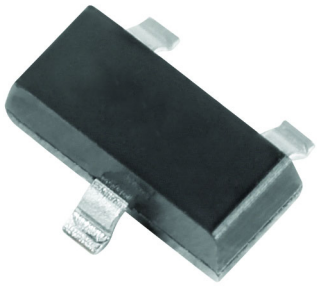
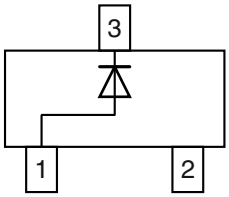
Small Signal Switching Diodes, High Voltage





FEATURES

- Silicon epitaxial planar diode
- Fast switching diode in case SOT-23, especially suited for automatic insertion
- 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 www.vishay.com/doc?99912

AUTOMOTIVE GRADE Available

Pb-free

e3

RoHS COMPLIANT

LINKS TO ADDITIONAL RESOURCES

3D Models | Models | Marking | Parametric Search | Order Samples

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

PARTS TABLE

PART	TYPE DIFFERENTIATION	ORDERING CODE	AEC-Q101 QUALIFIED	TYPE MARKING	CIRCUIT CONFIGURATION	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY
BAS19	V_R = 100 V	BAS19-E3-08	no	A8G	Single	3 000 (8 mm tape on 7" reel)	15 000
		BAS19-HE3_A-08	yes				
		BAS19-E3-18	no			10 000 (8 mm tape on 13" reel)	10 000
		BAS19-HE3_A-18	yes				
BAS20	V_R = 150 V	BAS20-E3-08	no	A9G	Single	3 000 (8 mm tape on 7" reel)	15 000
		BAS20-HE3_A-08	yes				
		BAS20-E3-18	no			10 000 (8 mm tape on 13" reel)	10 000
		BAS20-HE3_A-18	yes				
BAS21	V_R = 200 V	BAS21-E3-08	no	AAG	Single	3 000 (8 mm tape on 7" reel)	15 000
		BAS21-HE3_A-08	yes				
		BAS21-E3-18	no			10 000 (8 mm tape on 13" reel)	10 000
		BAS21-HE3_A-18	yes				

PACKAGE

PACKAGE NAME	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
SOT-23	9.2 mg	UL 94 V-0	MSL 1 (according J-STD-020)	Peak temperature max. 260 °C

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ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)					
PARAMETER	**TEST CONDITION**	**PART**	**SYMBOL**	**VALUE**	**UNIT**
Continuous reverse voltage		BAS19	V_R	100	V
		BAS20	V_R	150	V
		BAS21	V_R	200	V
Repetitive peak reverse voltage		BAS19	V_{RRM}	120	V
		BAS20	V_{RRM}	200	V
		BAS21	V_{RRM}	250	V
Non repetitive peak forward current (1)	t = 1 µs		I_{FSM}	2.5	A
Non repetitive peak forward surge current(1)	t = 1 s		I_{FSM}	0.5	A
Maximum average forward rectified current (1)	f ≥ 50 Hz		$I_{F(AV)}$	250	mA
DC forward current (1)			I_F	350	mA
Repetitive peak forward current			I_{FRM}	625	mA
Power dissipation	On FR-4 board with recommended soldering footprint		P_{tot}	300	mW
	Infinite heatsink			500	mW

Note

(1) Infinite heatsink

THERMAL CHARACTERISTICS (T_{amb} = 25 °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}	420	K/W
Thermal resistance junction to lead	Infinite heatsink	R_{thJL}	250	K/W
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	-65 to +150	°C
Operating temperature range		T_{op}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)							
PARAMETER	**TEST CONDITION**	**PART**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Forward voltage	I_F = 100 mA		V_F			1.0	V
	I_F = 200 mA		V_F			1.25	V
Leakage current	V_R = 100 V	BAS19	I_R			100	nA
	V_R = 150 V	BAS20	I_R			100	nA
	V_R = 200 V	BAS21	I_R			100	nA
	$V_R = V_{Rmax.}$, T_j = 150 °C		I_R			100	µA
Dynamic forward resistance	I_F = 10 mA		r_f		5		Ω
Diode capacitance	V_R = 0, f = 1 MHz		C_D			5	pF
Reverse recovery time	$I_F = I_R$ = 30 mA, R_L = 100 Ω, i_R = 3 mA		t_{rr}			50	ns

