

## 250mA, 100V High-Speed Switching SMD Diode

### FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- 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-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
$I_F$	250	mA
$V_{RRM}$	100	V
$V_F$ at $I_F = 150\text{mA}$	1.25	V
$T_{J\text{MAX}}$	150	°C
Package	SOD-323F	
Configuration	Single die	



SOD-323F



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)				
PARAMETER		SYMBOL	BAS316WS	UNIT
Marking code on the device			W2	
Repetitive peak reverse voltage		$V_{RRM}$	100	V
Forward current		$I_F$	250	mA
Non-repetitive peak forward surge current	Pulse Width = $1\mu\text{s}$	$I_{FSM}$	4	A
	Pulse Width = 1ms		1	
Junction temperature range		$T_J$	-65 to +150	°C
Storage temperature range		$T_{STG}$	-65 to +150	°C

**THERMAL PERFORMANCE**

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	351	°C/W

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

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

PARAMETER	CONDITIONS	SYMBOL	MIN	MAX	UNIT
Forward voltage <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	V
	$I_F = 50\text{mA}, T_J = 25^\circ\text{C}$		-	1.000	V
	$I_F = 150\text{mA}, T_J = 25^\circ\text{C}$		-	1.250	V
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	$\mu\text{A}$
Junction capacitance	1MHz, $V_R = 0\text{V}$	$C_J$	-	1.5	pF
Reverse recovery time	$I_F = 10\text{mA}, I_R = 10\text{mA}, I_{rr} = 1\text{mA}$	$t_{rr}$	-	4.0	ns

**Notes:**

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

**ORDERING INFORMATION**

ORDERING CODE	PACKAGE	PACKING
BAS316WS RR	SOD-323F	3K / 7" Reel
BAS316WS RRG	SOD-323F	3K / 7" Reel
BAS316WS R9	SOD-323F	10K / 13" Reel
BAS316WS R9G	SOD-323F	10K / 13" Reel

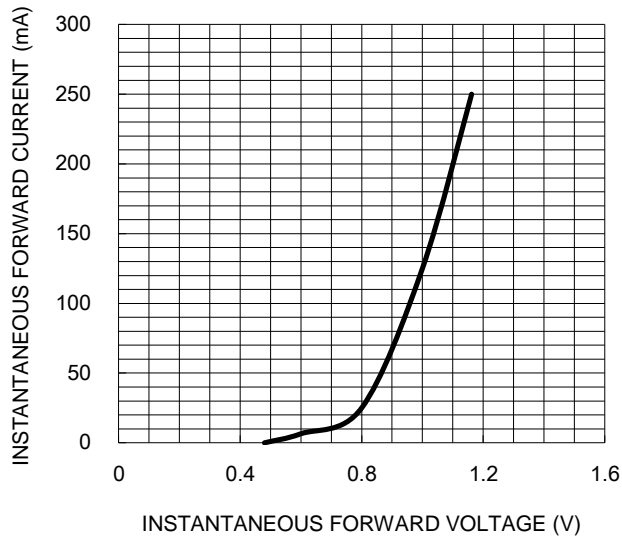
**Notes:**

1. "G" means green compound (halogen-free)

