

## 150mA, 75V Switching Diode

### FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- High surge current capability
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

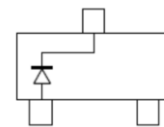
### APPLICATIONS

- Switching mode power supply (SMPS)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_{F(AV)}$	150	mA
$V_{RRM}$	75	V
$I_{FSM}$	2	A
$V_F$ at $I_F=100mA$	1.0	V
$T_{JMAX}$	150	°C
Package	SOT-23	
Configuration	Single dice	

### MECHANICAL DATA

- Case: SOT-23
- Molding compound: UL flammability classification rating 94V-0
- Moisture sensitivity level: level 1, per J-STD-020
- Packing code with suffix "G" means green compound (halogen-free)
- 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	PART NUMBER	UNIT
Marking code on the device		A6	
Repetitive peak reverse voltage	$V_{RRM}$	75	V
Forward current	$I_{F(AV)}$	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	LIMIT	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	375	°C/W

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
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 current @ rated $V_R$ per diode <sup>(2)</sup>	$V_R = 75\text{V}, T_J = 25^\circ\text{C}$	$I_R$	--	1	$\mu\text{A}$
Junction capacitance	1 MHz, $V_R = 0\text{V}$	$C_J$	--	2	$\text{pF}$
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  $PW = 30\text{ ms}$

<b>ORDERING INFORMATION</b>				
PART NO.	PACKING CODE	PACKING CODE SUFFIX(*)	PACKAGE	PACKING
BAS16	RF	G	SOT-23	3K / 7" Reel
	R5			10K / 13" Reel

**Notes:**

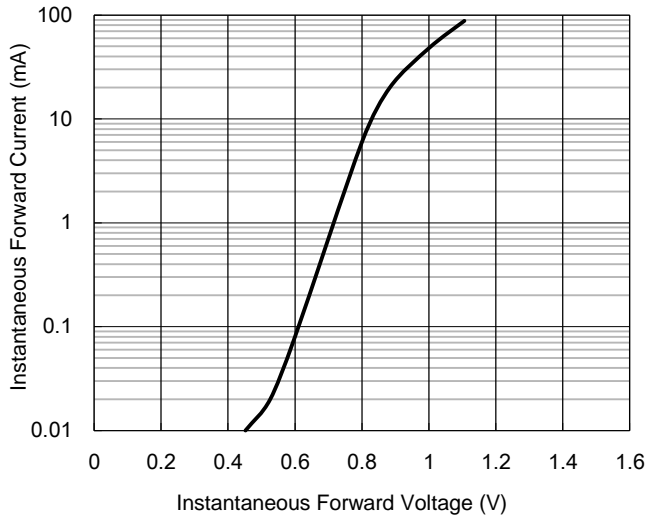
\*: optional available

<b>EXAMPLE</b>				
EXAMPLE P/N	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
BAS16 RFG	BAS16	RF	G	Green compound

