



# Small Signal Fast Switching Diode



### FEATURES

- Silicon epitaxial planar diode
- Fast switching diode
- 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

### DESIGN SUPPORT TOOLS

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### MECHANICAL DATA

Case: SOD-123

Weight: approx. 10.3 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
BAS16D	BAS16D-E3-08 or BAS16D-E3-18 BAS16D-HE3-08 or BAS16D-HE3-18	Single	A6	Tape and reel

ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V <sub>R</sub>	75	V
Repetitive peak reverse voltage		V <sub>RRM</sub>	100	V
Forward current (continuous)		I <sub>F</sub>	250	mA
Non-repetitive peak forward current	t = 1 μs	I <sub>FSM</sub>	2	A
	t = 1 ms	I <sub>FSM</sub>	1	A
	t = 1 s	I <sub>FSM</sub>	0.5	A
Power dissipation <sup>(1)</sup>		P <sub>tot</sub>	350	mW

THERMAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air <sup>(1)</sup>		R <sub>thJA</sub>	375	K/W
Maximum junction temperature		T <sub>j</sub>	150	°C
Storage temperature range <sup>(1)</sup>		T <sub>stg</sub>	-65 to +150	°C
Operating temperature range		T <sub>op</sub>	-55 to +150	°C

### Note

<sup>(1)</sup> Valid provided electrodes are kept at ambient temperature

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 150\text{ mA}$	$V_F$			1.25	V
	$I_F = 50\text{ mA}$	$V_F$			1	V
	$I_F = 10\text{ mA}$	$V_F$			0.855	V
	$I_F = 1\text{ mA}$	$V_F$			0.715	V
Leakage current	$V_R = 75\text{ V}$	$I_R$			1000	nA
	$V_R = 25\text{ V}, T_j = 150\text{ }^{\circ}\text{C}$	$I_R$			30	$\mu\text{A}$
	$V_R = 75\text{ V}, T_j = 150\text{ }^{\circ}\text{C}$	$I_R$			50	$\mu\text{A}$
Diode capacitance	$V_R = 0; f = 1\text{ MHz}$	$C_D$			2	pF
Reverse recovery time	$I_F = 10\text{ mA}, I_R = 10\text{ mA},$ $i_R = 1\text{ mA}, R_L = 100\text{ }\Omega$	$t_{rr}$			6	ns

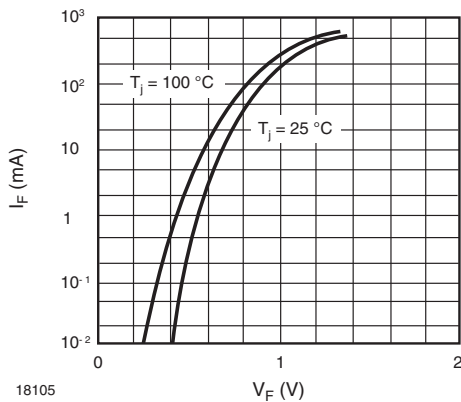
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Forward Characteristics

