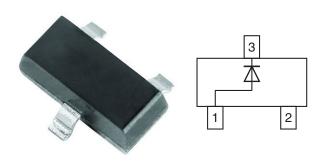


## Vishay Semiconductors

# **Small Signal Switching Diode**



#### **FEATURES**

- Silicon epitaxial planar diodes
- Fast switching diode in case SOT-23, especially suited for automatic insertion.
- AEC-Q101 qualified available (part number on request)
- Base P/N-G3 green, commercial grade
- Material categorization: for definitions of compliance please see www.vishav.com/doc?99912





HALOGEN FREE

RoHS

GREEN (5-2008)

### **DESIGN SUPPORT TOOLS** click logo to get started



### **MECHANICAL DATA**

Case: SOT-23

Weight: approx. 8.1 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	
IMBD4148-G	IMBD4148-G3-08 or IMBD4148-G3-18	Single	AH	Tape and reel	

ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Reverse voltage		$V_R$	75	V	
Peak reverse voltage		V <sub>RM</sub>	100	V	
Rectified current (average) half wave rectification with resist. (1)	f ≥ 50 Hz	I <sub>F(AV)</sub>	150	mA	
Surge forward current	t < 1 s, T <sub>j</sub> = 25 °C	I <sub>FSM</sub>	500	mA	
Power dissipation (1)	up to T <sub>amb</sub> = 25 °C	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 (1)		R <sub>thJA</sub>	450	K/W	
Junction temperature		Tj	150	°C	
Storage temperature range		T <sub>stg</sub>	-65 to +150	°C	
Operating temperature range		T <sub>op</sub>	-55 to +150	°C	

#### Note

(1) Device on fiberglass substrate, see layout on next page



### www.vishay.com

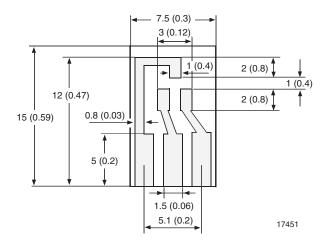
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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I <sub>F</sub> = 10 mA	V <sub>F</sub>			1.0	V
	V <sub>R</sub> = 70 V	I <sub>R</sub>			2500	nA
Leakage current	V <sub>R</sub> = 70 V, Tj = 150 °C	I <sub>R</sub>			50	μΑ
	V <sub>R</sub> = 25 V, Tj = 150 °C	I <sub>R</sub>			30	μΑ
Diode capacitance	$V_F = V_R = 0$	C <sub>D</sub>			4	pF
Reverse recovery time	$I_F$ = 10 mA, $i_R$ = 1 mA, $V_R$ = 6 V, $R_L$ = 100 $\Omega$	t <sub>rr</sub>			4	ns

## LAYOUT FOR RthJA TEST

Thickness:

Fiberglass 1.5 mm (0.059 inches) Copper leads 0.3 mm (0.012 inches)



## TYPICAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

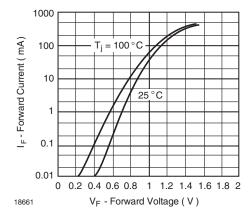


Fig. 1 - Forward Current vs. Forward Voltage

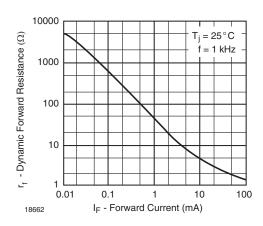


Fig. 2 - Dynamic Forward Resistance vs. Forward Current



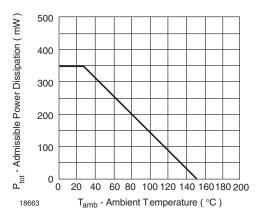


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

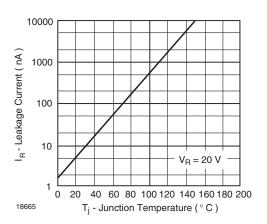


Fig. 5 - Leakage Current vs. Junction Temperature

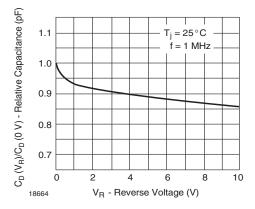


Fig. 4 - Relative Capacitance vs. Reverse Voltage

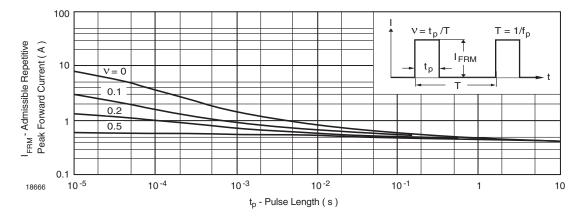
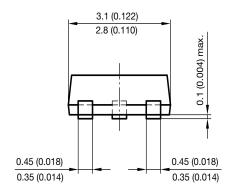
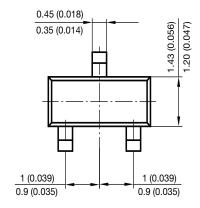


Fig. 6 - Admissible Repetitive Peak Forward Current vs. Pulse Duration

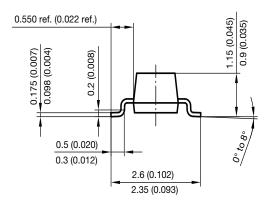
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### PACKAGE DIMENSIONS in millimeters (inches): SOT-23

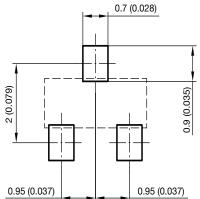




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#### Foot print recommendation:





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