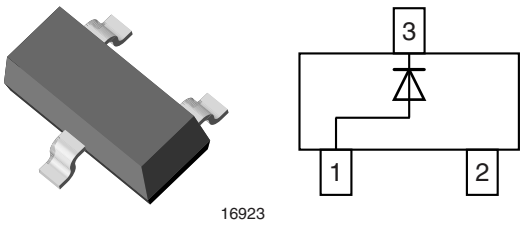
Small Signal Switching Diode

Features

- Silicon Epitaxial Planar Diodes
- Fast switching diode in case SOT-23, especially suited for automatic insertion.
- This diodes are also available in other case styles including: the DO-35 case with the type designation 1N4148, the MiniMELF case with the type designation LL4148, and the SOD-123 case with the type designation 1N4148W-V.
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC



Mechanical Data

Case: SOT-23

Weight: approx. 8.8 mg

Packaging Codes/Options:

GS18 / 10 k per 13" reel (8 mm tape), 10 k/box

GS08 / 3 k per 7" reel (8 mm tape), 15 k/box

Parts Table

Part	Ordering code	Marking	Remarks
IMBD4148-V	IMBD4148-V-GS18 or IMBD4148-V-GS08	A2	Tape and Reel

Absolute Maximum Ratings

T_{amb} = 25 °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.	≥ f ≥ 50 Hz	$I_{F(AV)}$	150[1)]	mA
Surge forward current	t < 1 s, T_j = 25 °C	I_{FSM}	500	mA
Power dissipation	up to T_{amb} = 25 °C	P_{tot}	350[1)]	mW

[1)] Device on fiberglass substrate, see layout (SOT-23).

Thermal Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Thermal resistance junction to ambient air		R_{thJA}	450[1)]	°C/W
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	- 65 to + 150	°C

[1)] Device on fiberglass substrate, see layout (SOT-23).

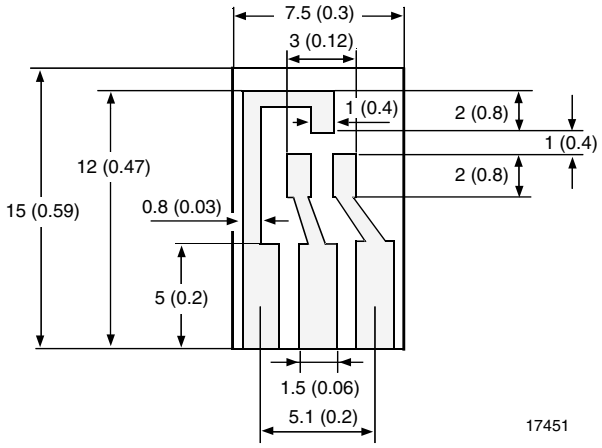
Electrical Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Min.	Typ.	Max.	Unit
Forward voltage	I_F = 10 mA	V_F			1.0	V
Leakage current	V_R = 70 V	I_R			2.5	µA
	V_R = 70 V, T_j = 150 °C	I_R			50	µA
	V_R = 25 V, T_j = 150 °C	I_R			30	µA
Diode capacitance	$V_F = V_R$ = 0	C_D			4	pF
Reverse recovery time (see figures)	I_F = 10 mA, I_R = 10 mA, V_R = 6 V, R_L = 100 Ω	t_{rr}			4	ns

Layout for R_{thJA} test

Thickness:
Fiberglass 1.5 mm (0.059 in.)
Copper leads 0.3 mm (0.012 in.)



