

# Small Signal Diode

## LL4148

### Features

- This is a Pb-Free and Halide Free Device

### ABSOLUTE MAXIMUM RATINGS

(Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.) (Notes 1 and 2)

Symbol	Parameter		Value	Unit
$V_{RRM}$	Maximum Repetitive Reverse Voltage		100	V
$I_{F(AV)}$	Average Rectified Forward Current		200	mA
$I_f$	Recurrent Peak Forward Current		500	mA
$I_{FSM}$	Non-Repetitive Peak Forward Surge Current		1.0	A
	Pulse Width = 1.0 s		2.0	
$T_{STG}$	Storage Temperature Range		-65 to +200	°C
$T_J$	Operating Junction Temperature Range		-55 to +175	°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  $200^\circ\text{C}$ .
2. These are steady-state limits. onsemi should be consulted on applications involving pulsed or low-duty-cycle operations.

### THERMAL CHARACTERISTICS

(Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.) (Note 3)

Symbol	Parameter	Value	Unit
$P_D$	Power Dissipation	500	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	300	°C/W

3. JEDEC Standard 51-3 method (PCB Board size  $76 \times 114 \times 0.6\text{T mm}^3$ )

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

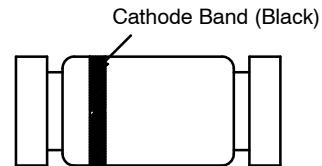
Symbol	Parameter	Conditions	Min	Max	Unit
$V_R$	Breakdown Voltage	$I_R = 100 \mu\text{A}$	100	–	V
		$I_R = 5.0 \mu\text{A}$	75	–	
$V_F$	Forward Voltage	$I_F = 10 \text{ mA}$	–	1.0	V
$I_R$	Reverse Leakage	$V_R = 20 \text{ V}$	–	25	nA
		$V_R = 20 \text{ V}, T_A = 150^\circ\text{C}$	–	50	μA
$C_T$	Total Capacitance	$V_R = 0, f = 1.0 \text{ MHz}$	–	4.0	pF
$t_{rr}$	Reverse Recovery Time	$I_F = 10 \text{ mA}, V_R = 6.0 \text{ V} (60 \text{ mA}), I_{rr} = 1.0 \text{ mA}, R_L = 100 \Omega$	–	4.0	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.



SOD-80  
CASE 100AD

### MARKING DIAGRAM

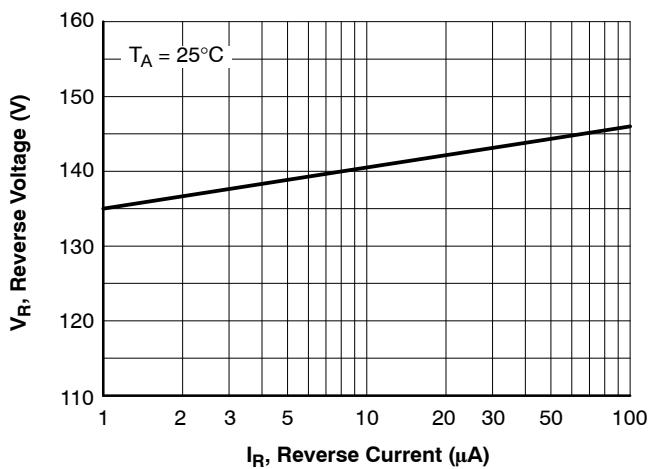


### ORDERING INFORMATION

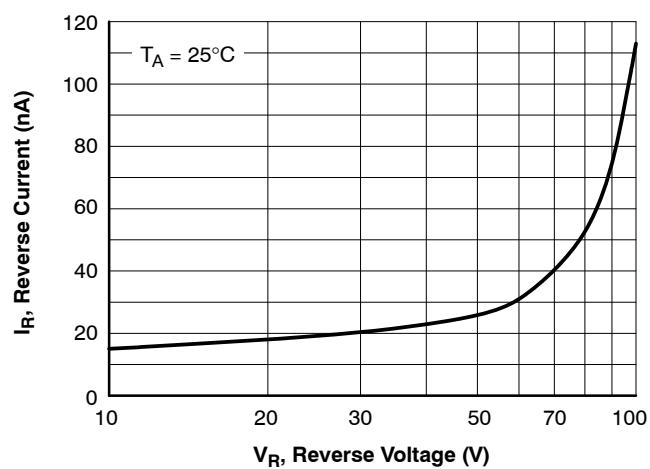
Device	Package	Shipping <sup>†</sup>
LL4148	SOD-80 (Pb-Free/ Halide Free)	2500 / Tape & Reel (7")

