

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 323 package
- Fast switching

Absolute Maximum Ratings (T_A = 25°C)

Parameter	Symbol	Value	Unit
Peak Reverse Voltage	V _{RM}	100	V
Reverse Voltage	V _R	75	V
Average Rectified Current Half Wave Rectification With Resistive Load f ≥ 50Hz	I _{F(AV)}	150*	mA
Surge Forward Current t < 1s T _J = 25°C	I _{FSM}	350	mA
Power Dissipation	P _{tot}	200*	mW
Thermal Resistance Junction to Ambient Air	R _{θJA}	650*	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-65 to +150	°C

* Valid provided that electrodes are kept at ambient temperature.

Electrical Characteristics (T_A = 25°C)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Forward Voltage	V _F	I _F = 10mA	-	1	V
Reverse Current	I _R	V _R = 20V	-	25	nA
		V _R = 75V	-	5	μA
		V _R = 20V, T _J = 150°C	-	50	μA
Capacitance	C _{tot}	V _F = V _R = 0V	-	4	pF
Reverse Recovery Time	t _{rr}	V _R = 6V, I _F = 10mA, R _L = 100Ω, I _R = 1mA	-	4	ns
Voltage Rise when Switching ON (tested with 50mA pulse)	V _{FR}	t _p = 0.1μs, rise time <30ns, f _p = (5 to 100)kHz	-	2.5	V
Rectification Efficiency	η _v	f = 100MHz, V _{RF} = 2V	0.45	-	-

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Rating and Characteristic Curves

