

## 150mA, 75V Switching Diode

### FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- High surge current capability
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	150	mA
$V_{RRM}$	75	V
$I_{FSM}$	2	A
$V_F$ at $I_F=150mA$	1.25	V
$T_{J\ MAX}$	150	°C
Package	SOT-23	
Configuration	Single die	

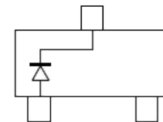
### APPLICATIONS

- Switching mode power supply (SMPS)



### MECHANICAL DATA

- Case: SOT-23
- Molding compound meets UL 94 V-0 flammability rating
- Moisture sensitivity level: level 1, per J-STD-020
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Weight:  $8 \pm 0.5$  mg (approximately)



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	BAS16	UNIT
Marking code on the device		A6	
Repetitive peak reverse voltage	$V_{RRM}$	75	V
Forward current	$I_F$	150	mA
Non-repetitive peak forward surge current @ $t = 0.001$ s	$I_{FSM}$	2	A
Junction temperature range	$T_J$	-65 to +150	°C
Storage temperature range	$T_{STG}$	-65 to +150	°C

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>UNIT</b>
Junction-to-ambient thermal resistance	$R_{\theta JA}$	375	$^{\circ}C/W$

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^{\circ}C$ 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>	$I_F = 1.0mA, T_J = 25^{\circ}C$	$V_F$	-	0.715	V
	$I_F = 10mA, T_J = 25^{\circ}C$			0.855	
	$I_F = 50mA, T_J = 25^{\circ}C$			1.000	
	$I_F = 150mA, T_J = 25^{\circ}C$			1.250	
Reverse current <sup>(2)</sup>	$V_R = 7.5V, T_J = 25^{\circ}C$	$I_R$	-	1	$\mu A$
Junction capacitance	$f = 1 MHz, V_R = 0V$	$C_J$	-	2	pF
Reverse recovery time	$I_F = 10mA, I_R = 60mA, I_{RR} = 10\%I_R, R_L = 100\Omega$	$t_{rr}$		4	ns

**Notes:**

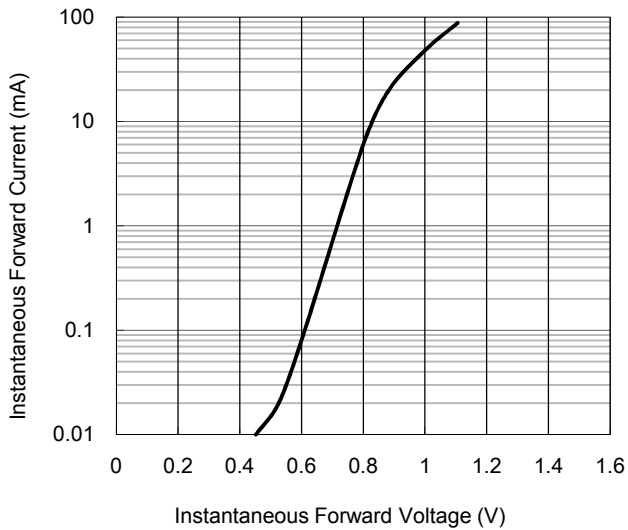
1. Pulse test with PW=0.3 ms
2. Pulse test with PW=30 ms

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE</b>	<b>PACKAGE</b>	<b>PACKING</b>
BAS16 RF	SOT-23	3K / 7" Reel
BAS16 RFG	SOT-23	3K / 7" Reel
BAS16 R5	SOT-23	10K / 13" Reel
BAS16 R5G	SOT-23	10K / 13" Reel

