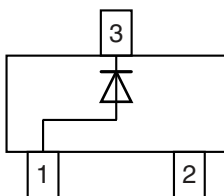
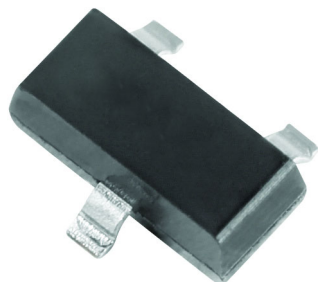


## Small Signal Switching Diode



### FEATURES

- Silicon epitaxial planar diodes
- Fast switching diode in case SOT-23, especially suited for automatic insertion
- AEC-Q101 qualified available
- Molding compound meets UL 94 V-0 flammability rating
- Moisture sensitivity level (MSL) 1
- 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](http://www.vishay.com/doc?99912)

AUTOMOTIVE  
GRADE  
Available



**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	ORDERING CODE	AEC-Q101 QUALIFIED	TYPE MARKING	CIRCUIT CONFIGURATION	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY
IMBD4148-	IMBD4148-E3-08	no	AH	Single	3 000 (8 mm tape on 7" reel)	15 000
	IMBD4148-HE3_A-08	yes			10 000 (8 mm tape on 13" reel)	10 000
	IMBD4148-E3-18	no				
	IMBD4148-HE3_A-18	yes				

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		$V_R$	75	V
Peak reverse voltage		$V_{RM}$	100	V
Continuous forward current <sup>(1)</sup>		$I_F$	350	mA
Rectified current (average) half wave rectification with resist. <sup>(1)</sup>	$f \geq 50\text{ Hz}$	$I_{F(AV)}$	250	mA
Surge forward current <sup>(1)</sup>	$t < 1\text{ s}, T_j = 25\text{ }^{\circ}\text{C}$	$I_{FSM}$	500	mA
Power dissipation	on FR-4 board with recommended soldering footprint	$P_{tot}$	270	mW
	Infinite heatsink		390	

**Note**

<sup>(1)</sup> Infinite heatsink

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air	according to JEDEC <sup>®</sup> 51-3 on FR-4 board with recommended soldering footprint	$R_{thJA}$	460	K/W
Thermal resistance junction to lead	Infinite heatsink	$R_{thJL}$	320	K/W
Junction temperature		$T_j$	150	$^{\circ}\text{C}$
Storage temperature range		$T_{stg}$	-65 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	MAX.	UNIT
Forward voltage	$I_F = 10\text{ mA}$	$V_F$	1.0	V
Leakage current	$V_R = 70\text{ V}$	$I_R$	100	nA
	$V_R = 70\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$	$I_R$	50	$\mu\text{A}$
	$V_R = 25\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$	$I_R$	30	$\mu\text{A}$
Diode capacitance	$V_F = V_R = 0$	$C_D$	1.5	pF
Reverse recovery time (see figures)	$I_F = 10\text{ mA}$ to $I_R = 1\text{ mA}$ , $V_R = 6\text{ V}, R_L = 100\text{ }\Omega$	$t_{rr}$	4	ns

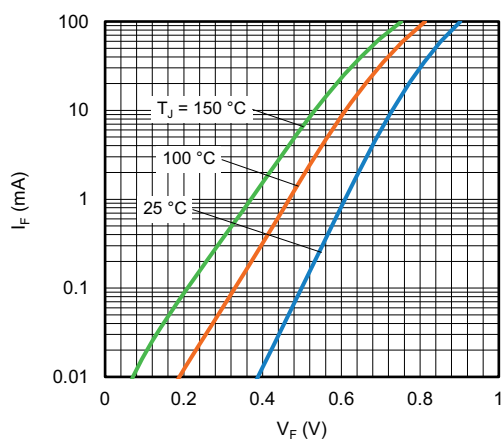
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Forward Current vs. Forward Voltage

