

# High Conductance Fast Switching Diode

## 1N4148WT, 1N4448WT, 1N914BWT



SCALE 4:1

 SOD-523  
 CASE 502

**Features**

- Fast Switching Diode ( $T_{RR} < 4.0$  ns)
- Flat Lead, Surface Mount Device Under 0.70 mm Height
- Extremely Small Outline Plastic Package SOD523F
- Moisture Level Sensitivity 1
- Pb-Free Version and RoHS Compliant
- Matte Tin (Sn) Lead Finish
- Green Mold Compound

**Table 1. ABSOLUTE MAXIMUM RATINGS**
 $T_A = 25^\circ\text{C}$  unless otherwise noted

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

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.

1. These ratings are based on a maximum junction temperature of  $150^\circ\text{C}$ .
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

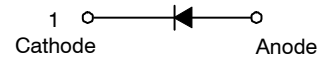
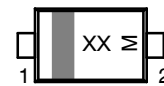
**Table 2. THERMAL CHARACTERISTICS**

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

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

**Table 3. ELECTRICAL SPECIFICATIONS**  $T_A = 25^\circ\text{C}$  unless otherwise noted

Symbol	Parameter		Test Conditions	Min	Typ	Max	Units
$BV_R$	Breakdown Voltage		$I_R = 100 \mu\text{A}$ $I_R = 5 \mu\text{A}$	100 75			V
$I_R$	Reverse Current		$V_R = 20 \text{ V}$ $V_R = 75 \text{ V}$			25 5	nA $\mu\text{A}$
$V_F$	Forward Voltage	1N4448WT / 914BWT 1N4148WT 1N4448WT / 914BWT	$I_F = 5 \text{ mA}$ $I_F = 10 \text{ mA}$ $I_F = 100 \text{ mA}$	0.62		0.72 1 1	V
$C_O$	Diode Capacitance		$V_R = 0, f = 1 \text{ MHz}$			4	pF
$T_{RR}$	Reverse Recovery Time		$I_F = 10 \text{ mA}, V_R = 6.0 \text{ V}$ $I_{RR} = 1 \text{ mA}, R_L = 100 \Omega$			4	nS

**ELECTRICAL SYMBOL**

**MARKING DIAGRAM**

 XX = Specific Device Code  
 M Date Code

**DEVICE MARKING CODE**

Device Type	Device Marking
1N4148WT	E1
1N4448WT	E2
1N914BWT	E3

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## TYPICAL PERFORMANCE CHARACTERISTICS