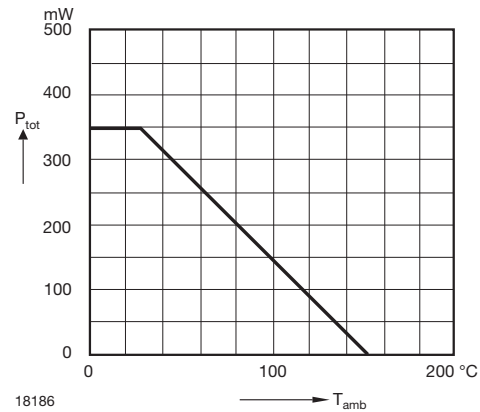


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

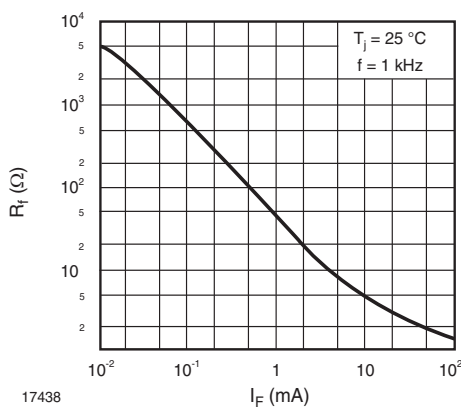


Fig. 2 - Dynamic Forward Resistance vs. Forward Current

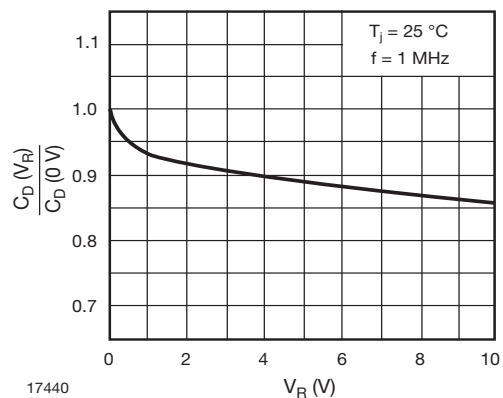


Fig. 4 - Relative Capacitance vs. Reverse Voltage

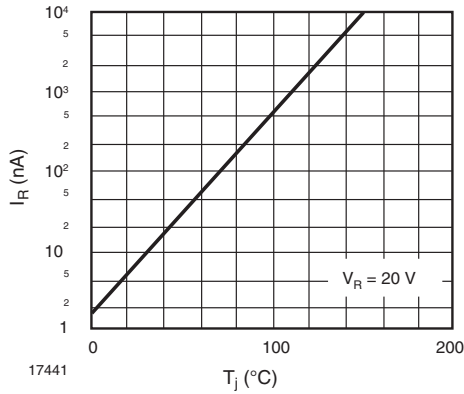


Fig. 5 - Leakage Current vs. Junction Temperature

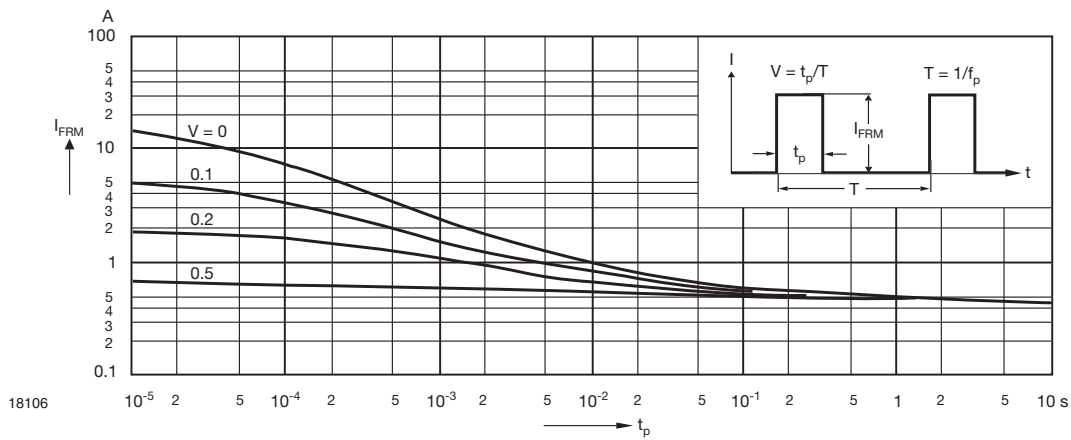
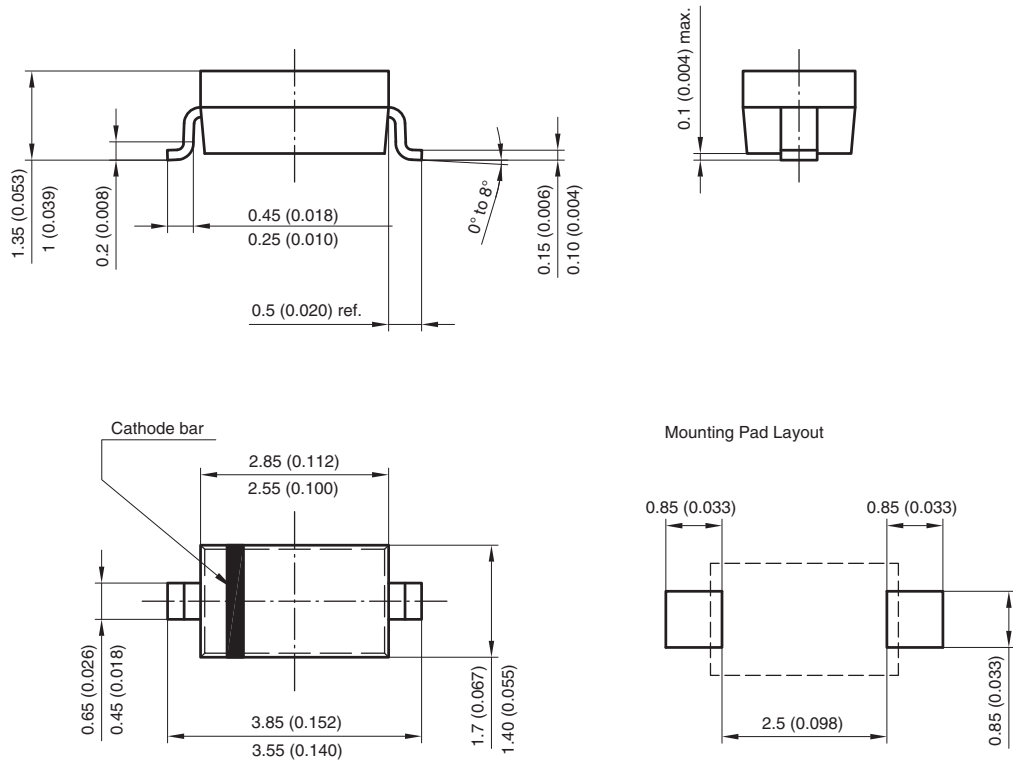


Fig. 6 - Admissible Repetitive Peak Forward Current vs. Pulse Duration



PACKAGE DIMENSIONS in millimeters (inches): SOD-123



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