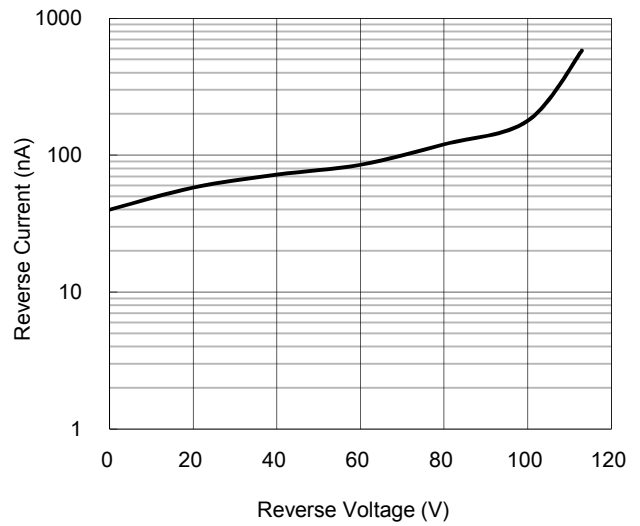
**CHARACTERISTICS CURVES**

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

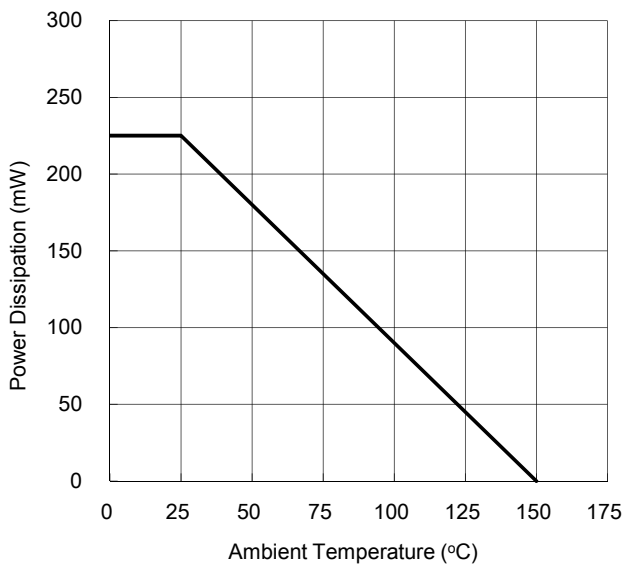
**Fig.1 Typical Forward Characteristics**



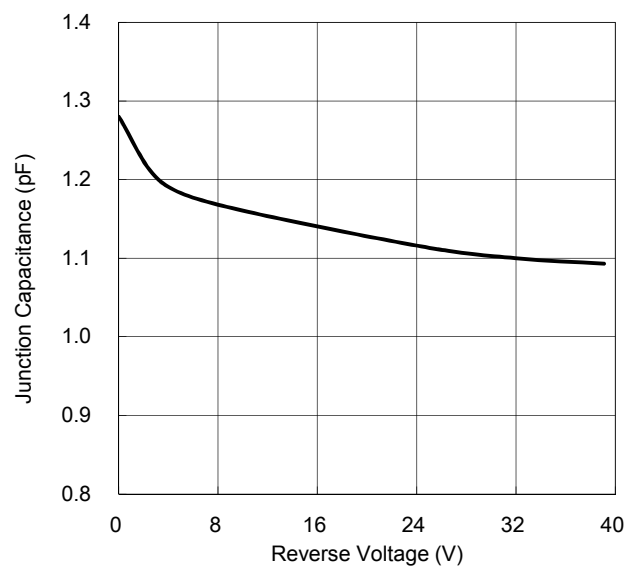
**Fig.2 Reverse Current VS. Reverse Voltage**



**Fig.3 Admissible Power Dissipation Curve**

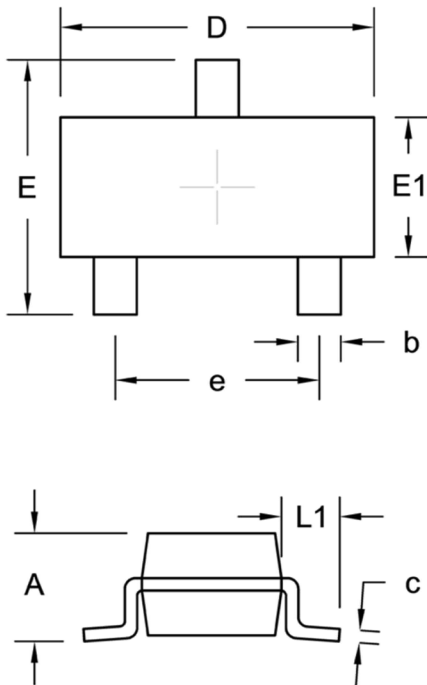


**Fig.4 Typical Junction Capacitance**



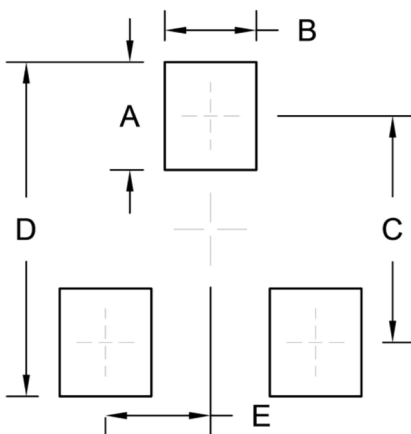
**PACKAGE OUTLINE DIMENSION**

**SOT-23**



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	0.89	1.12	0.035	0.044
b	0.30	0.50	0.012	0.020
c	0.08	0.20	0.003	0.008
D	2.80	3.04	0.110	0.120
E	2.10	2.64	0.083	0.104
E1	1.20	1.40	0.047	0.055
e	1.90 BSC		0.075 BSC	
L1	0.54 REF.		0.021 REF.	

**SUGGESTED PAD LAYOUT**



Symbol	Unit (mm)	Unit (inch)
A	1.00	0.039
B	0.85	0.033
C	2.10	0.083
D	3.10	0.122
E	0.98	0.039

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