

# Silicon Epitaxial Planar Small Signal Diode



## Description

These diodes are also available in other case styles including the DO-35 case with the type designation IN4148, the MiniMELF case with the type designation LL4148 and the MicroMELF case with the type designation MCL4148.

## Features

- SOD 123 package
- Fast switching
- Reverse voltage: 100 Volts
- Forward current: 150mA

## Absolute Maximum Ratings (T<sub>A</sub> = 25°C)

Parameter	Symbol	Value	Unit
Peak Reverse Voltage	V <sub>RM</sub>	100	V
Reverse Voltage	V <sub>R</sub>	75	V
Average Rectified Current Half Wave Rectification With Resistive Load f ≥ 50Hz (Note 1)	I <sub>F(AV)</sub>	150	mA
Non-repetitive Peak Forward Surge Current @ = 1.0μs	I <sub>FSM</sub>	2	A
Power Dissipation (Note 1)	P <sub>D</sub>	400	mW
Thermal Resistance Junction to Ambient Air (Note 1)	R <sub>θJA</sub>	450	°C/W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-65 to +150	°C

## Electrical Characteristics (T<sub>A</sub> = 25°C)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> = 10mA	-	1	V
Reverse Current	I <sub>R</sub>	V <sub>R</sub> = 20V	-	25	nA
		V <sub>R</sub> = 75V	-	5	μA
		V <sub>R</sub> = 20V, T <sub>J</sub> = 150°C	-	50	μA
Capacitance	C <sub>T</sub>	V <sub>F</sub> = V <sub>R</sub> = 0V	-	4	pF
Reverse Recovery Time	trr	from I <sub>F</sub> = 10mA to I <sub>R</sub> = 1mA, V <sub>R</sub> = 6V, R <sub>L</sub> = 100Ω	-	4	ns
Voltage rise when switching ON (tested with 50mA pulse)	V <sub>FR</sub>	tp = 0.1us, rise time <30ns, fp = (5 to 100)kHz	-	2.5	V
Rectification Efficiency	η <sub>V</sub>	f = 100MHz, V <sub>RF</sub> = 2V	0.45	-	-

**Note:** 1. Valid provided that electrodes are kept at ambient temperature.

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## Rating and Characteristic Curves