For technical questions within your region, please contact one of the following:
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Typical Characteristics

T_{amb} = 25 °C unless otherwise specified

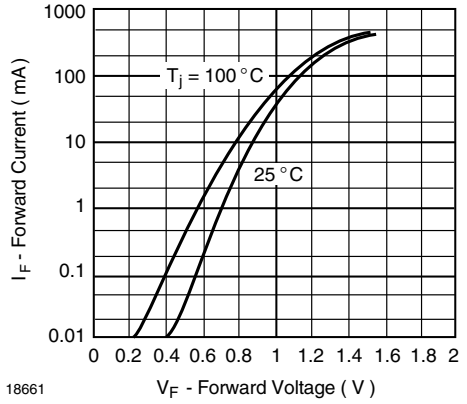


Figure 1. Forward Current vs. Forward Voltage

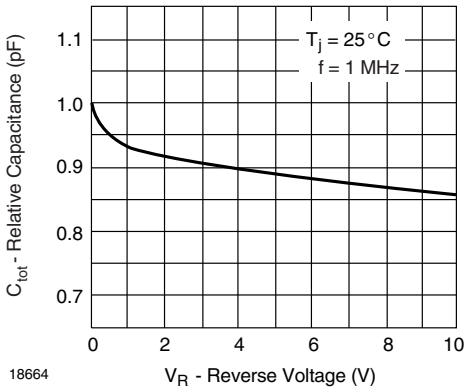


Figure 4. Relative Capacitance vs. Reverse Voltage

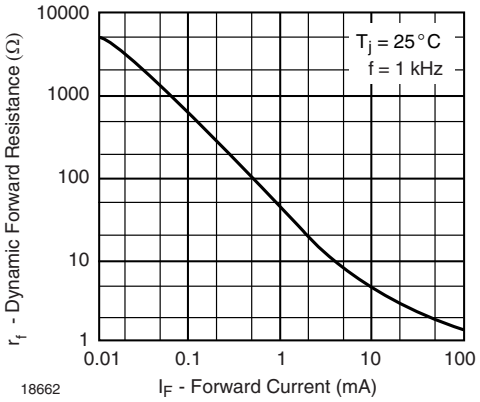


Figure 2. Dynamic Forward Resistance vs. Forward Current