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

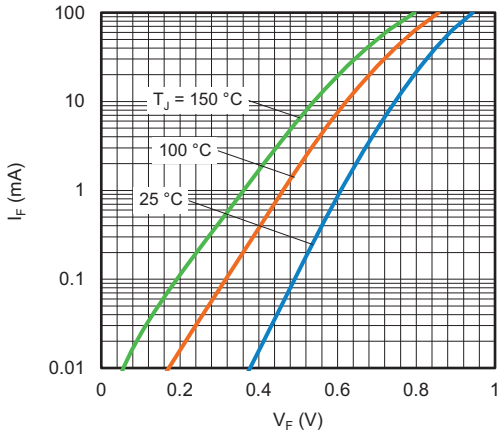


Fig. 1 - Typical Forward Current vs. Forward Voltage

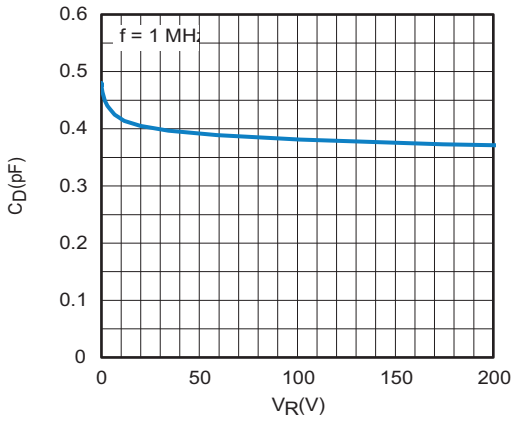


Fig. 3 - Typical Capacitance vs. Reverse Voltage

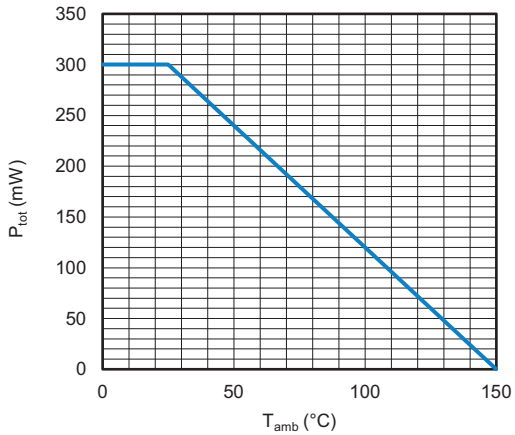


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