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

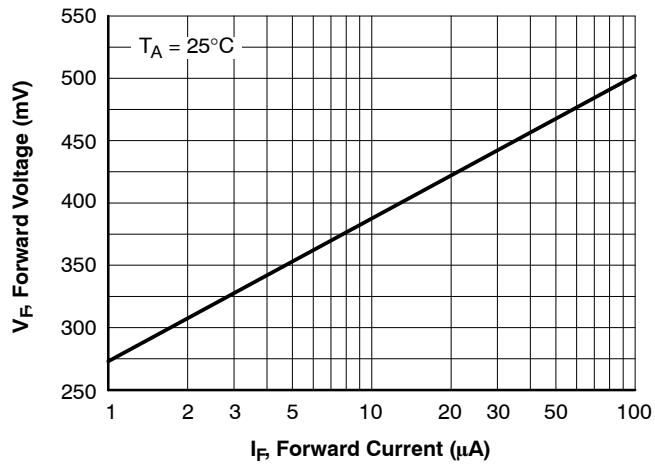
## TYPICAL PERFORMANCE CHARACTERISTICS



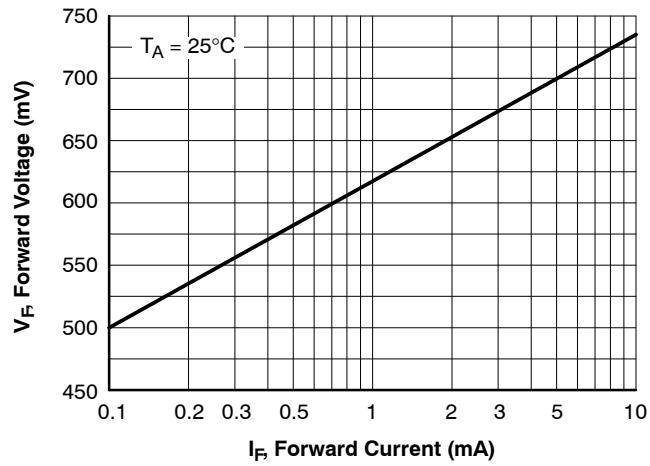
**Figure 1. Reverse Voltage vs. Reverse Current**  
 $BV - 1.0$  to  $100 \mu\text{A}$



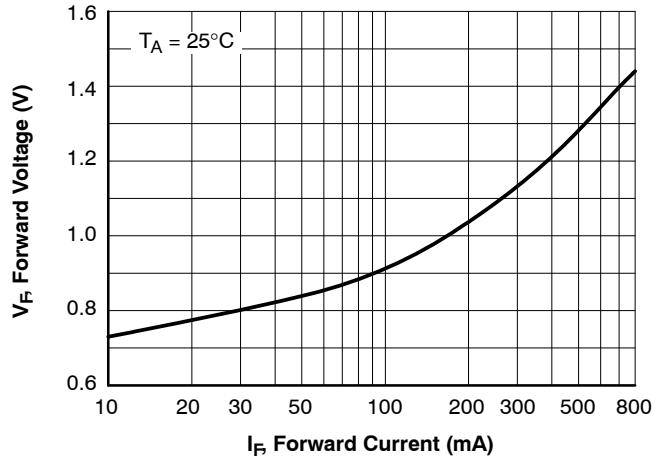
**Figure 2. Reverse Voltage vs. Reverse Current**  
 $I_R - 10$  to  $100 \text{ A}$