FIG.1-FORWARD CHARACTERISTICS

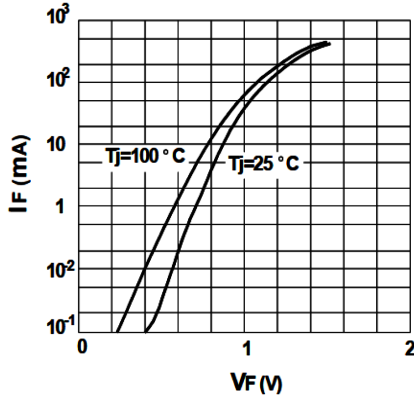


FIG.2-DYNAMIC FORWARD RESISTANCE VS. FORWARD CURRENT

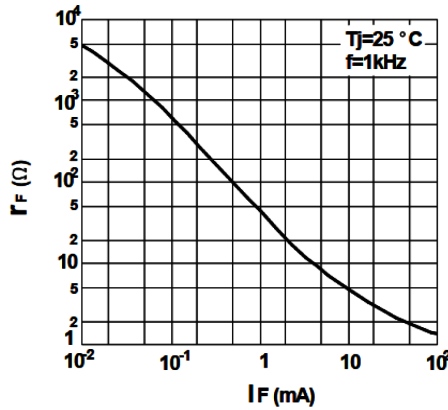


FIG.3-AMISSIBLE POWER DISSIPATION VS. AMBIENT TEMPERATURE

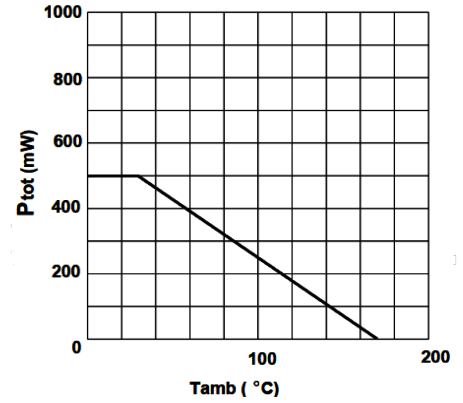


FIG.4-LEAKAGE CURRENT VS. JUNCTION TEMPERATURE

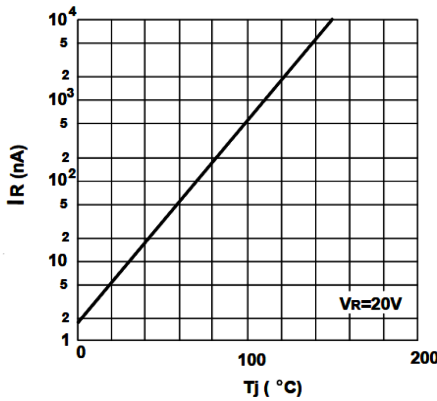


FIG.5-RECTIFICATION EFFICIENCY MEASUREMENT CIRCUIT

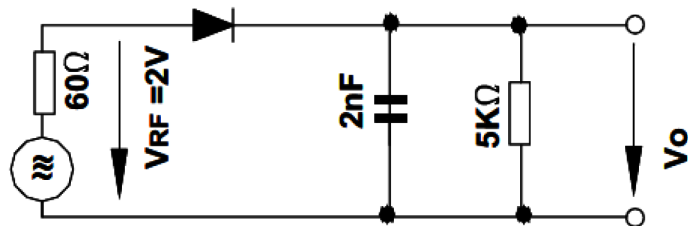


FIG.7-AMISSIBLE REPETITIVE PEAK FORWARD CURRENT VS. PULSE DURATION

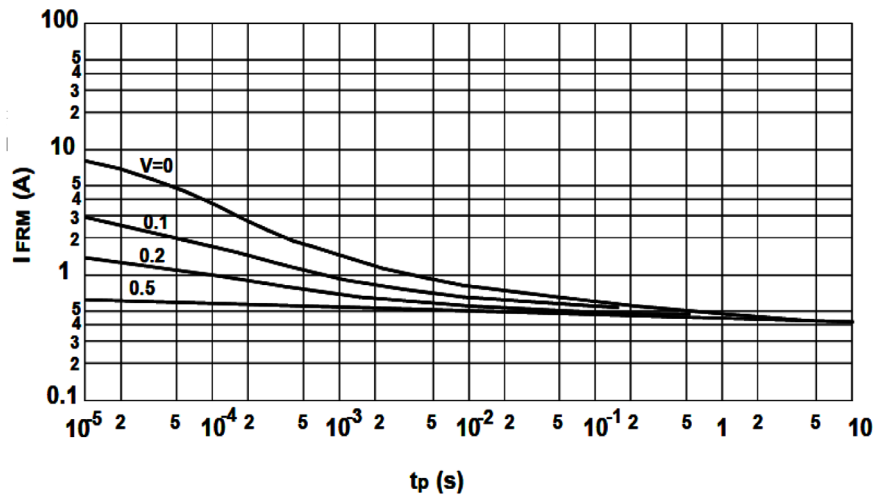
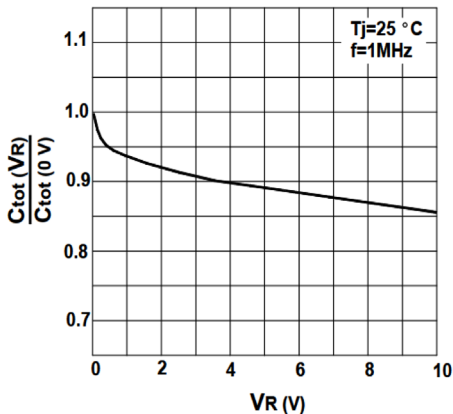


FIG.6-REVERSE CAPACITANCE VS. REVERSE

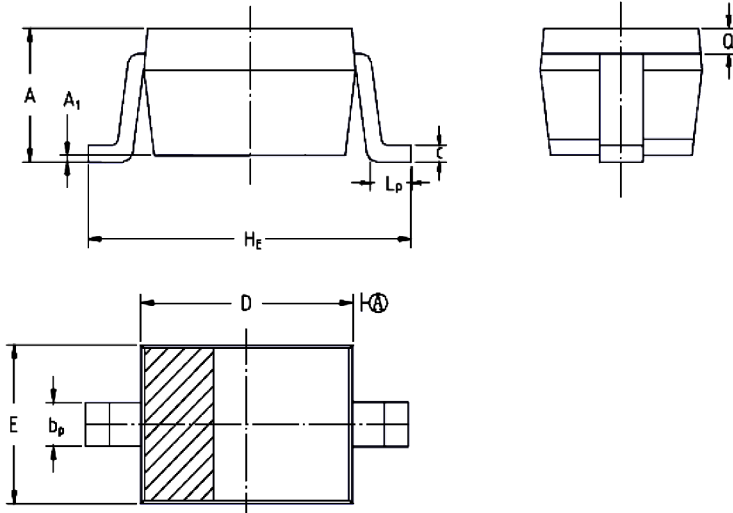


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Dimensions:

SOD-323



Unit	A	A ₁	bp	C	D	E	He	Lp	Q
mm	1.1 0.8	0.1 0	0.4 0.25	0.15 0	1.8 1.6	1.35 1.15	2.8 2.3	0.5 0.1	0.15 Ref.

Part Number Table

Description	Part Number
Silicon Epitaxial Planar Small Signal Diode	1N4148WS

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