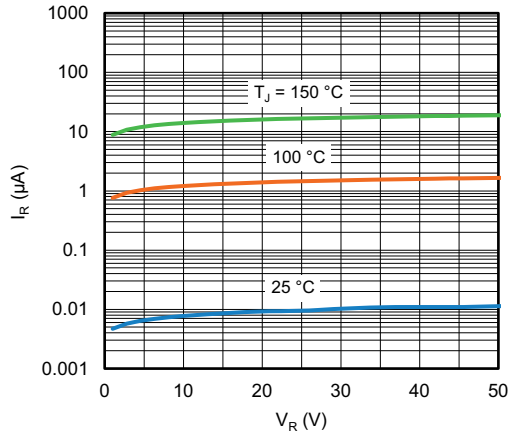
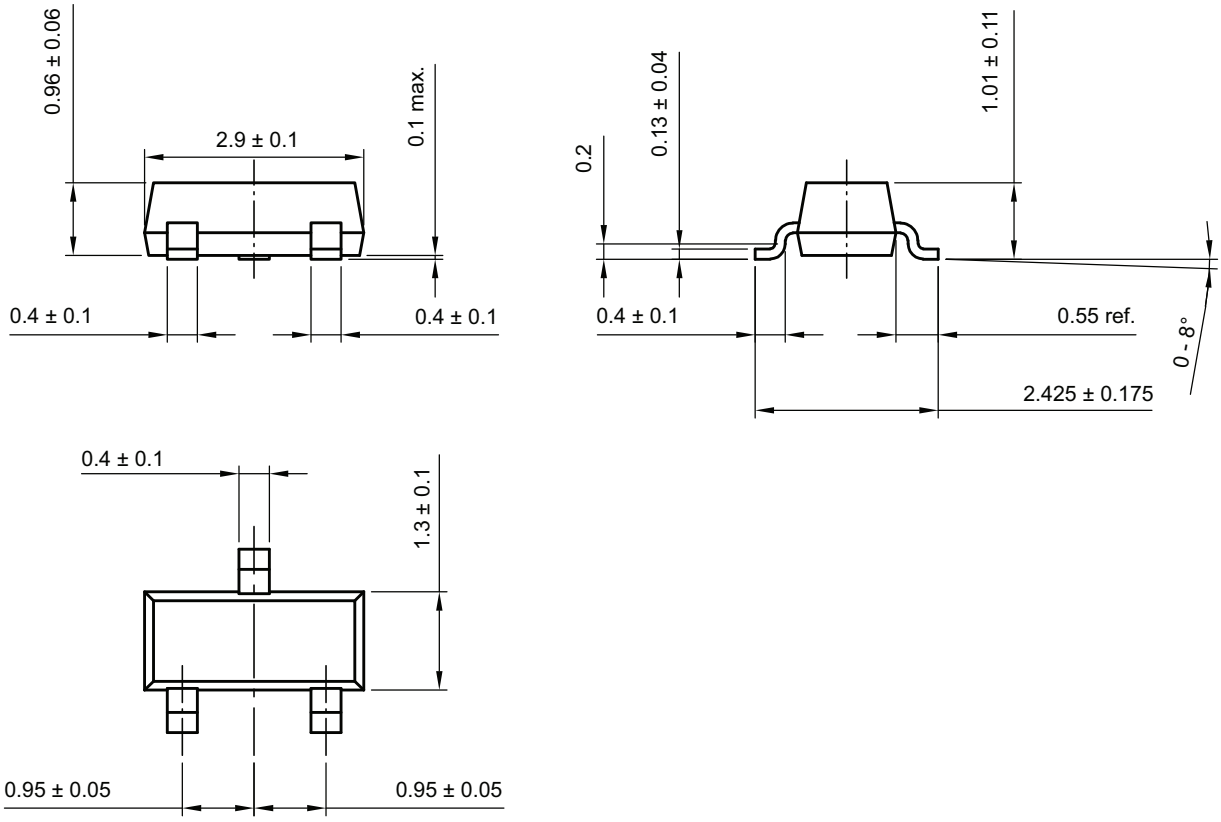


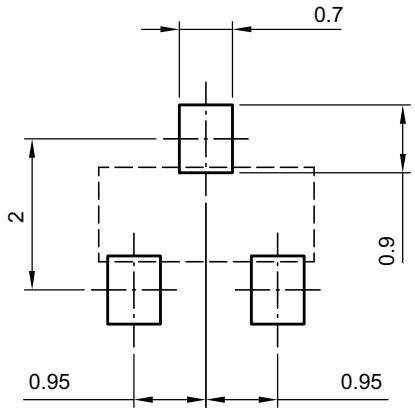
Fig. 4 - Typical Reverse Leakage Current vs. Reverse Voltage

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PACKAGE DIMENSIONS in millimeters: **SOT-23**



