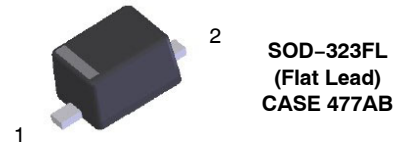


# Small Signal Diodes

## 1N4148WS, 1N4448WS, 1N914BWS

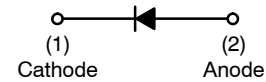


Band Indicates Cathode

### Features

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

### ELECTRICAL SYMBOL



### DEVICE MARKING INFORMATION

See general marking information in the device marking section on page 3 of this data sheet.

### ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage	$V_{RSM}$	100	V
Repetitive Peak Reverse Voltage	$V_{RRM}$	75	V
Repetitive Peak Forward Current	$I_{FRM}$	300	mA
Continuous Forward Current	$I_O$	150	mA
Non-repetitive Peak Forward Surge Current Pulse Width = 1.0 s Pulse Width = 1.0 $\mu$ s	$I_{FSM}$	1.0 4.0	A
Operating Junction Temperature	$T_J$	+150	$^{\circ}$ C
Storage Temperature Range	$T_{STG}$	-55 to +150	$^{\circ}$ C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

### ORDERING INFORMATION

See detailed ordering and shipping information on page 3 of this data sheet.

### THERMAL CHARACTERISTICS (Values are at $T_A = 25^{\circ}$ C unless otherwise noted.)

Symbol	Parameter	Value	Unit
$P_D$	Power Dissipation ( $T_C = 25^{\circ}$ C)	200	mW
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient (Note 1)	500	$^{\circ}$ C/W

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

### ELECTRICAL CHARACTERISTICS (Values are at $T_A = 25^{\circ}$ C unless otherwise noted.)

Symbol	Parameter	Conditions	Min	Max	Unit
$BV_R$	Breakdown Voltage	$I_R = 100 \mu$ A	100	-	V
		$I_R = 5 \mu$ A	75	-	
$I_R$	Reverse Current	$V_R = 20$ V	-	25	nA
		$V_R = 75$ V	-	5	$\mu$ A
$V_F$	Forward Voltage	1N4448WS / 1N914BWS $I_F = 5$ mA	0.62	0.72	V
		1N4148WS $I_F = 10$ mA	-	1	
		1N4448WS / 1N914BWS $I_F = 100$ mA	-	1	
$C_O$	Diode Capacitance	$V_R = 0, f = 1.0$ MHz	-	4	pF
$T_{RR}$	Reverse Recovery Time	$I_F = 10$ mA, $I_R = 60$ mA, $I_{RR} = 1$ mA, $R_L = 100 \Omega$	-	4	ns

