

# Silicon Epitaxial Planar Small Signal Diode

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## 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 ( $T_A = 25^\circ\text{C}$ )

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 $f \geq 50\text{Hz}$	$I_{F(AV)}$	150*	mA
Surge Forward Current $t < 1\text{s}$ $T_J = 25^\circ\text{C}$	$I_{FSM}$	350	mA
Power Dissipation	$P_{tot}$	200*	mW
Thermal Resistance Junction to Ambient Air	$R_{\theta JA}$	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 ( $T_A = 25^\circ\text{C}$ )

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Forward Voltage	$V_F$	$I_F = 10\text{mA}$	-	1	V
Reverse Current	$I_R$	$V_R = 20\text{V}$ $V_R = 75\text{V}$ $V_R = 20\text{V}$ , $T_J = 150^\circ\text{C}$	- - -	25 5 50	nA μA μA
Capacitance	$C_{tot}$	$V_F = V_R = 0\text{V}$	-	4	pF
Reverse Recovery Time	$trr$	$V_R = 6\text{V}$ , $I_F = 10\text{mA}$ , $R_L = 100\Omega$ , $I_R = 1\text{mA}$	-	4	ns
Voltage Rise when Switching ON (tested with 50mA pulse)	$V_{FR}$	$tp = 0.1\mu\text{s}$ , rise time <30ns, $fp = (5 \text{ to } 100)\text{kHz}$	-	2.5	V
Rectification Efficiency	$\eta_V$	$f = 100\text{MHz}$ , $V_{RF} = 2\text{V}$	0.45	-	-

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## Rating and Characteristic Curves