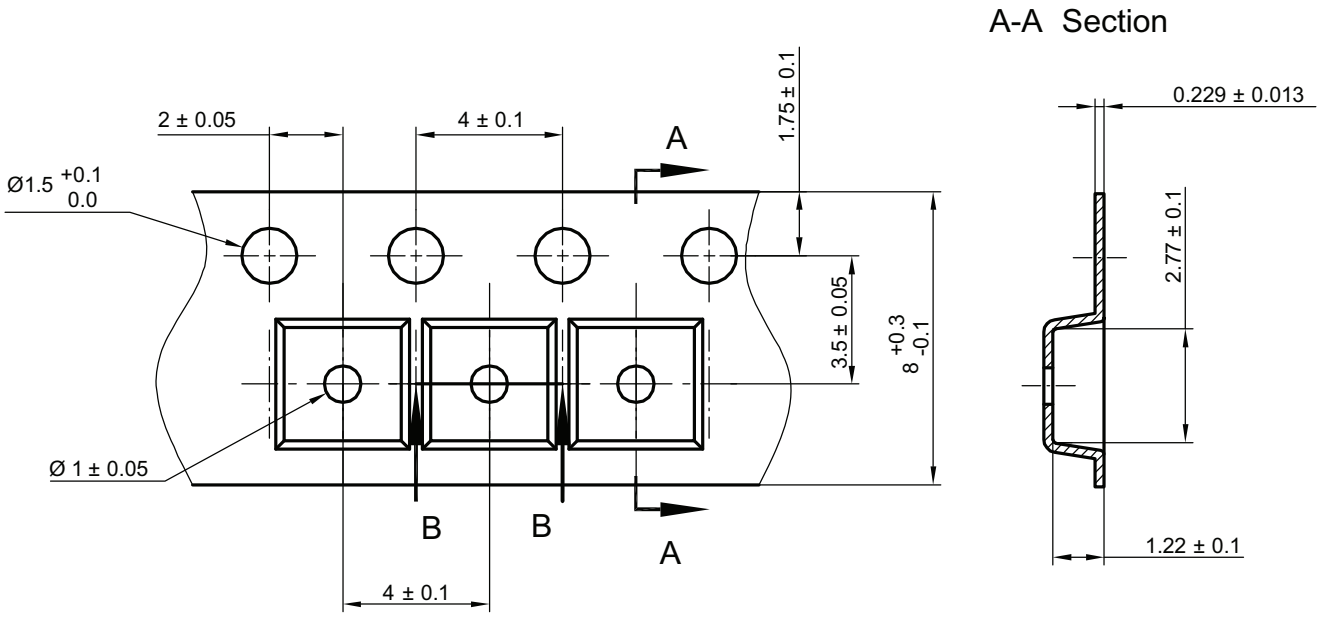
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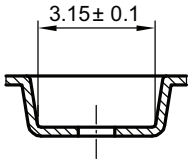
Created - Date: 18-Oct-2021
Rev. 01 - Date: 18-Jan-2022
S8-V-3929.01-009 (4)

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CARRIER TAPE SOT-23

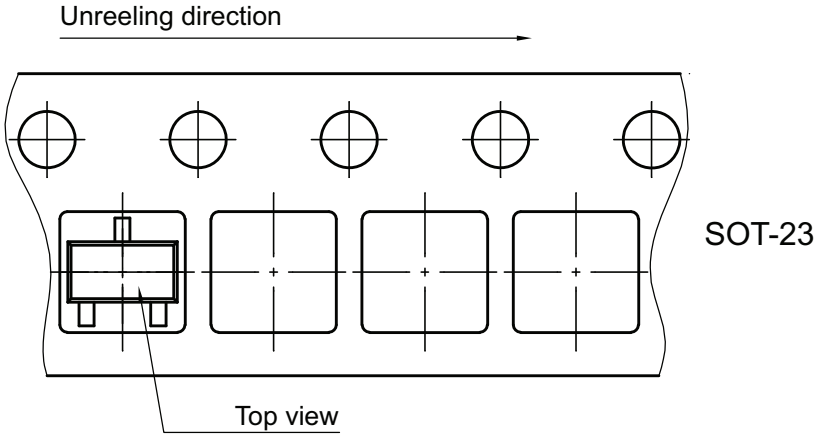


B-B Section



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Rev. Date: 07-Feb-2022
S8-V-3929.01-005 (4)

ORIENTATION IN CARRIER TAPE SOT-23



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