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

# 1N4148WS, 1N4448WS, 1N914BWS

## TYPICAL CHARACTERISTICS

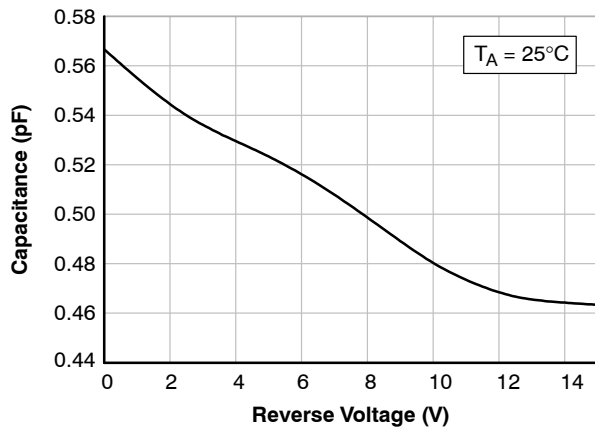


Figure 1. Total Capacitance

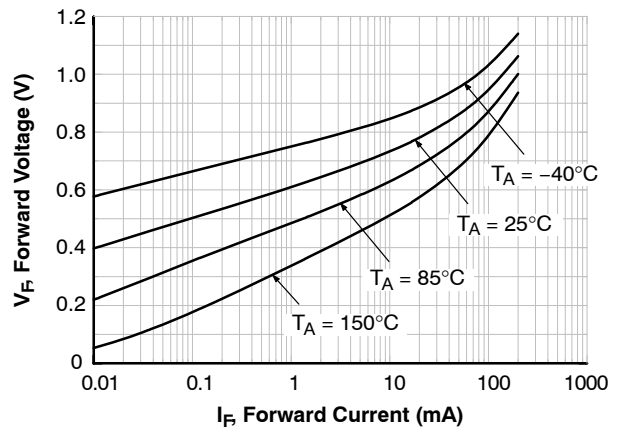


Figure 2. Forward Voltage vs. Ambient Temperature

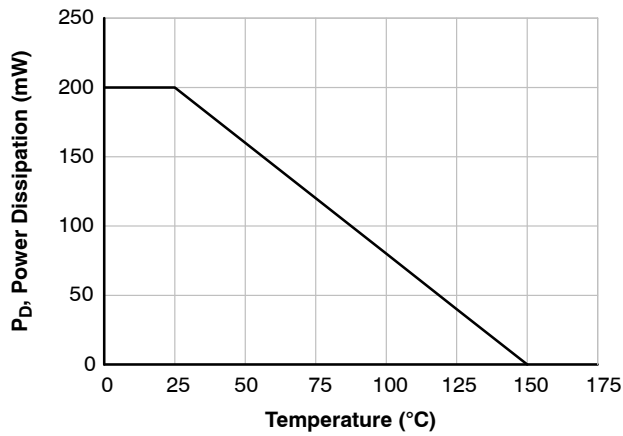


Figure 3. Power Derating Curve

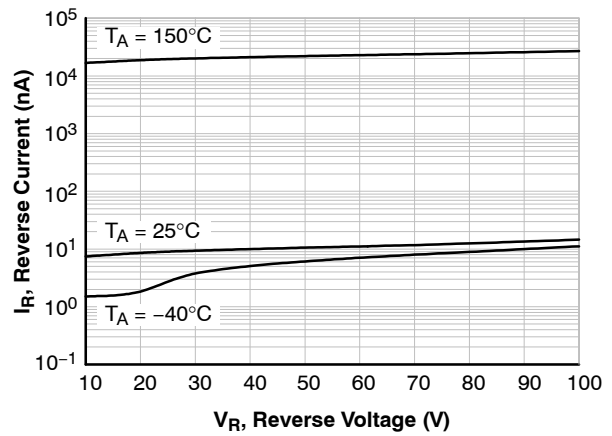


Figure 4. Reverse Current vs. Reverse Voltage

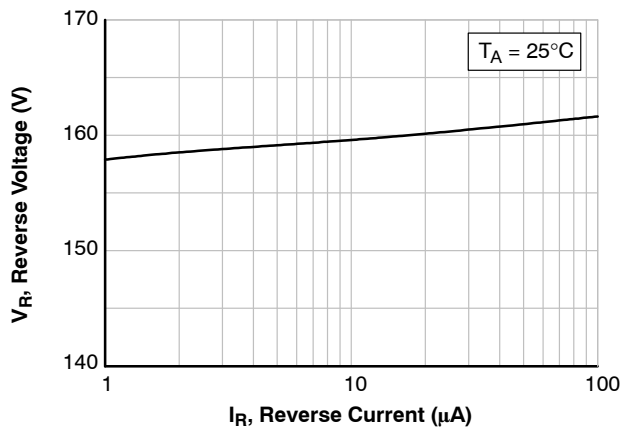
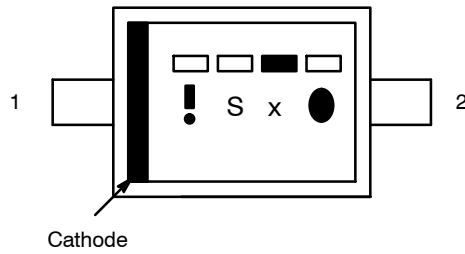


Figure 5. Reverse Voltage vs. Reverse Current

# 1N4148WS, 1N4448WS, 1N914BWS

## MARKING DIAGRAM

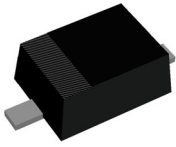


- □ □ □ = Calendar Year
- ! = China Subcon
- Sx = Specific Device Code  
x = 1, 2, 3
- = Payweek