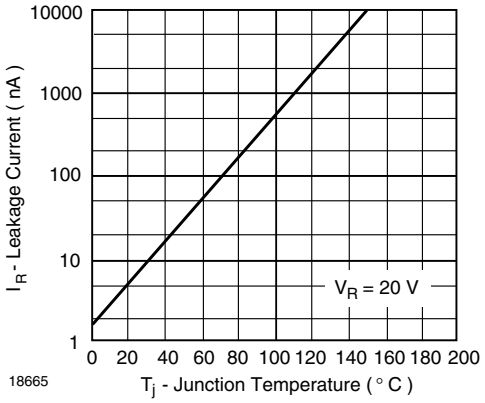


Figure 5. Leakage Current vs. Junction Temperature

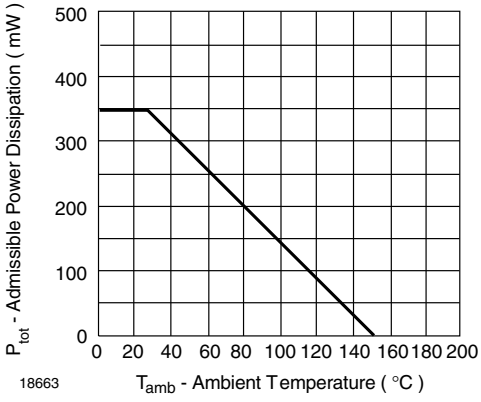


Figure 3. Admissible Power Dissipation vs. Ambient Temperature

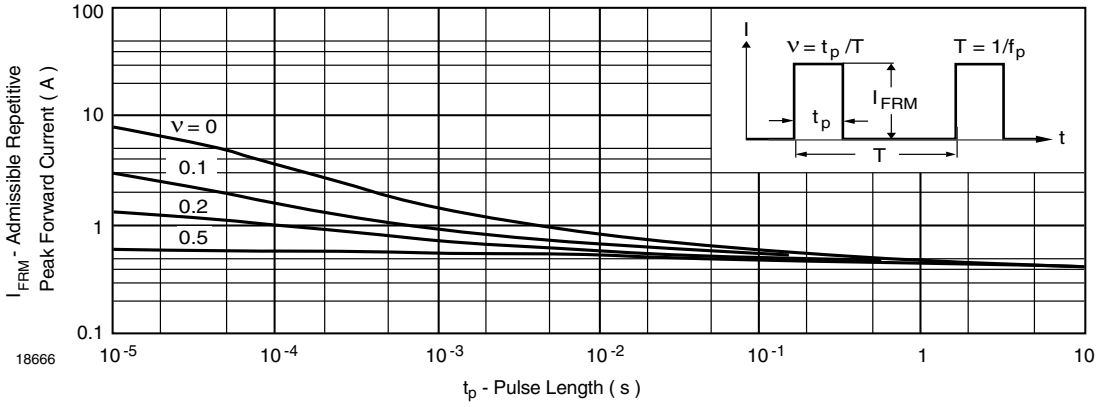
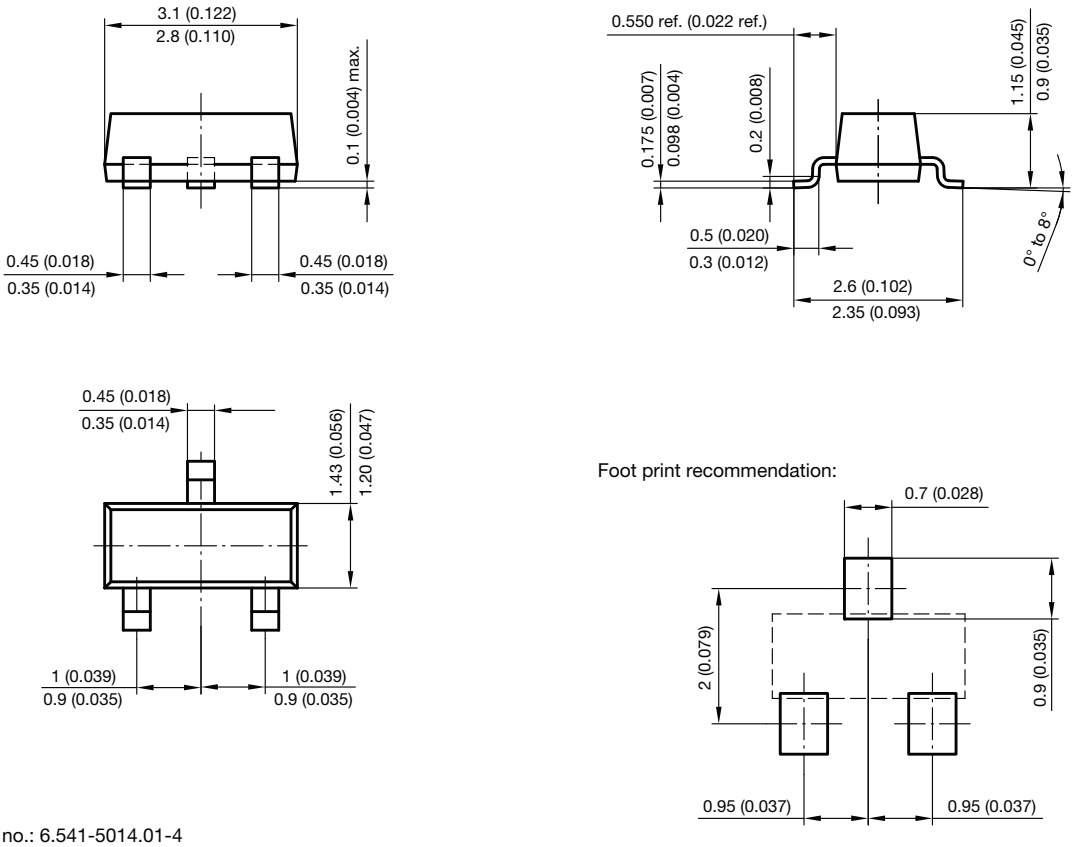


Figure 6. Admissible Repetitive Peak Forward Current vs. Pulse Duration

Package Dimensions in millimeters (inches): **SOT-23**



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