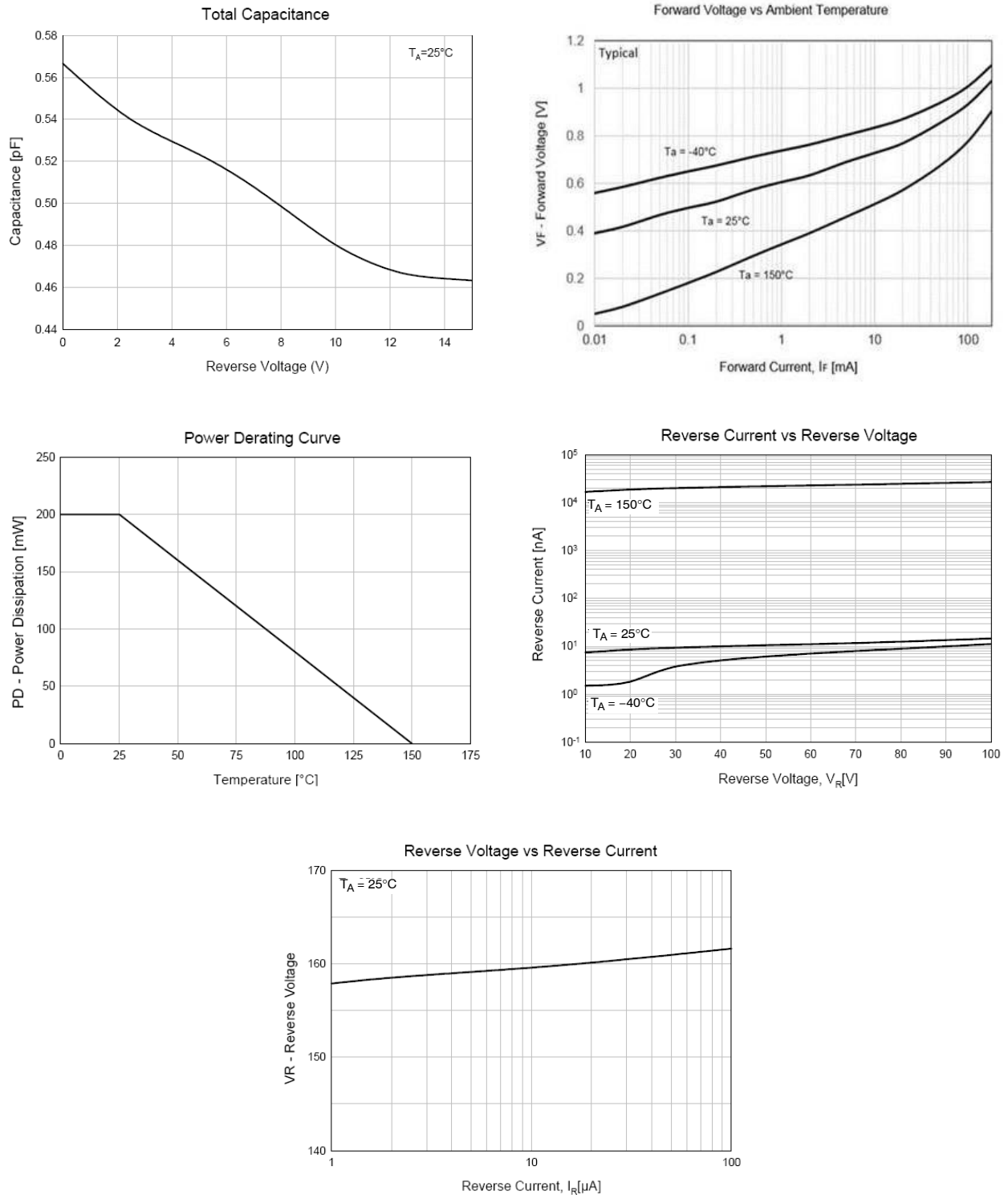
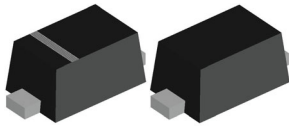
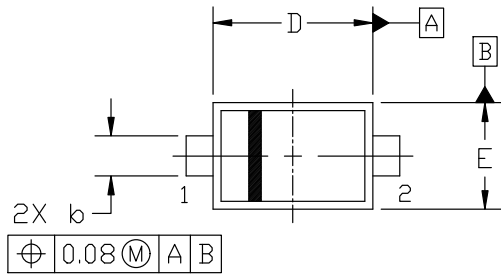


Figure 1. Typical Performance Characteristics

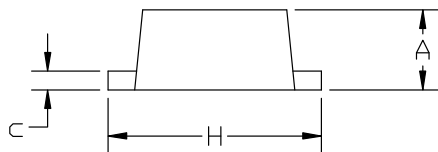


**SOD-523 1.20x0.80x0.60**  
**CASE 502**  
**ISSUE F**

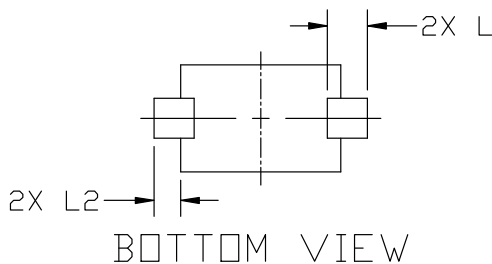
DATE 08 FEB 2024



TOP VIEW

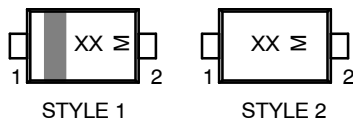


SIDE VIEW



BOTTOM VIEW

**GENERIC MARKING DIAGRAM\***



XX = Specific Device Code  
M = Date Code

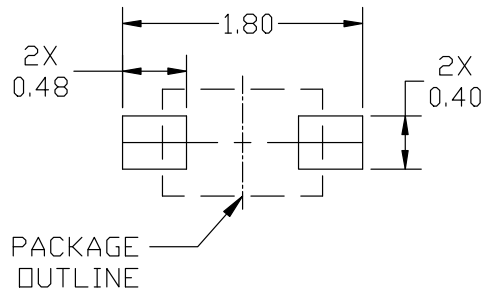
\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present. Some products may not follow the Generic Marking.

STYLE 1: PIN 1. CATHODE (POLARITY BAND)  
2. ANODE  
STYLE 2: NO POLARITY

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH, MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.50	0.60	0.70
b	0.25	0.30	0.35
c	0.07	0.14	0.20
D	1.10	1.20	1.30
E	0.70	0.80	0.90
H	1.50	1.60	1.70
L	0.30 REF		
L2	0.15	0.20	0.25



**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.

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