FAIRCHILD SEMICONDUCTOR®

April 2012

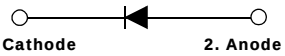
1N4148WS / 1N4448WS / 1N914BWS
Small Signal Diodes

Features

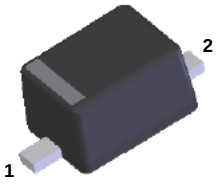
- General Purpose Diodes
- Fast Switching Device (T_{RR} < 4.0ns)
- Very Small and Thin SMD Package
- Moisture Level Sensitivity 1
- Pb-free Version and RoHS Compliant
- Matte Tin (Sn) Lead Finish
- Green Mold Compound

Device Marking Code

Device Type	Device Marking
1N4148WS	S1
1N4448WS	S2
1N914BWS	S3



ELECTRICAL SYMBOL



SOD-323 Flat Lead
Band Indicates Cathode

Absolute Maximum Ratings* T_a = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{RSM}	Non-Repetitive Peak Reverse Voltage	100	V
V_{RRM}	Repetitive Peak Reverse Voltage	75	V
I_{FRM}	Repetitive Peak Forward Current	300	mA
I_O	Continuous Forward Current	150	mA
T_J	Operating Junction Temperature	+150	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.
The factory should be consulted on applications involving pulsed or low duty cycle operations.

Thermal Characteristics

Symbol	Parameter	Value	Units
P_D	Power Dissipation (T_C = 25°C)	200	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient *	500	°C/W

* Device mounted on FR-4 PCB minimum land pad.

Electrical Characteristics T_a = 25°C unless otherwise noted

Symbol	Parameter		Test Conditions	Min.	Typ.	Max.	Units
BV_R	Breakdown Voltage		I_R = 100 μA I_R = 5 μA	100 75			V V
I_R	Reverse Current		V_R = 20 V V_R = 75 V			25 5	nA μA
V_F	Forward Voltage	1N4448WS/914BWS 1N4148WS 1N4448WS/914BWS	I_F = 5 mA I_F = 10 mA I_F = 100 mA	0.62		0.72 1 1	V V V
C_O	Diode Capacitance		V_R = 0, f = 1 MHz			4	pF
T_{RR}	Reverse Recovery Time		I_F = 10 mA, I_R = 60 mA, I_{RR} = 1 mA, R_L = 100 Ω			4	ns

