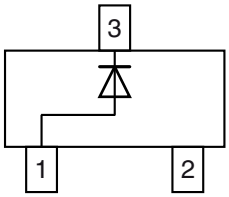
Small Signal Fast Switching Diode



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

Pb-free
e3
RoHS COMPLIANT

DESIGN SUPPORT TOOLS click logo to get started

3D Models Available

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	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS
BAS16	BAS16-E3-08 or BAS16-E3-18	Single	A6	Tape and reel
	BAS16-HE3-08 or BAS16-HE3-18			

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °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 s	I_{FSM}	1	A
	t_p = 1 µs	I_{FSM}	2	A
Average forward current	Half wave rectification with resistive load and f ≥ 50 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 °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	°C
Operating temperature range		T_{op}	-55 to +150	°C

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ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Forward voltage	I_F = 1 mA	V_F			0.715	V
	I_F = 10 mA	V_F			855	mV
	I_F = 50 mA	V_F			1	V
	I_F = 150 mA	V_F			1.25	V
Reverse current	V_R = 75 V	I_R			1000	nA
	V_R = 75 V, T_j = 150 °C	I_R			50	µA
	V_R = 25 V, T_j = 150 °C	I_R			30	µA
Diode capacitance	V_R = 0, f = 1 MHz	C_D			4	pF
Reverse recovery time	I_F = 10 mA to i_R = 1 mA, V_R = 6 V, R_L = 100 Ω	t_{rr}			6	ns

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

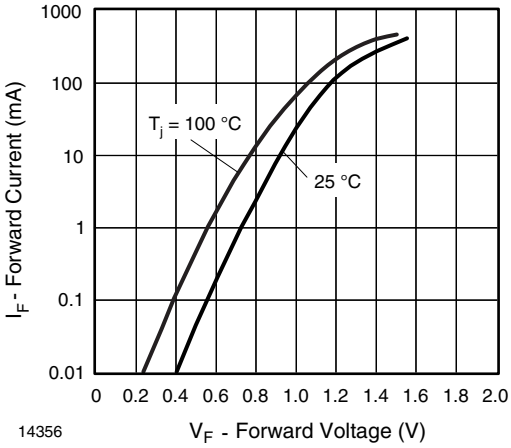

Fig. 1 - Forward Current vs. Forward Voltage

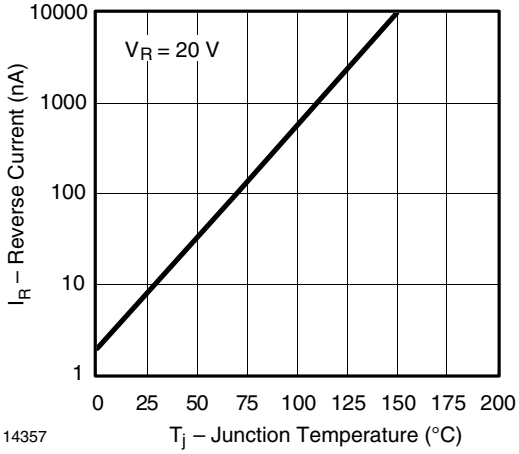

Fig. 2 - Reverse Current vs. Junction Temperature

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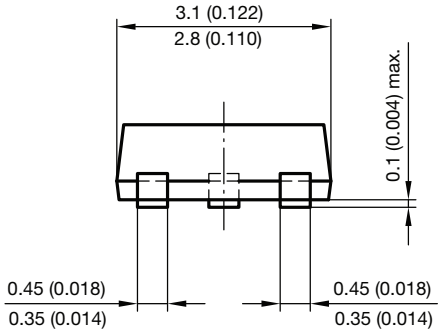
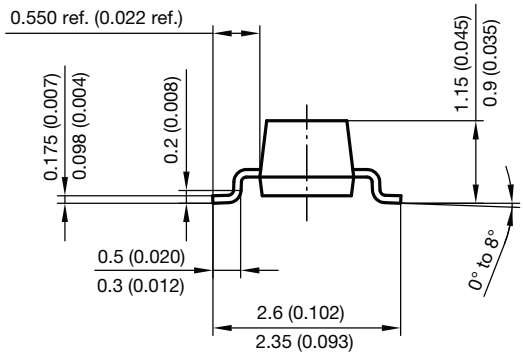
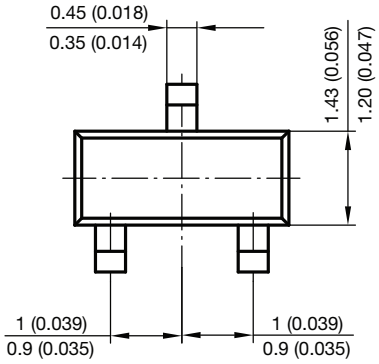
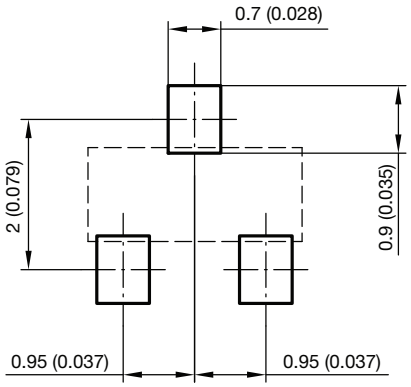
PACKAGE DIMENSIONS in millimeters (inches): **SOT-23**







Foot print recommendation:



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