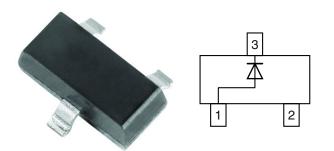
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Small Signal Fast Switching Diode



LINKS TO ADDITIONAL RESOURCES



MECHANICAL DATA

Case: SOT-23 Weight: approx. 9.2 mg Packaging codes / options: 18/10K per 13" reel (8 mm tape), 10K/box 08/3K per 7" reel (8 mm tape), 15K/box

FEATURES

- Silicon epitaxial planar diode
- Ultra fast switching speed (≤ 4 ns)
- 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_A RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

PARTS TABLE							
PART	ORDERING CODE	AEC-Q101 QUALIFIED	TYPE MARKING	CIRCUIT CONFIGURATION	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY	
BAS16	BAS16-E3-08	no	AK	Single	3 000	15 000	
	BAS16-HE3_A-08	yes			(8 mm tape on 7" reel)		
	BAS16-E3-18	no			10 000	10 000	
	BAS16-HE3_A-18	yes			(8 mm tape on 13" reel)		

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	
Deals forward as many as many t(1)	t _p = 1 s	I _{FSM}	1	А	
Peak forward surge current ⁽¹⁾	t _p = 1 μs	I _{FSM}	2	А	
Average forward current ⁽¹⁾	Half wave rectification with resistive load and $f \ge 50 \mbox{ Hz}$	I _{F(AV)}	250	mA	
Forward current ⁽¹⁾		I _F	350	mA	
Power dissipation	On FR-4 board with recommended soldering footprint	- P _{tot}	270	mW	
Fower dissipation	Infinite heatsink	r tot	390	mW	

THERMAL CHARACTERISTICS ($T_{amb} = 25 \text{ °C}$, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Thermal resistance junction to ambient air	according to JEDEC [®] 51-3 on FR-4 board with recommended soldering footprint	R _{thJA}	460	K/W	
Thermal resistance junction to lead	Infinite heat sink	R _{thJL}	320	K/W	
Junction temperature		Тj	150	°C	
Storage temperature range		T _{stg}	-65 to +150	°C	
Operating temperature range		T _{op}	-55 to +150	°C	

Note

(1) Infinite heatsink

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ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	MAX.	UNIT	
Forward voltage	$I_F = 1 \text{ mA}$	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	100	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	CD	1.5	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)

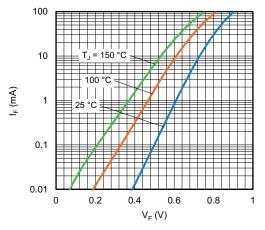


Fig. 1 - Typical Forward Current vs. Forward Voltage

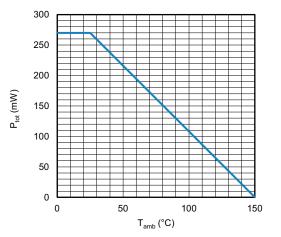
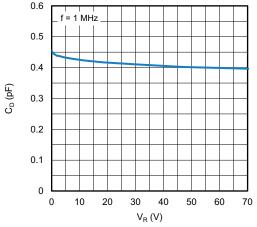
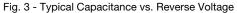


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature





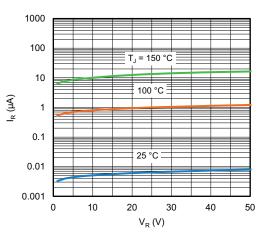


Fig. 4 - Typical Reverse Leakage Current vs. Reverse Voltage

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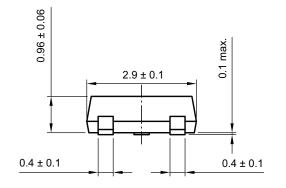
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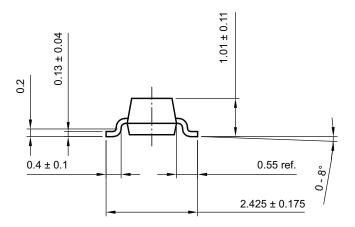
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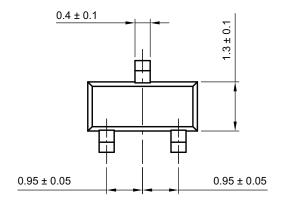
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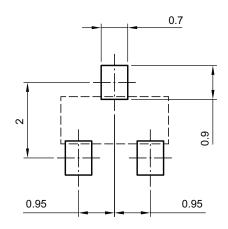
PACKAGE DIMENSIONS in millimeters: SOT-23







footprint recommendation:

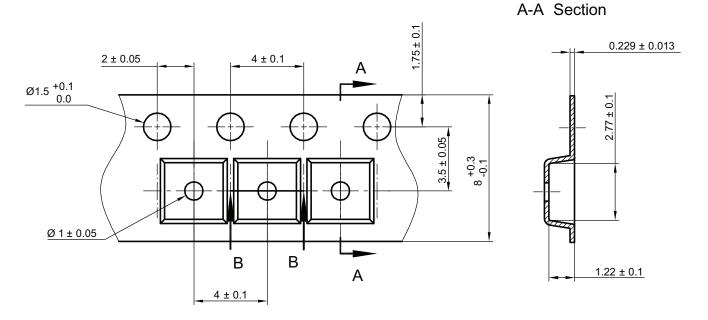


Created - Date: 18-Oct-2021 Rev. 01 - Date: 18-Jan-2022 S8-V-3929.01-009 (4)

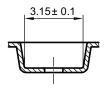


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CARRIER TAPE SOT-23

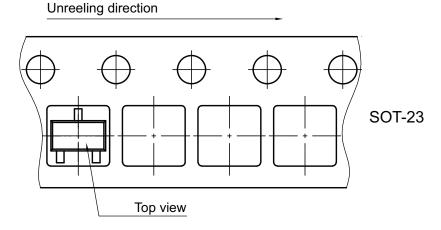


B-B Section



Created Date: 04-Feb-2010 Rev. Date: 07-Feb-2022 S8-V-3929.01-006 (4)

ORIENTATION IN CARRIER TAPE SOT-23



Created Date: 04-Feb-2010 Rev. Date: 07-Nov-2022 S8-V-3929.01-005 (4)

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