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[Vishay Semiconductor/Diodes Division](#)  
[IMBD4148-E3-08](#)

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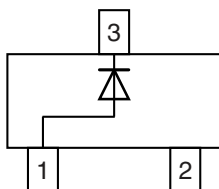
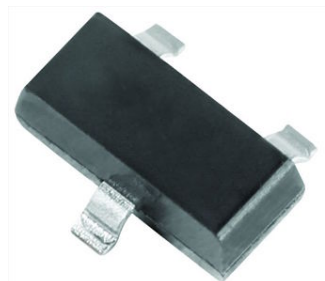


www.vishay.com

**IMBD4148**

Vishay Semiconductors

## Small Signal Switching Diode



### FEATURES

- Silicon epitaxial planar diodes
- Fast switching diode in case SOT-23, especially suited for automatic insertion.
- AEC-Q101 qualified
- 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

### 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	INTERNAL CONSTRUCTION	TYPE MARKING	REMARKS
IMBD4148	IMBD4148-E3-08 or IMBD4148-E3-18	Single diode	A2	Tape and reel
	IMBD4148-HE3-08 or IMBD4148-HE3-18			

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		$V_R$	75	V
Peak reverse voltage		$V_{RM}$	100	V
Rectified current (average) half wave rectification with resist. <sup>(1)</sup>	$f \geq 50 \text{ Hz}$	$I_{F(AV)}$	150	mA
Surge forward current	$t < 1 \text{ s}, T_j = 25^{\circ}\text{C}$	$I_{FSM}$	500	mA
Power dissipation <sup>(1)</sup>	up to $T_{amb} = 25^{\circ}\text{C}$	$P_{tot}$	350	mW

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air <sup>(1)</sup>		$R_{thJA}$	450	$^{\circ}\text{C/W}$
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	$^{\circ}\text{C}$

#### Note

<sup>(1)</sup> Device on fiberglass substrate, see layout on next page.



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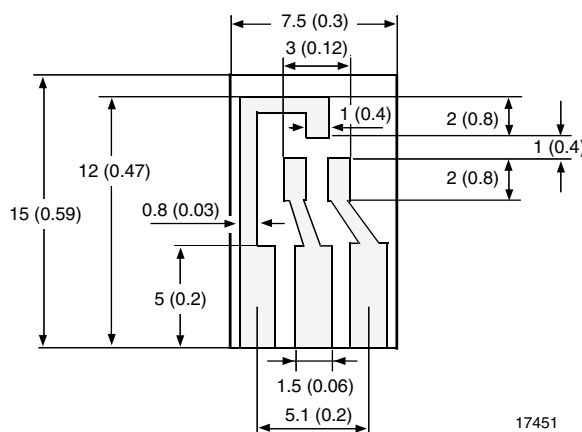
<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 10\text{ mA}$	$V_F$			1.0	V
Leakage current	$V_R = 70\text{ V}$	$I_R$			2500	nA
	$V_R = 70\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$	$I_R$			50	$\mu\text{A}$
	$V_R = 25\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$	$I_R$			30	$\mu\text{A}$
Diode capacitance	$V_F = V_R = 0$	$C_D$			4	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

### LAYOUT FOR $R_{thJA}$ TEST

Thickness:

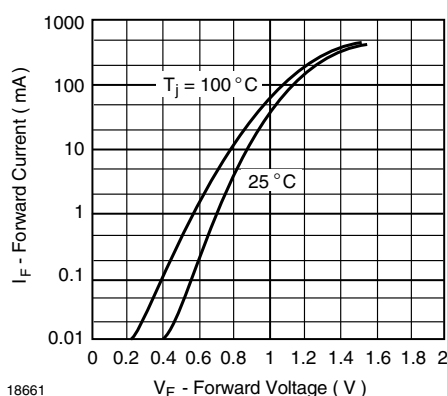
Fiberglass 1.5 mm (0.059 inches)

Copper leads 0.3 mm (0.012 inches)



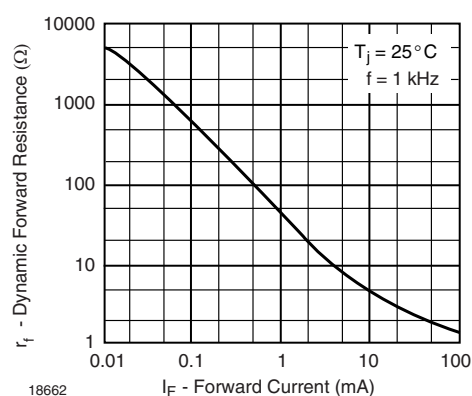
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### TYPICAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)



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Fig. 1 - Forward Current vs. Forward Voltage



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Fig. 2 - Dynamic Forward Resistance vs. Forward Current



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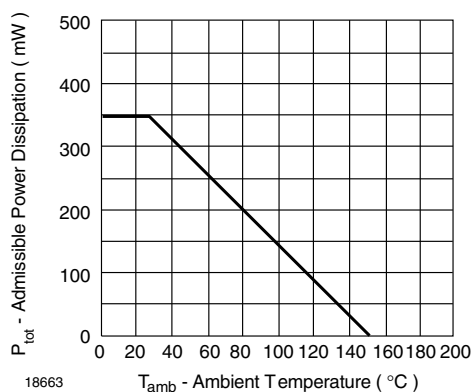


