



FAST SWITCHING DIODES

MMBD4148

FEATURES

- Silicon Epitaxial Planar Diode
- Fast switching diode
- This diode is also available in other case styles including: the DO-35 case with the type designation 1N4148, the Mini-MELF case with type designation LL4148

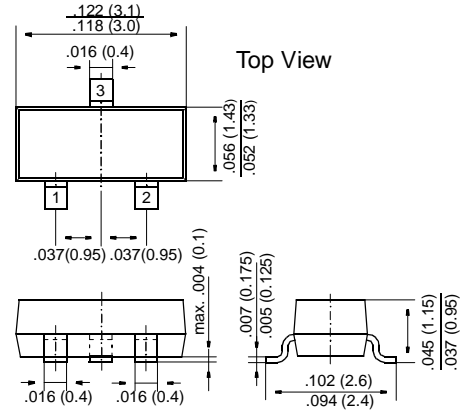
MECHANICAL DATA

- Case: SOT-23 Plastic Package
- Weight: approx: 0.008gram

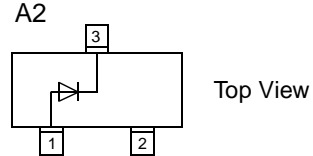
MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

- Ratings at 25°C ambient temperature unless otherwise specified

SOT-23



Marking



	Symbol	Value	Unit
Reverse Voltage	V_R	75	V
Peak Reverse Voltage	V_{RM}	100	V
Rectified Current (Average) Half Wave Rectification with Resist. Load at $T_{amb} = 25\text{ }^\circ\text{C}$ and $\geq f \geq 50\text{ Hz}$	I_0	150 ¹⁾	mA
Surge Forward Current at $t < 1\text{ s}$ and $T_j = 25\text{ }^\circ\text{C}$	I_{FSM}	500	mA
Power Dissipation at $T_{amb} = 25\text{ }^\circ\text{C}$	P_{tot}	350 ¹⁾	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_S	-65 to +150	$^\circ\text{C}$

¹⁾ Device on fiberglass substrate, see layout

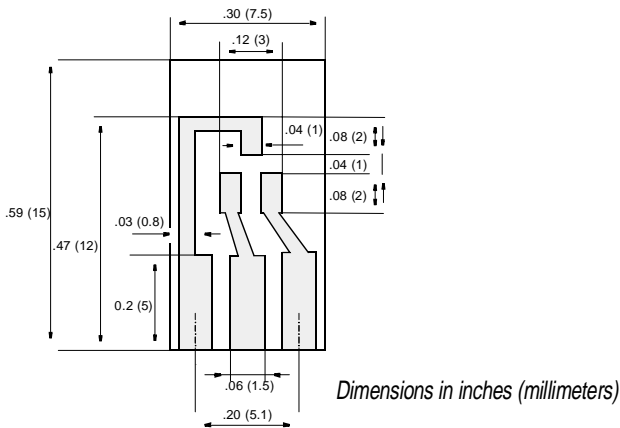


ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified

	Symbol	Min.	Typ.	Max.	Unit
Forward Voltage at $I_F = 10 \text{ mA}$	V_F	–	–	1	V
Leakage Current at $V_R = 70 \text{ V}$ at $V_R = 70 \text{ V}, T_j = 150 \text{ }^\circ\text{C}$ at $V_R = 25 \text{ V}, T_j = 150 \text{ }^\circ\text{C}$	I_R I_R I_R	– – –	– – –	2.5 50 30	μA μA μA
Capacitance at $V_F = V_R = 0$	C_{tot}	–	–	4	pF
Reverse Recovery Time from $I_F = 10 \text{ mA}$ to $I_R = 10 \text{ mA}$ $V_R = 6 \text{ V}, R_L = 100 \text{ } \Omega$	t_{rr}	–	–	4	ns
Thermal Resistance Junction to Ambient Air	R_{thJA}	–	–	450 ¹⁾	K/W

1) Device on fiberglass substrate, see layout



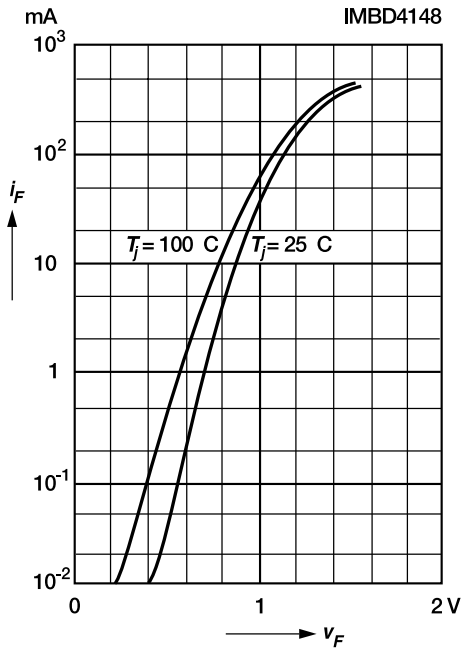
Layout for R_{thJA} test

Thickness: Fiberglass 0.059 in (1.5 mm)