Typical Performance Characteristics

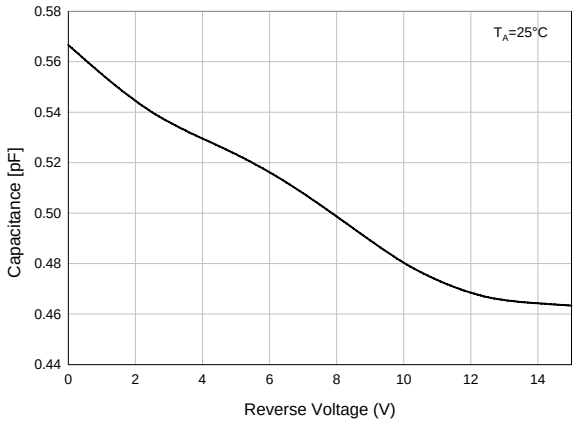


Figure 1. Total Capacitance

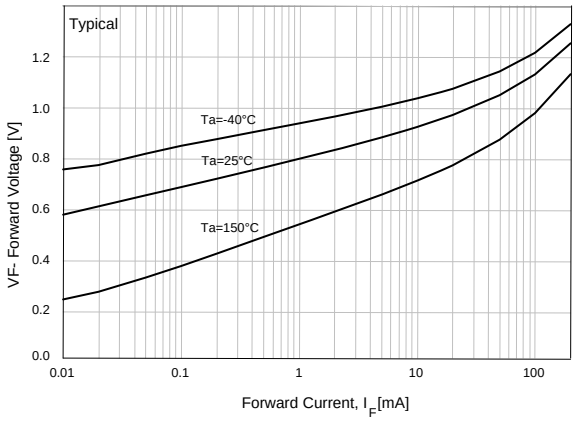


Figure 2. Forward Voltage vs. Ambient Temperature

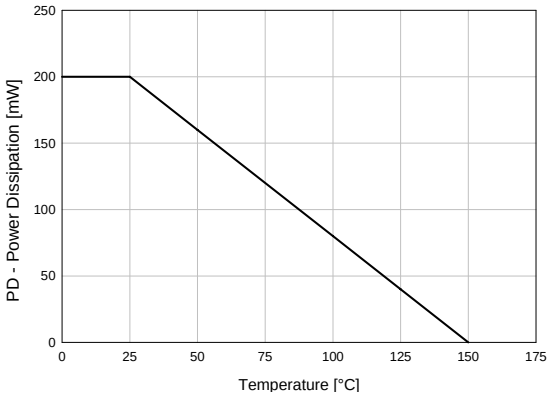


Figure 3. Power Derating Curve

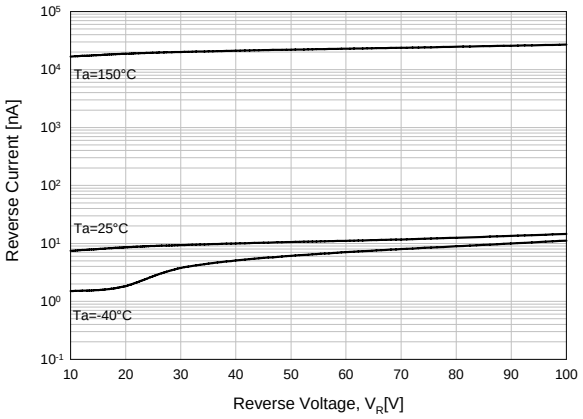


Figure 4. Reverse Current vs. Reverse Voltage

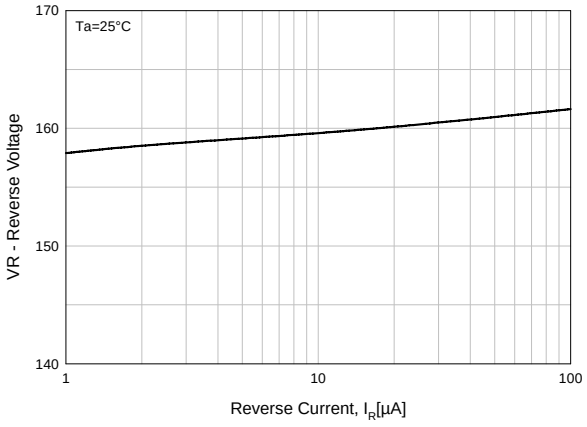
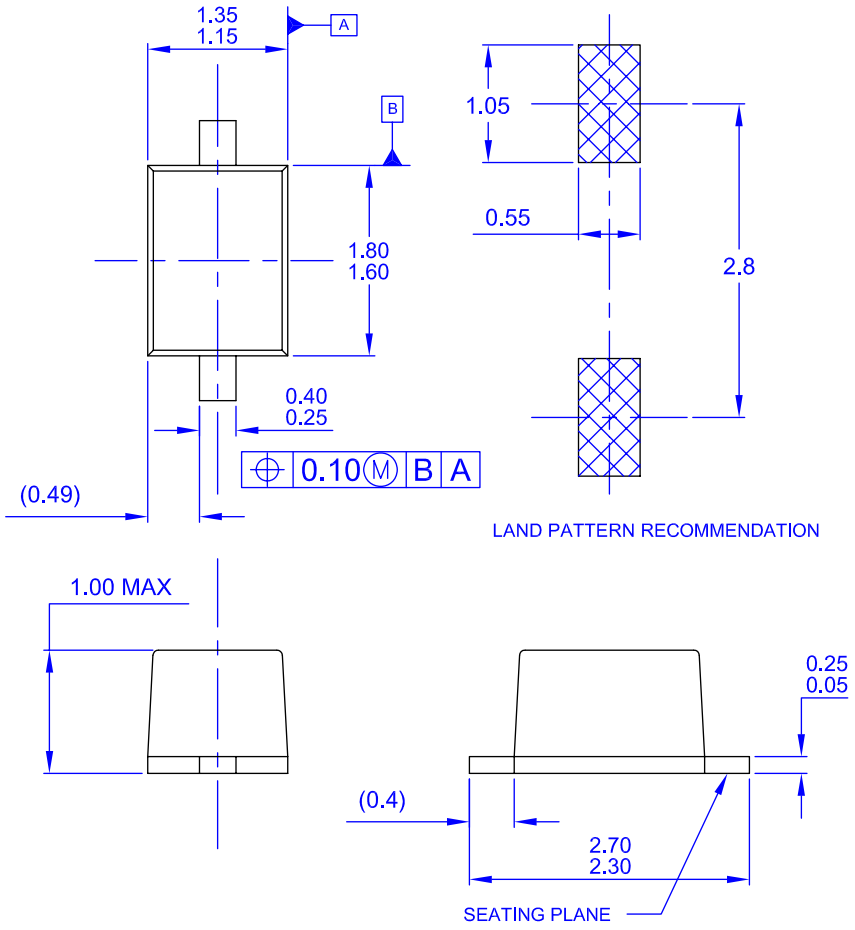


Figure 5. Reverse Voltage vs. Reverse Current

Physical Dimensions

SOD-323F



NOTES: UNLESS OTHERWISE SPECIFIED

A) PACKAGE REFERENCE: THIS PACKAGE OUTLINE CONFORMS TO JEITA SC90, STANDARD EXCEPT FOR THE OVERALL PACKAGE HEIGHT.
B) ALL DIMENSIONS ARE IN MILLIMETERS.
C) DRAWING CONFORMS TO ASME Y14.5M - 1994 .
D) DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR EXTRUSIONS.
E) LANDPATTERN RECOMMENDATION IS BASED ON IPC7351A STANDARD SOD2514X110M.
F) DRAWING NUMBER AND REVISION:MKT-SOD 323F2rev2

Dimensions in Millimeters

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Preliminary	First Production	Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
Obsolete	Not In Production	Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.

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