

## Small Signal Fast Switching Diode



### FEATURES

- Silicon epitaxial planar diode
- Ultra fast switching speed
- Surface mount package ideally suited for automatic insertion
- High conductance
- AEC-Q101 qualified available
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-HE3 - RoHS-compliant, AEC-Q101 qualified
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### MECHANICAL DATA

**Case:** SOT-23

**Weight:** approx. 8.8 mg

**Packaging codes/options:**

18/10K per 13" reel (8 mm tape), 10K/box

08/3K per 7" reel (8 mm tape), 15K/box

### PARTS TABLE

PART	ORDERING CODE	INTERNAL CONSTRUCTION	TYPE MARKING	REMARKS
BAS16	BAS16-E3-08 or BAS16-E3-18	Single diode	A6	Tape and reel
	BAS16-HE3-08 or BAS16-HE3-18			

### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Non repetitive peak reverse voltage		$V_{RM}$	100	V
Repetitive peak reverse voltage = working peak reverse voltage = DC blocking voltage		$V_{RRM} = V_{RWM} = V_R$	75	V
Peak forward surge current	$t_p = 1\text{ s}$	$I_{FSM}$	1	A
	$t_p = 1\text{ }\mu\text{s}$	$I_{FSM}$	2	A
Average forward current	Half wave rectification with resistive load and $f \geq 50\text{ MHz}$ , on ceramic substrate 8 mm x 10 mm x 0.7 mm	$I_{F(AV)}$	150	mA
Forward current	On ceramic substrate 8 mm x 10 mm x 0.7 mm	$I_F$	300	mA
Power dissipation	On ceramic substrate 8 mm x 10 mm x 0.7 mm	$P_{tot}$	350	mW

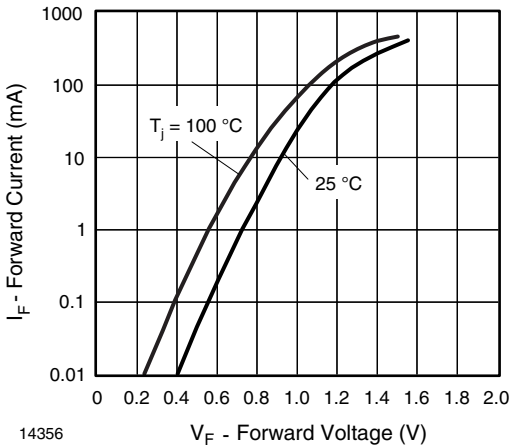
### THERMAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Junction ambient	On ceramic substrate 8 mm x 10 mm x 0.7 mm	$R_{thJA}$	357	K/W
Junction and storage temperature range		$T_j = T_{stg}$	-55 to +150	$^{\circ}\text{C}$
Operating temperature range		$T_{op}$	-55 to +150	$^{\circ}\text{C}$



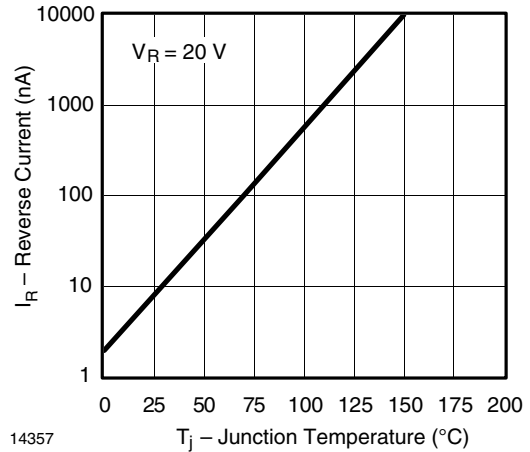
<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 1\text{ mA}$	$V_F$			0.715	V
	$I_F = 10\text{ mA}$	$V_F$			855	mV
	$I_F = 50\text{ mA}$	$V_F$			1	V
	$I_F = 150\text{ mA}$	$V_F$			1.25	V
Reverse current	$V_R = 75\text{ V}$	$I_R$			1	$\mu\text{A}$
	$V_R = 75\text{ V}, T_j = 150\text{ }^{\circ}\text{C}$	$I_R$			50	$\mu\text{A}$
	$V_R = 25\text{ V}, T_j = 150\text{ }^{\circ}\text{C}$	$I_R$			30	$\mu\text{A}$
Diode capacitance	$V_R = 0, f = 1\text{ MHz}$	$C_D$			4	pF
Reverse recovery time	$I_F = 10\text{ mA}$ to $i_R = 1\text{ mA}$ , $V_R = 6\text{ V}, R_L = 100\text{ }\Omega$	$t_{rr}$			6	ns

**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)



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Fig. 1 - Forward Current vs. Forward Voltage

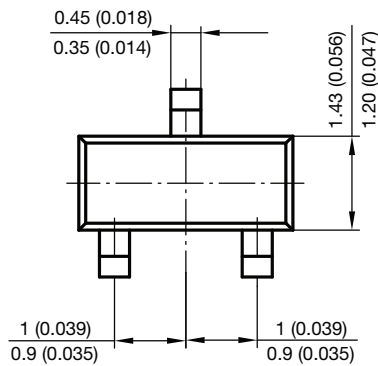


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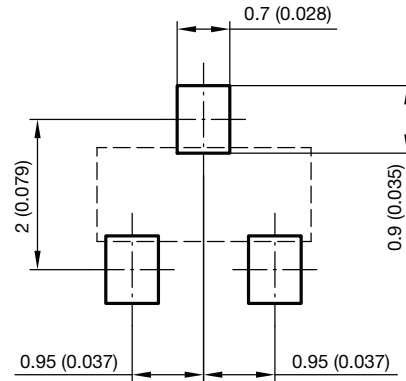
Fig. 2 - Reverse Current vs. Junction Temperature



**PACKAGE DIMENSIONS** in millimeters (inches): **SOT-23**



Foot print recommendation:



Document no.: 6.541-5014.01-4  
Rev. 8 - Date: 23.Sept.2009  
17418



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