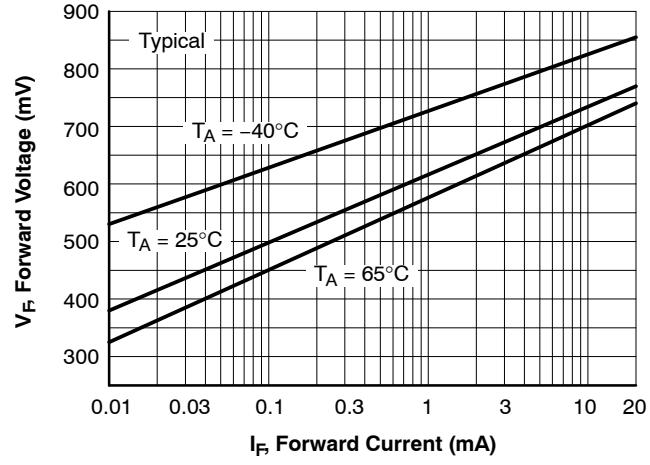
**Figure 3. Forward Voltage vs. Forward Current**  
 $V_F - 1$  to  $100 \mu\text{A}$



**Figure 4. Forward Voltage vs. Forward Current**  
 $V_F - 0.1$  to  $10 \text{ mA}$



**Figure 5. Forward Voltage vs. Forward Current**  
 $V_F - 10$  to  $800 \text{ mA}$



**Figure 6. Forward Voltage vs. Ambient Temperature**  
 $V_F - 0.01$  to  $20 \text{ mA} (-40$  to  $+65^\circ\text{C})$

## TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

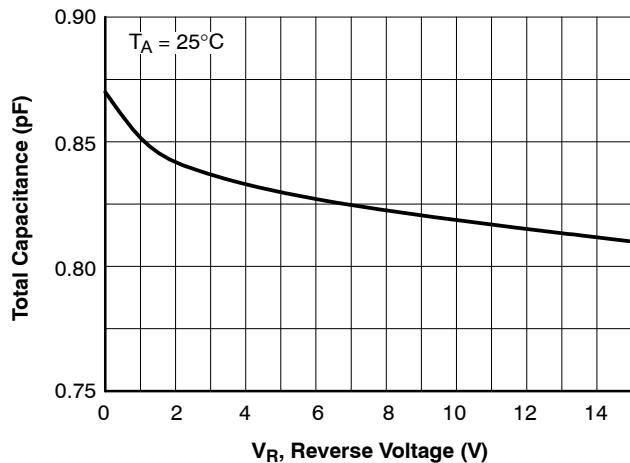


Figure 7. Total Capacitance

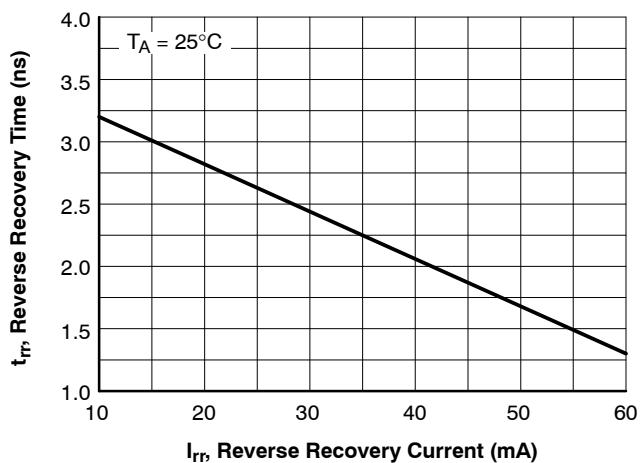


Figure 8. Reverse Recovery Time vs. Reverse Recovery Current

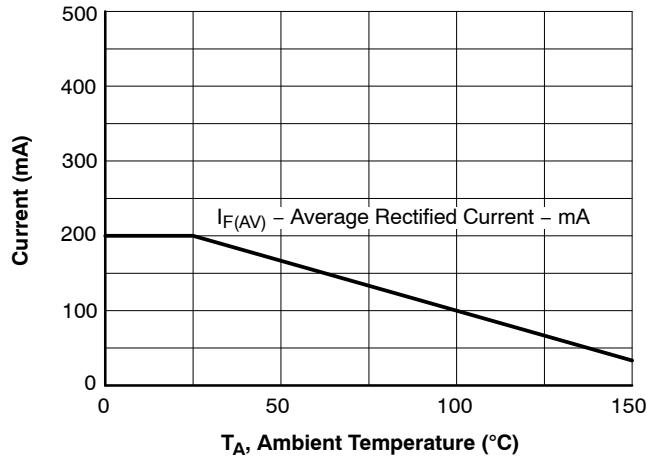
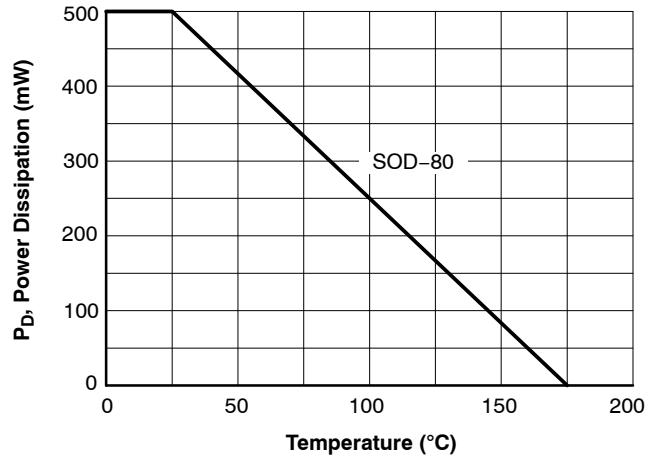
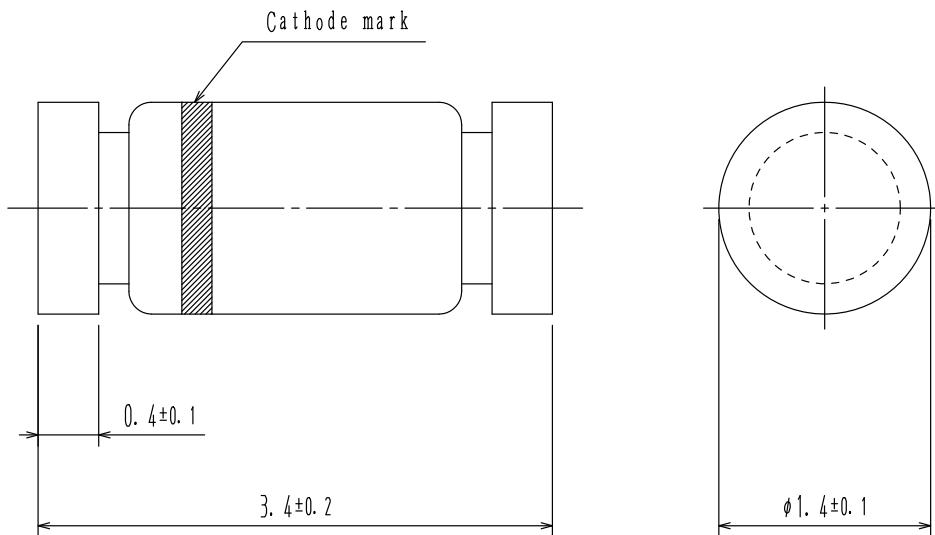
Figure 9. Average Rectified Current ( $I_{F(AV)}$ ) vs. Ambient Temperature ( $T_A$ )

Figure 10. Power Derating Curve

MiniMELF / SOD-80  
CASE 100AD  
ISSUE O

DATE 30 APR 2012



## NOTES: UNLESS OTHERWISE SPECIFIED

- A) PACKAGE STANDARD REFERENCE:  
JEDEC DO-213, VARIATION AC.
- B) ALL DIMENSIONS ARE IN MILLIMETERS.
- C) CORNER RADIUS IS OPTIONAL.
- D) DRAWING FILE NAME: SOD80A REV01

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