FIG.1-FORWARD CHARACTERISTICS

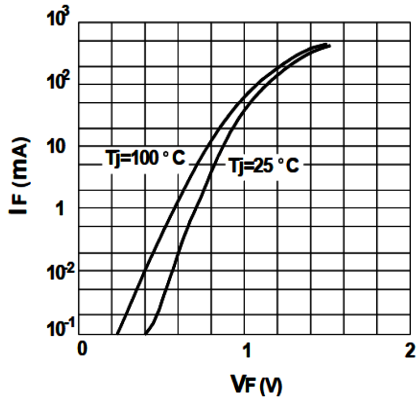


FIG.2-DYNAMIC FORWARD RESISTANCE VS. FORWARD CURRENT

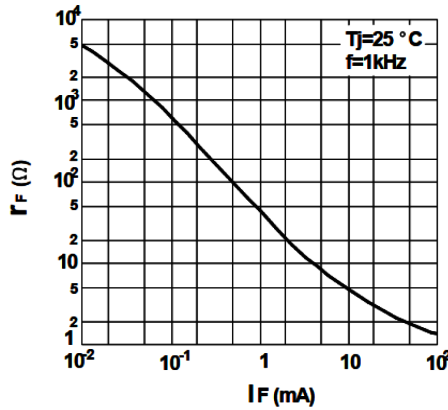


FIG.3-AMISSIBLE POWER DISSIPATION VS. AMBIENT TEMPERATURE

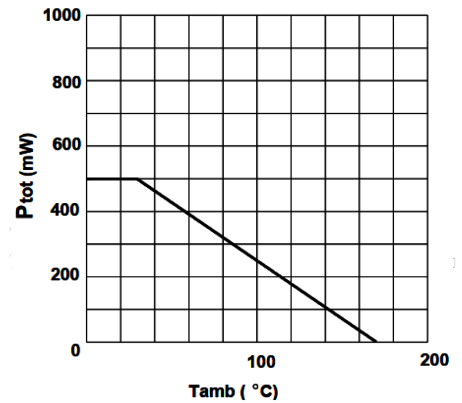


FIG.4-LEAKAGE CURRENT VS. JUNCTION TEMPERATURE

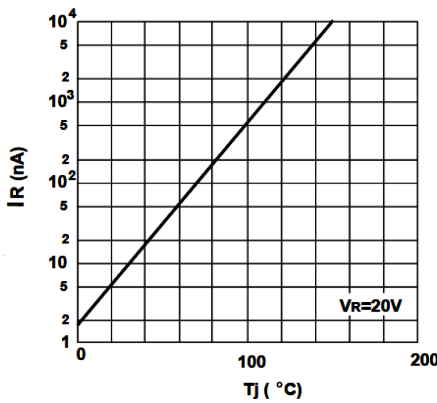


FIG.5-RECTIFICATION EFFICIENCY MEASUREMENT CIRCUIT

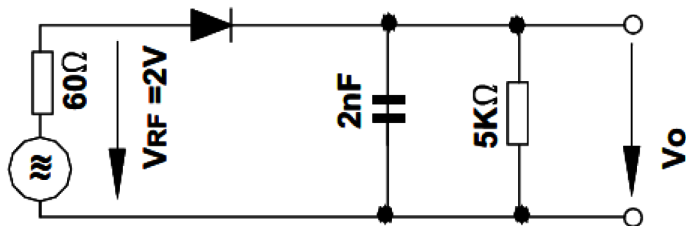


FIG.7-AMISSIBLE REPETITIVE PEAK FORWARD CURRENT VS. PULSE DURATION

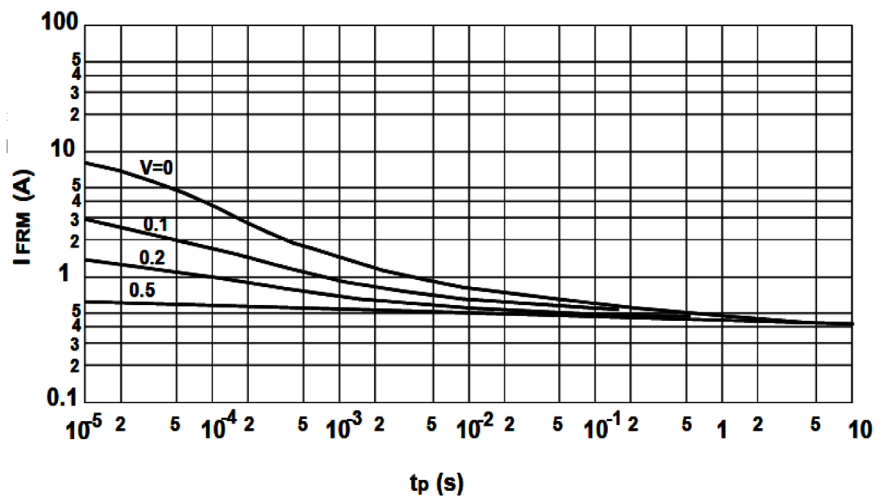
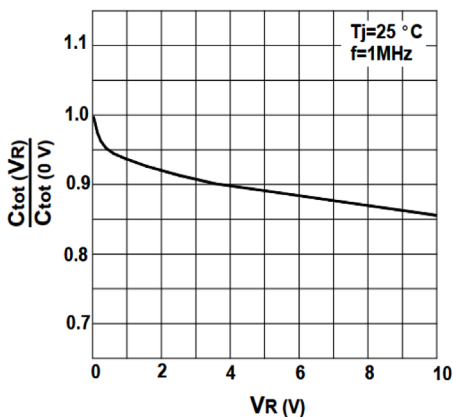


FIG.6-REVERSE CAPACITANCE VS. REVERSE

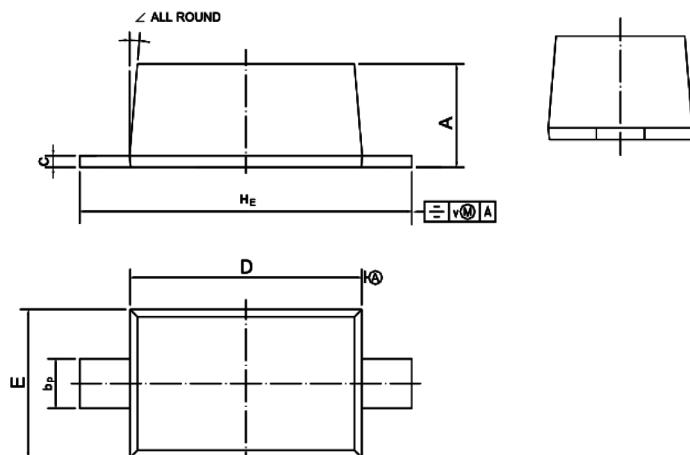


# Silicon Epitaxial Planar Small Signal Diode



## Dimensions:

SOD-123



Unit	A	bp	C	D	E	H <sub>E</sub>	v	∠
mm	1.15	0.6	0.135	2.7	1.65	3.9	0.2	5°
	1.05	0.5	0.127	2.6	1.55	3.7		

## Part Number Table

Description	Part Number
Silicon Epitaxial Planar Small Signal Diode	1N4148W

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