FIG.1-FORWARD CHARACTERISTICS

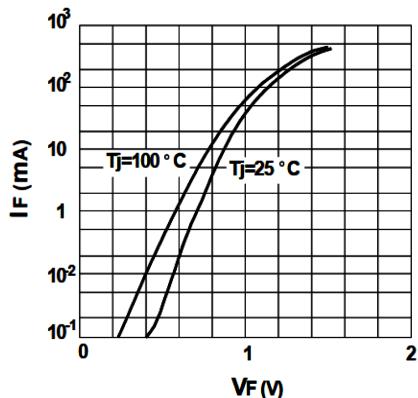


FIG.2-DYNAMIC FORWARD RESISTANCE VS. FORWARD CURRENT

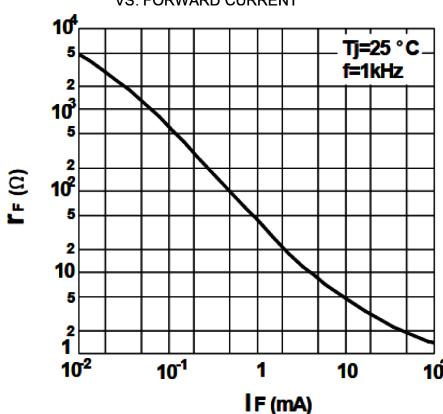


FIG.3-AMMISSIBLE POWER DISSIPATION VS. AMBIENT TEMPERATURE

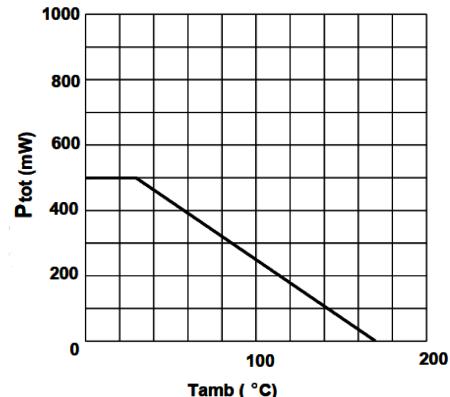


FIG.4-LEAKAGE CURRENT VS. JUNCTION TEMPERATURE

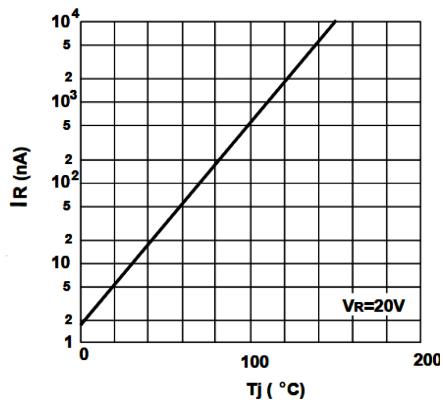


FIG.5-RECTIFICATION EFFICIENCY MEASUREMENT CIRCUIT

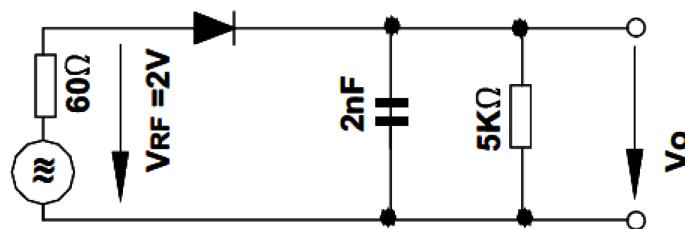


FIG.6-REVERSE CAPACITANCE VS. REVERSE

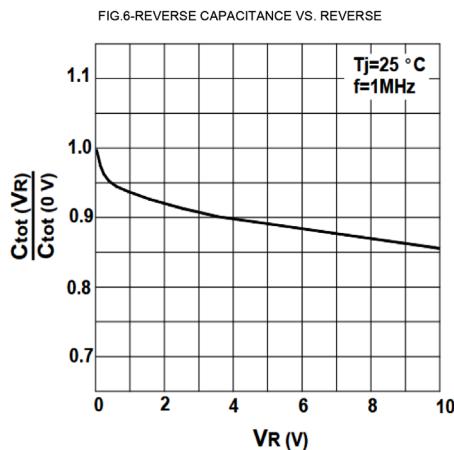
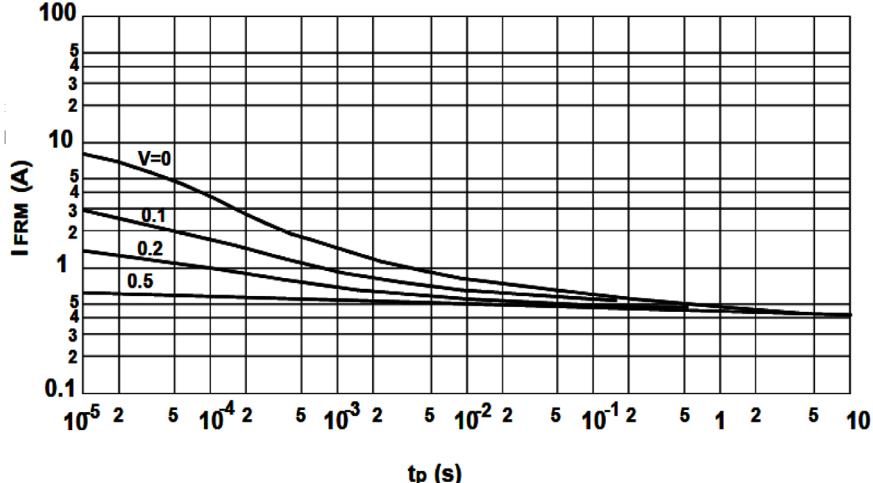


FIG.7-AMMISSIBLE REPETITIVE PEAK FORWARD CURRENT VS. PULSE DURATION

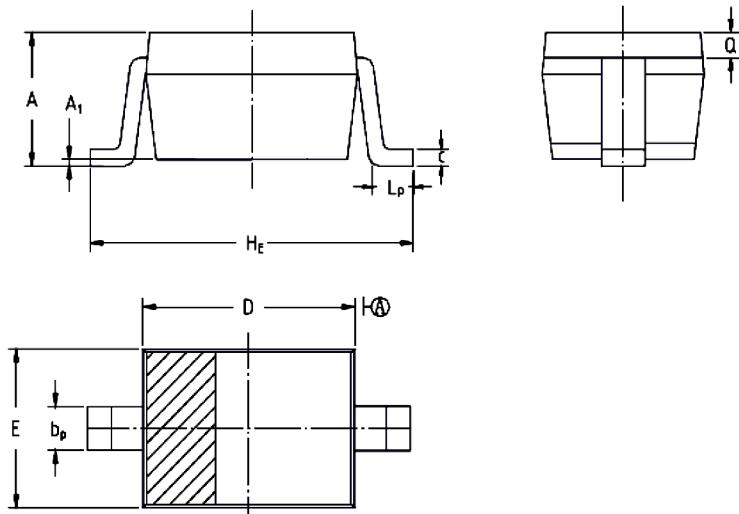


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## Dimensions:

SOD-323



Unit	A	A <sub>1</sub>	b <sub>p</sub>	C	D	E	H <sub>E</sub>	L <sub>p</sub>	Q
mm	1.1	0.1	0.4	0.15	1.8	1.35	2.8	0.5	0.15
	0.8	0	0.25	0	1.6	1.15	2.3	0.1	Ref.

## Part Number Table

Description	Part Number
Silicon Epitaxial Planar Small Signal Diode	1N4148WS

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