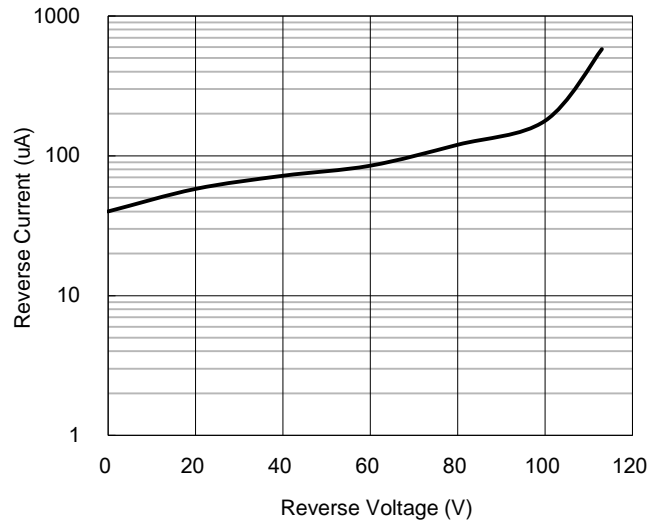
**CHARACTERISTICS CURVES**

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

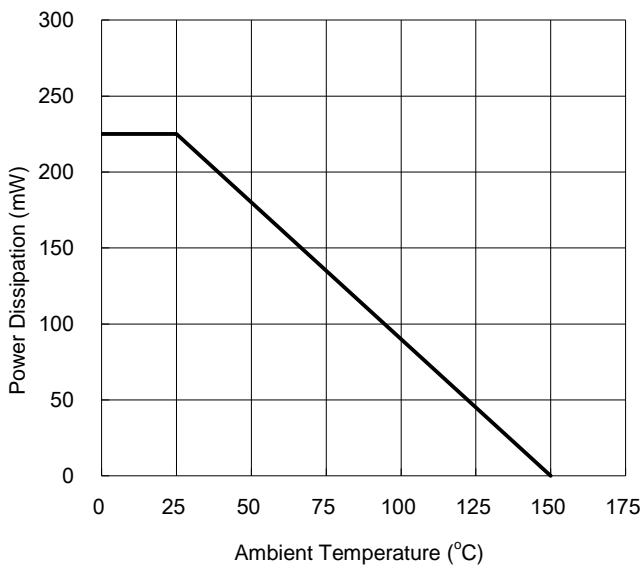
**Fig.1 Typical Forward Characteristics**



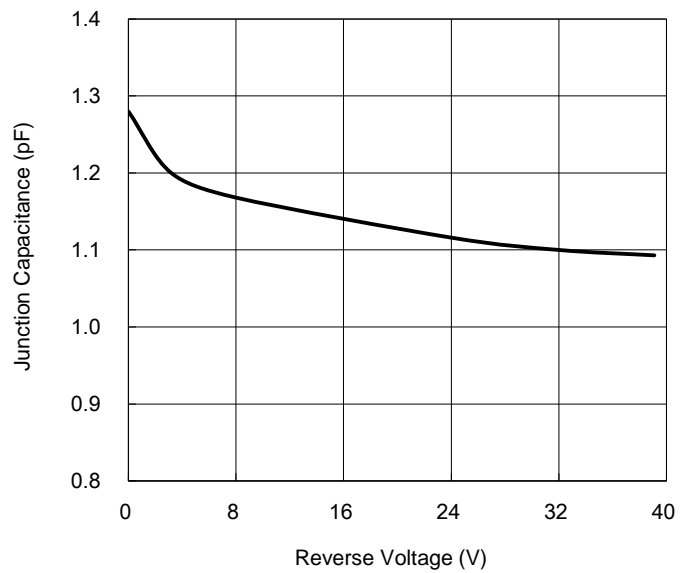
**Fig.2 Reverse Current VS. Reverse Voltage**



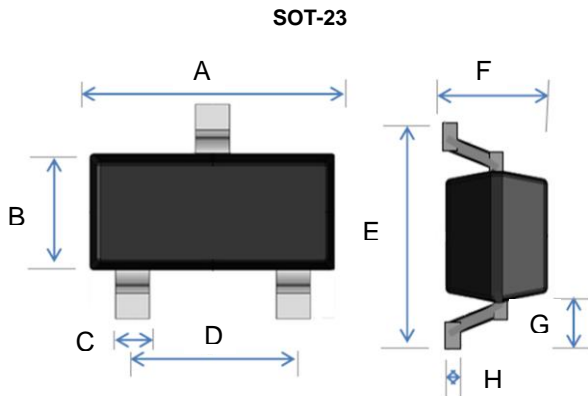
**Fig.3 Admissible Power Dissipation Curve**



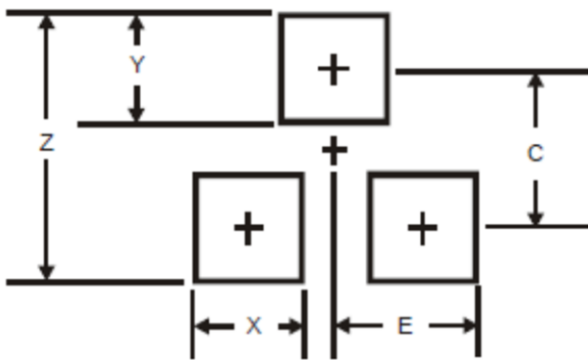
**Fig.4 Typical Junction Capacitance**



**PACKAGE OUTLINE DIMENSION**



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	2.70	3.10	0.106	0.122
B	1.10	1.50	0.043	0.059
C	0.30	0.51	0.012	0.020
D	1.78	2.04	0.070	0.080
E	2.10	2.64	0.083	0.104
F	0.89	1.30	0.035	0.051
G	0.55 REF		0.022 REF	
H	0.10 REF		0.004 REF	



DIM.	Unit(mm)		Unit(inch)	
	Typ.		Typ.	
Z	2.80		0.110	
X	0.70		0.028	
Y	0.90		0.035	
C	1.90		0.075	
E	1.00		0.039	

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