



1N4148

SMALL - SIGNAL SWITCHING DIODE

Reverse Voltage 100V
Forward Current 150mA

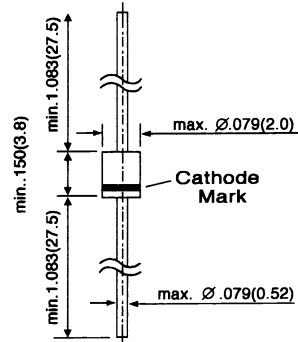
FEATURES

- * Silicon Epitaxial Planar Diode
- * Fast switching diode
- * This diode is also available in other case styles including the SOD - 123 CASE WITH THE TYPE DESIGNATION 1N4148W, the MiniMELF case with the type designation LL4148, the SOT - 23 case with the type designation IMBD4148, and the DO - 34 cast with type designation 1N4148S.

MECHANICAL DATA

- * Case: DO - 35 Glass Case
- * Weight: approx. 0.13g

DO35



Dimensions in inches and (millimeters)

Maximum Ratings and Thermal Characteristics (TA = 25°C, UNLESS OTHERWISE NOTED)

Parameter	Symbol	Limit	Unit
Reverse Voltage	V_R	75	V
Peak Reverse Voltage	V_{RM}	100	V
Average Rectified Current Half Wave Rectification with Resistive Load at $T_{amb} = 25^\circ\text{C}$	$I_{F(AV)}$	150 ⁽¹⁾	mA
Surge Forward Current at $t < 1\text{s}$ and $T_j = 25^\circ\text{C}$	I_{FSM}	500	mA
Power Dissipation at $T_{amb} = 25^\circ\text{C}$ ⁽¹⁾	P_{tot}	500	mW
Thermal Resistance Junction to Ambient Air(1)	$R_{\theta JA}$	350	°C/W
Junction Temperature	T_j	175	°C
Storage Temperature	T_s	-65 to +175	°C

NOTE: (1) Valid provided that leads at a distance of 8mm from case are kept at ambient temperature

RATINGS AND CHARACTERISTIC CURVES(1N4148)

SWITCHING DIODES

FIG. 1 – ADMISSIBLE REPETITIVE PEAK FORWARD CURRENT VERSUS PULSE DURATION

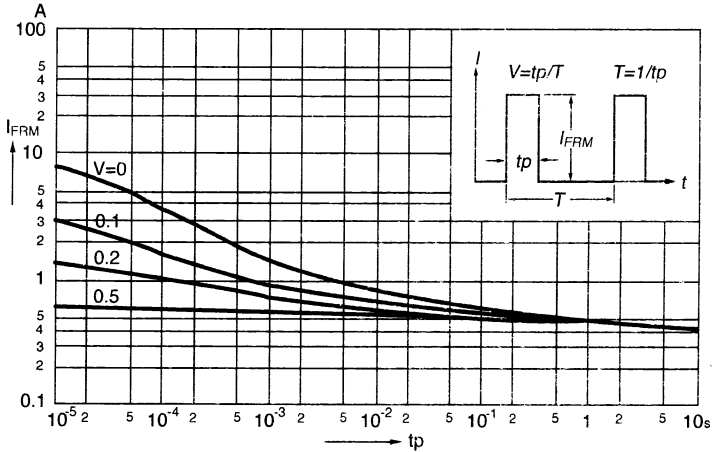


FIG. 2 – FORWARD CHARACTERISTICS

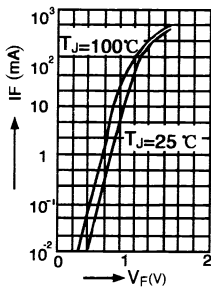


FIG. 3 – DYNAMIC FORWARD RESISTANCE VERSUS FORWARD CURRENT

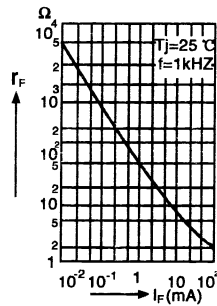
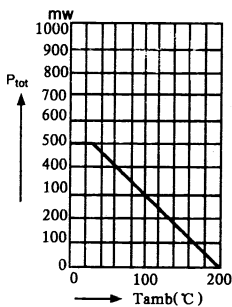
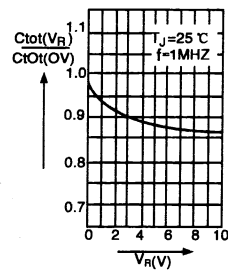


FIG. 4 – ADMISSIBLE POWER DISSIPATION VERSUS AMBIENT TEMPERATURE



DFIG. 5 – RELATIVE CAPACITANCE VERSUS REVERSE VOLTAGE





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Electrical Characteristics (TA = 25°C, UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test condition	Min	Typ	Max	Unit
Reverse Breakdown Voltage	$V_{(BR)R}$	$I_R = 100\mu A$	100			V
Forward Voltage	V_F	$I_F = 10mA$	-	-	1.0	V
Leakage Current	I_R	$V_R = 20V$ $V_R = 75V$ $V_R = 20V, T_J = 150^\circ C$	-	-	25 5 50	nA μA μA
Capacitance	C_{tot}	$V_F = V_R = 0V$	-	-	4	pF
Voltage Rise when Switching ON (tested with 50mA Pulses)	V_{FR}	$T_P = 0.1\mu s$, Rise time < 30ns $F_P = 5$ to 100 KHz	-	-	2.5	ns
Reverse Recovery Time	T_{RR}	$I_F = 100mA, I_R = 1mA$ $V_R = 6V, R_L = 100\Omega$	-	-	4	ns
Rectification Efficiency	η_V	$F = 100MHz, V_{RF} = 2V$	0.45	-	-	-

Rectification Efficiency Measurement Circuit