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

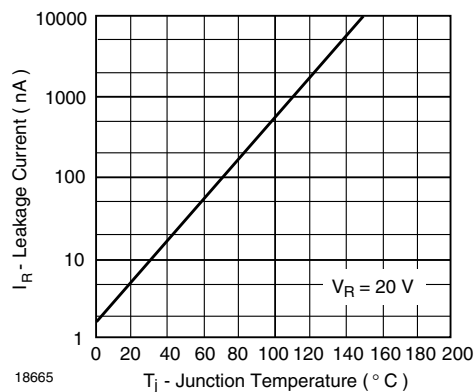


Fig. 5 - Leakage Current vs. Junction Temperature

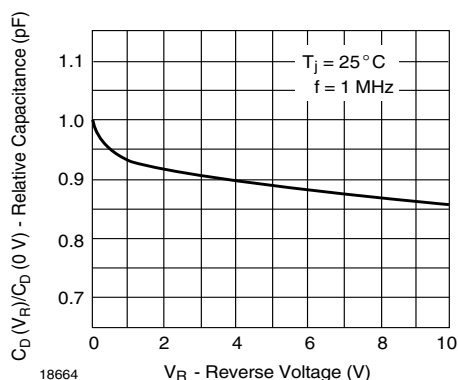


Fig. 4 - Relative Capacitance vs. Reverse Voltage

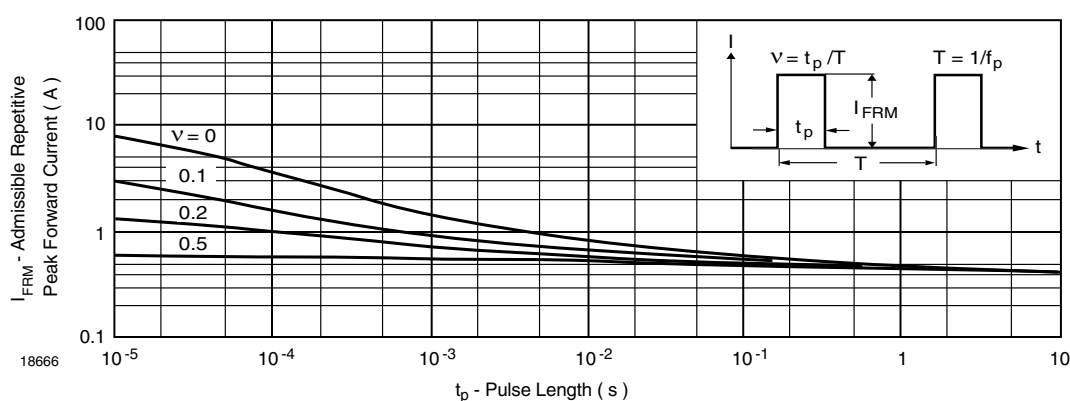


Fig. 6 - Admissible Repetitive Peak Forward Current vs. Pulse Duration

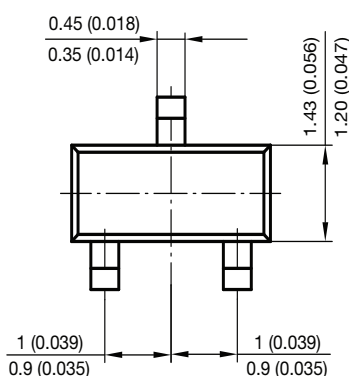
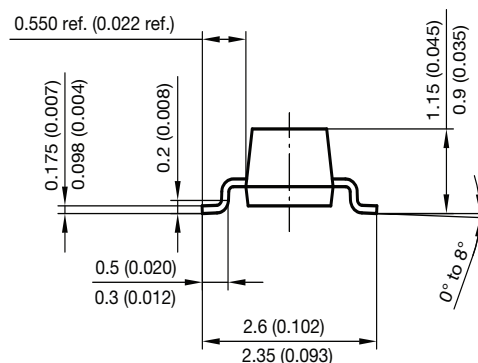
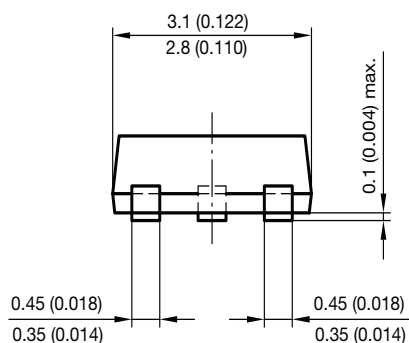


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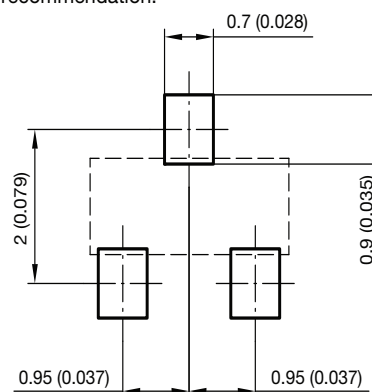
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**PACKAGE DIMENSIONS** in millimeters (inches): **SOT-23**



Foot print recommendation:



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17418



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