

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	

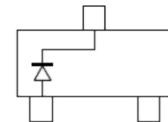
APPLICATIONS

- 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 ± 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

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	375	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	$I_F = 1.0\text{mA}, T_J = 25^\circ\text{C}$	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 current ⁽²⁾	$V_R = 7.5\text{V}, T_J = 25^\circ\text{C}$	I_R	-	1	μA
Junction capacitance	$f = 1\text{ MHz}, V_R = 0\text{V}$	C_J	-	2	pF
Reverse recovery time	$I_F = 10\text{mA}, I_R = 60\text{mA}, I_{RR} = 10\%I_R, R_L = 100\Omega$	t_{rr}		4	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
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

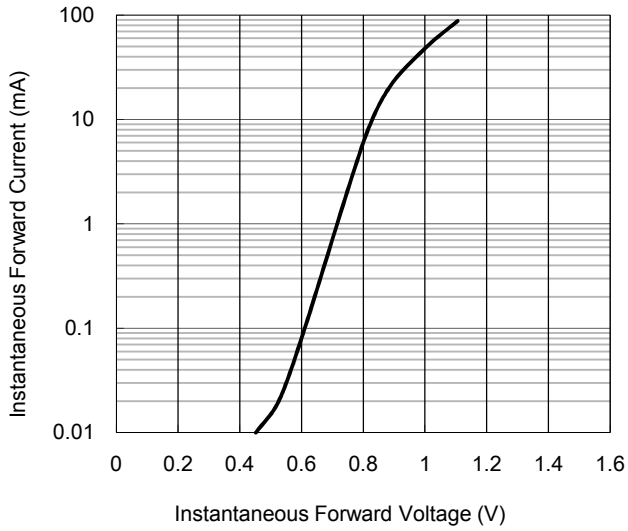


Fig.2 Reverse Current VS. Reverse Voltage

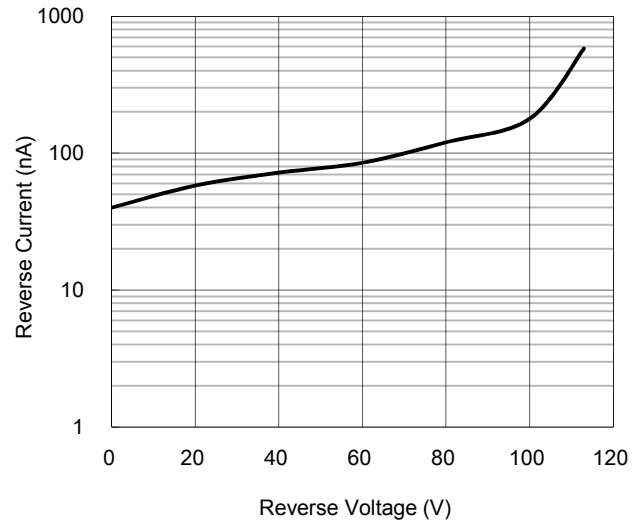


Fig.3 Admissible Power Dissipation Curve

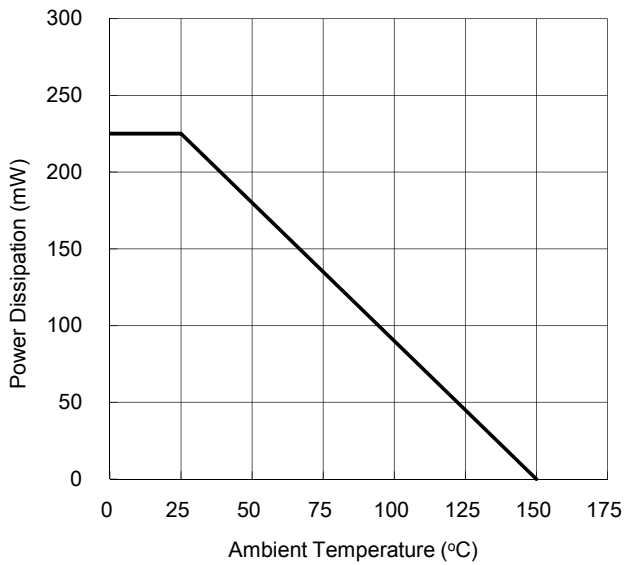
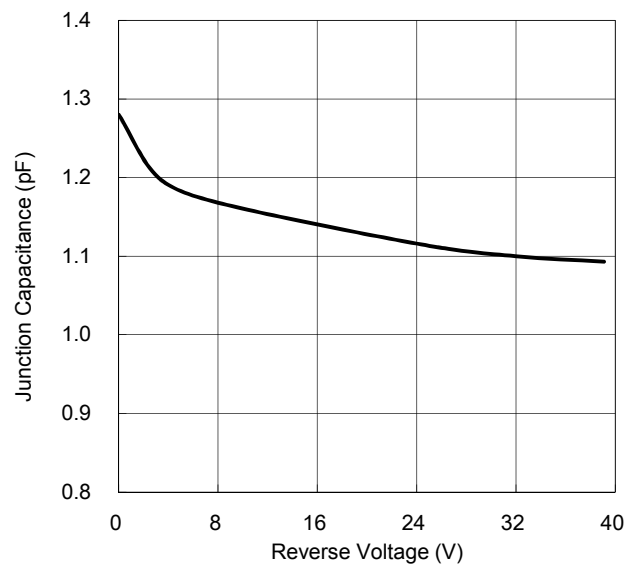
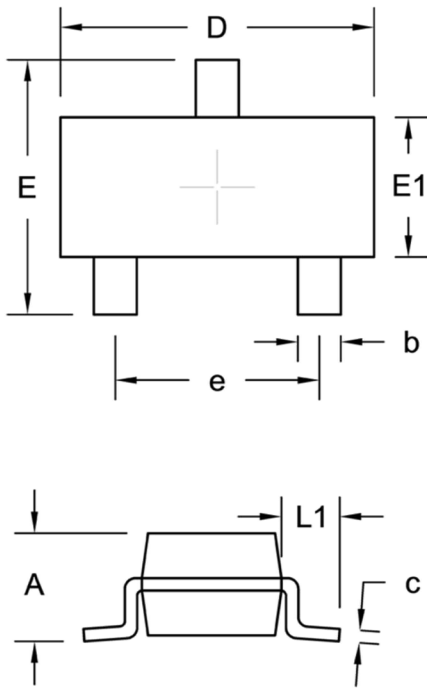


Fig.4 Typical Junction Capacitance



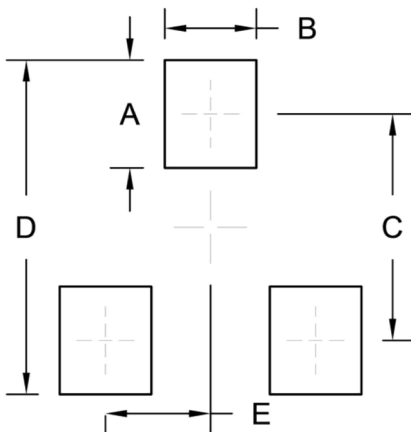
PACKAGE OUTLINE DIMENSION

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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