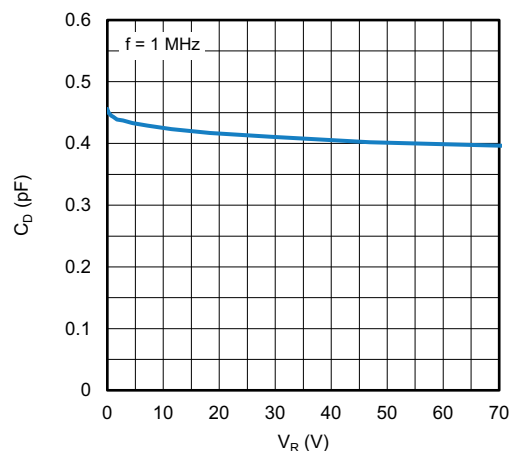


Fig. 3 - Typical Capacitance vs. Reverse Voltage

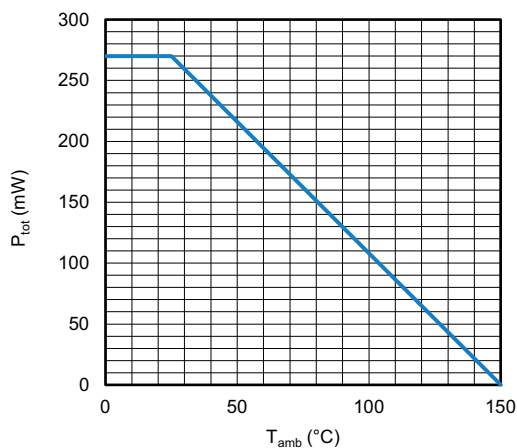


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

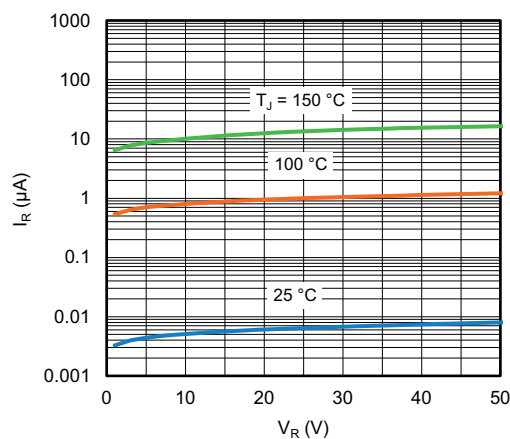
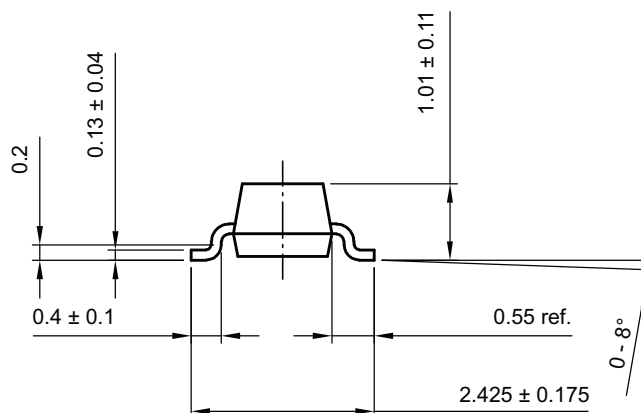


Fig. 4 - Typical Reverse Leakage Current vs. Reverse Voltage



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



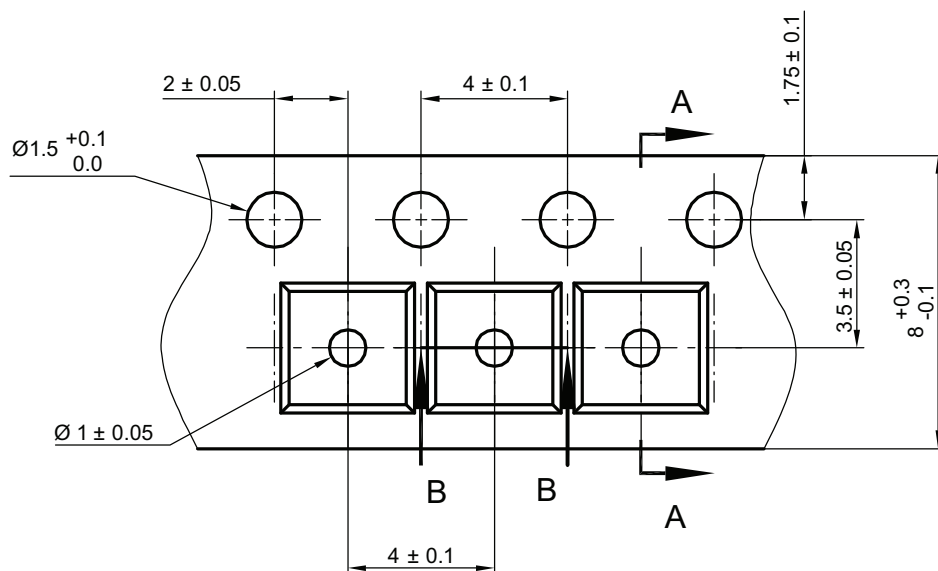
footprint recommendation:



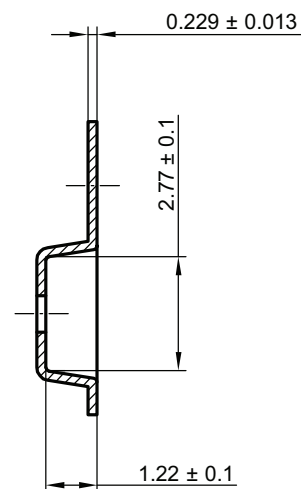
Created - Date: 18-Oct-2021  
Rev. 01 - Date: 18-Jan-2022  
S8-V-3929.01-009 (4)



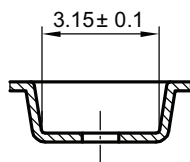
# CARRIER TAPE SOT-23



A-A Section



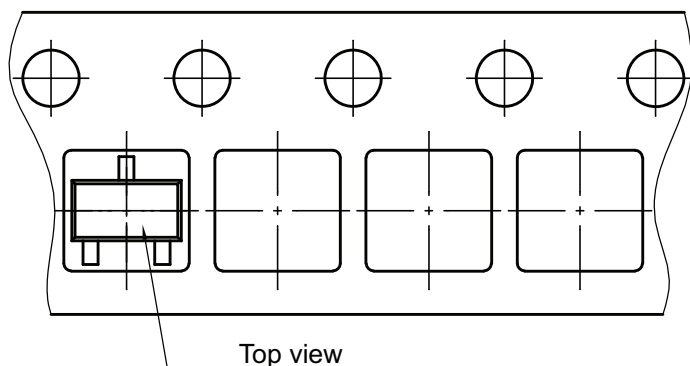
B-B Section



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

## ORIENTATION IN CARRIER TAPE SOT-23

Unreeling direction



SOT-23

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



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