## ORDERING INFORMATION

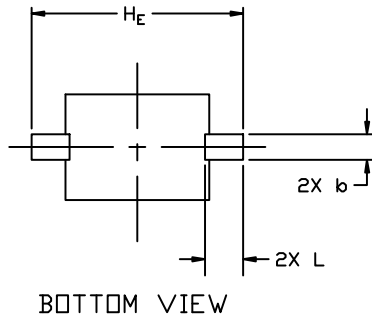
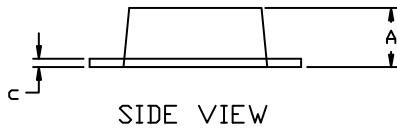
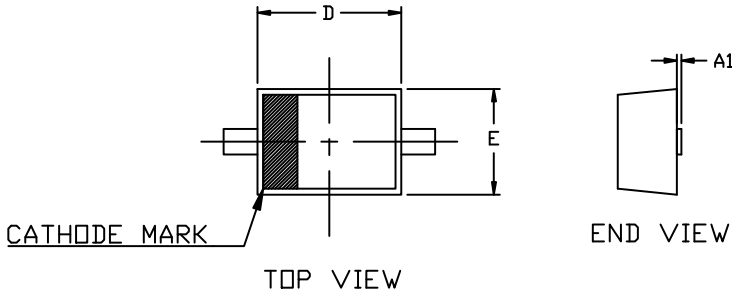
Part Number	Top Mark	Package	Shipping†
1N4148WS	S1	SOD-323FL (Pb-Free)	3000 / Tape & Reel
1N4448WS	S2		
1N914BWS	S3		

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, [BRD8011/D](#).



**SOD-323FL**  
**CASE 477AB**  
**ISSUE A**

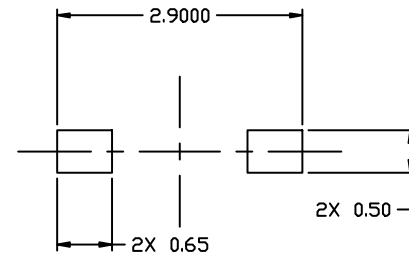
DATE 03 FEB 2023



NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS
3. LEAD THICKNESS INCLUDES LEAD FINISH.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.60	0.70	0.90
A1	0.00	0.05	0.10
b	0.25	0.30	0.35
c	0.05	0.10	0.20
D	1.60	1.70	1.80
E	1.15	1.25	1.35
HE	2.30	2.50	2.70
L	0.35	0.45	0.55



**RECOMMENDED MOUNTING FOOTPRINT**

\* For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

<b>DOCUMENT NUMBER:</b>	<b>98AON79864E</b>	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
<b>DESCRIPTION:</b>	<b>SOD-323FL</b>	<b>PAGE 1 OF 1</b>

onsemi and Onsemi are trademarks of Semiconductor Components Industries, LLC dba onsemi or its subsidiaries in the United States and/or other countries. onsemi reserves the right to make changes without further notice to any products herein. onsemi makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does onsemi assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. onsemi does not convey any license under its patent rights nor the rights of others.

**onsemi**, **Onsemi**, and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "**onsemi**" or its affiliates and/or subsidiaries in the United States and/or other countries. **onsemi** owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of **onsemi**'s product/patent coverage may be accessed at [www.onsemi.com/site/pdf/Patent-Marking.pdf](http://www.onsemi.com/site/pdf/Patent-Marking.pdf). **onsemi** reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as-is" and **onsemi** makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does **onsemi** assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using **onsemi** products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by **onsemi**. "Typical" parameters which may be provided in **onsemi** data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. **onsemi** does not convey any license under any of its intellectual property rights nor the rights of others. **onsemi** products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use **onsemi** products for any such unintended or unauthorized application, Buyer shall indemnify and hold **onsemi** and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that **onsemi** was negligent regarding the design or manufacture of the part. **onsemi** is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

## ADDITIONAL INFORMATION

### TECHNICAL PUBLICATIONS:

Technical Library: [www.onsemi.com/design/resources/technical-documentation](http://www.onsemi.com/design/resources/technical-documentation)  
onsemi Website: [www.onsemi.com](http://www.onsemi.com)

### ONLINE SUPPORT: [www.onsemi.com/support](http://www.onsemi.com/support)

For additional information, please contact your local Sales Representative at [www.onsemi.com/support/sales](http://www.onsemi.com/support/sales)