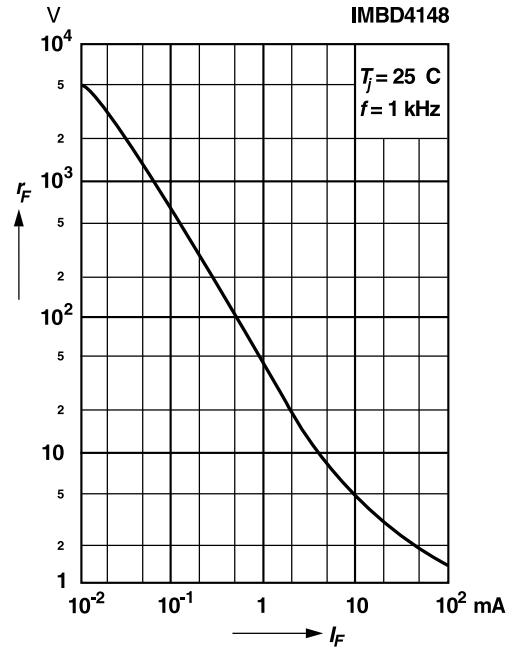
Copper leads 0.012 in (0.3 mm)

RATINGS AND CHARACTERISTIC CURVES IMBD4148

Forward characteristics

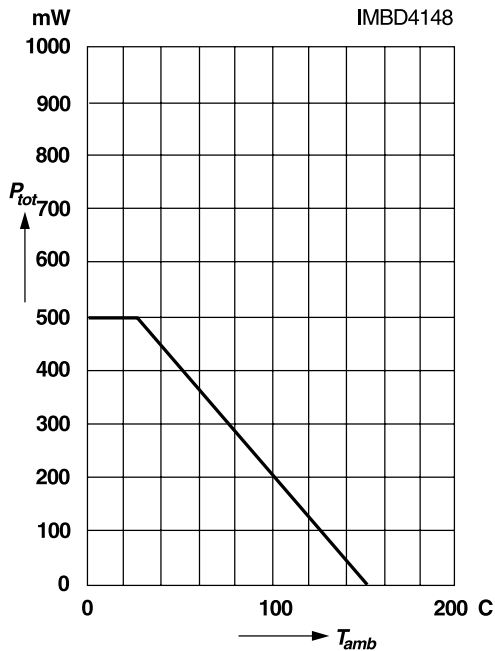


Dynamic forward resistance versus forward current

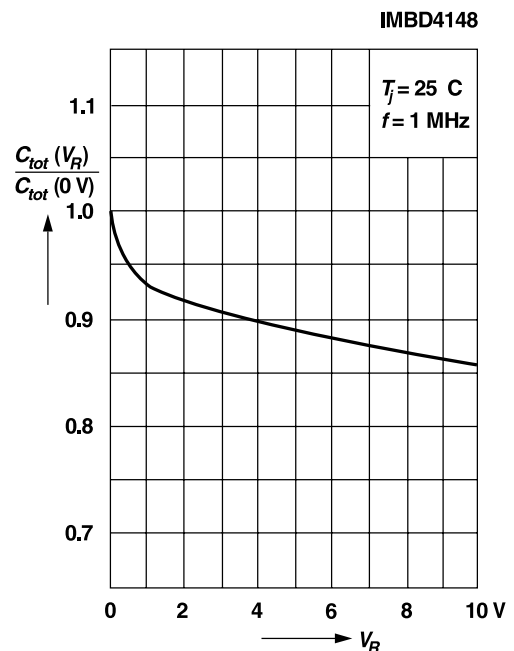


Admissible power dissipation versus ambient temperature

For conditions, see footnote in table "Absolute Maximum Ratings"

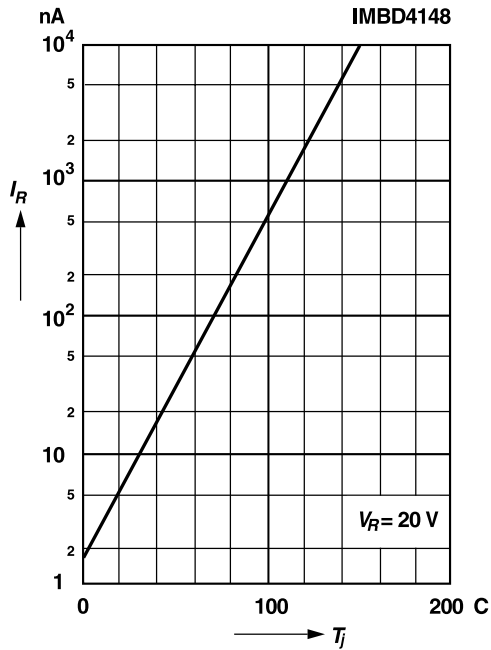


Relative capacitance versus reverse voltage



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Leakage current versus junction temperature



Admissible repetitive peak forward current versus pulse duration

For conditions, see footnote in table "Absolute Maximum Ratings"

