0.007
G	0.475 (Ref.)		0.019 (Ref.)	
H	-	0.100	-	0.004

**SUGGEST PAD LAYOUT**



Symbol	Unit (mm)	Unit (inch)
G	1.52	0.060
X	0.61	0.024
X1	2.74	0.108
Y	0.49	0.019

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