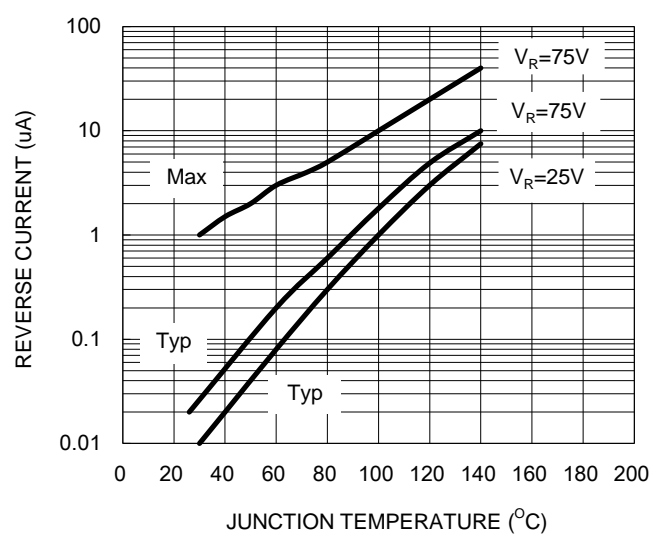
## CHARACTERISTICS CURVES

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

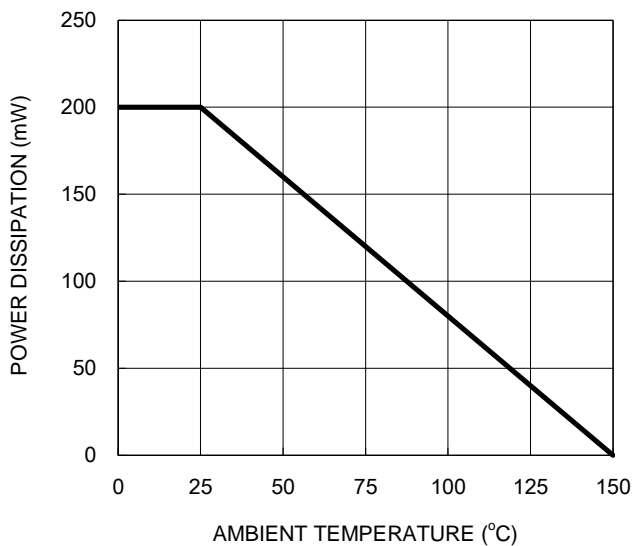
**Fig.1 Typical Forward Characteristics**



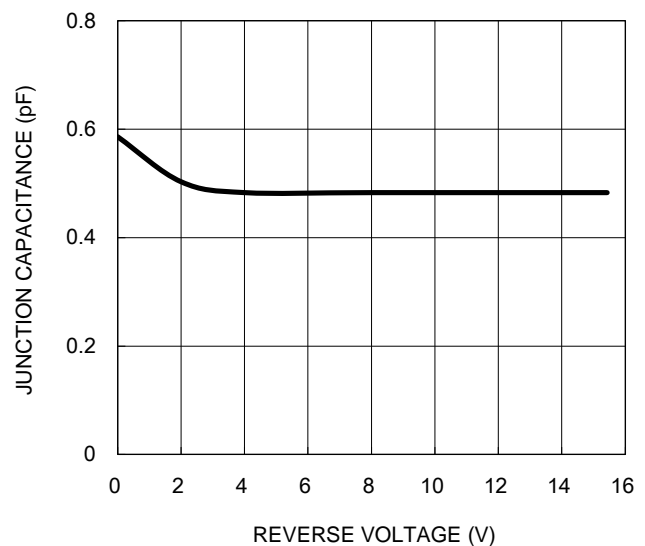
**Fig.2 Reverse Current VS. Junction Temperature**



**Fig.3 Power Dissipation Curve**

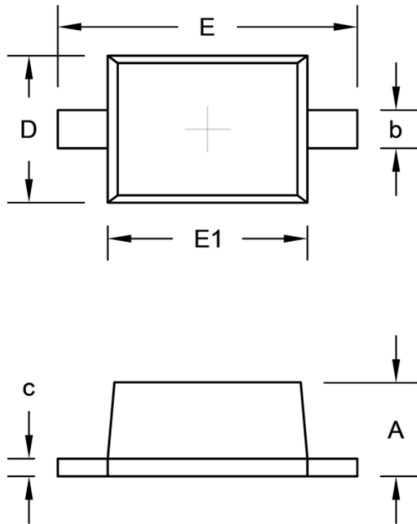


**Fig.4 Typical Junction Capacitance**



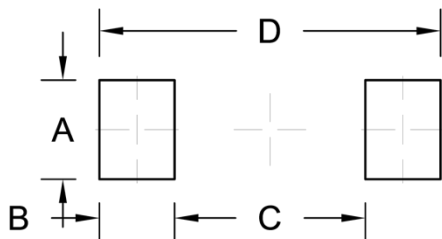
## PACKAGE OUTLINE DIMENSION

SOD-323F



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	0.60	1.00	0.024	0.039
b	0.25	0.40	0.010	0.016
c	0.05	0.25	0.002	0.010
D	1.15	1.35	0.045	0.053
E	2.30	2.80	0.091	0.110
E1	1.60	1.80	0.063	0.071

## SUGGEST PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	0.83	0.033
B	0.63	0.025
C	1.60	0.063
D	2.86	0.113

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