

LL4148

Small Signal Diode



SOD80

COLOR BAND MARKING

1ST BAND **2ND BAND**
Black Green

Absolute Maximum Ratings * $T_a = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Unit
V_{RRM}	Maximum Repetitive Reverse Voltage	100	V
$I_{F(AV)}$	Average Rectified Forward Current	200	mA
I_{FSM}	Non-repetitive Peak Forward Surge Current Pulse Width = 1.0 second Pulse Width = 1.0 microsecond	1.0	A
		2.0	A
T_{STG}	Storage Temperature Range	-65 to +200	$^\circ\text{C}$
T_J	Operating Junction Temperature	175	$^\circ\text{C}$

* These ratings are limiting values above which the serviceability of the diode may be impaired.

Notes:

- 1) These ratings are based on a maximum junction temperature of 200degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Thermal Characteristics

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

Note: Jeduc Standard 51-3 method(PCB Board size 76*114*0.6Tmm³)

Electrical Characteristics $T_C = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Conditions	Min.	Max.	Units
V_R	Breakdown Voltage	$I_R = 100\mu\text{A}$	100		V
		$I_R = 5.0\mu\text{A}$	75		V
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

Package Marking and Ordering Information

Device Marking	Device	Package	Reel Size	Tape Width	Quantity
Color Band Marking	LL4148	SOD80	7"	8mm	2,500

Typical Performance Characteristics

Figure 1. Reverse Voltage vs Reverse Current
 V_R - 1.0 to 100 μ A

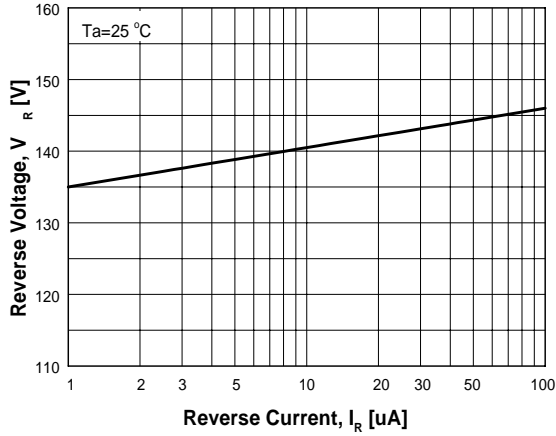


Figure 2. Reverse Voltage vs Reverse Current
 I_R - 10 to 100V

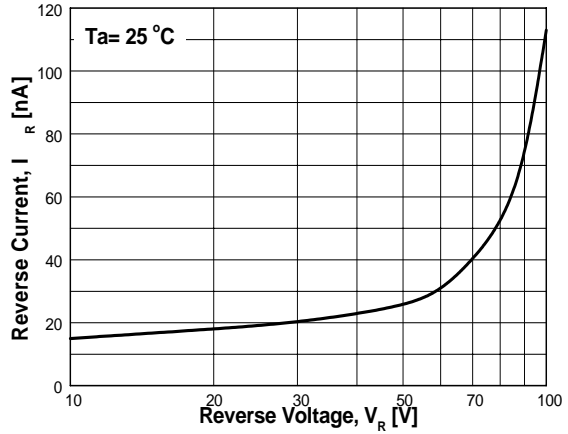


Figure 3. Forward Voltage vs Forward Current
 V_F - 1 to 100 μ A

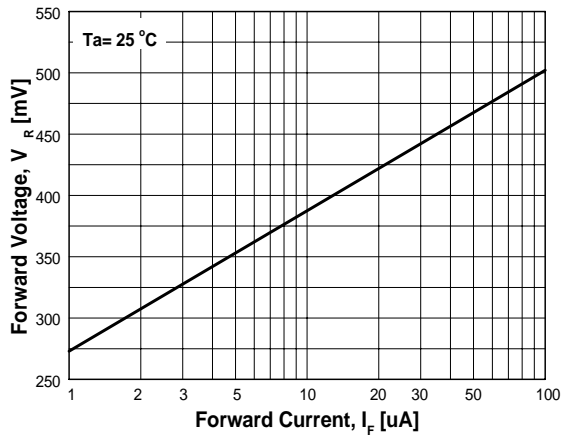


Figure 4. Forward Voltage vs Forward Current
 V_F - 0.1 to 10mA

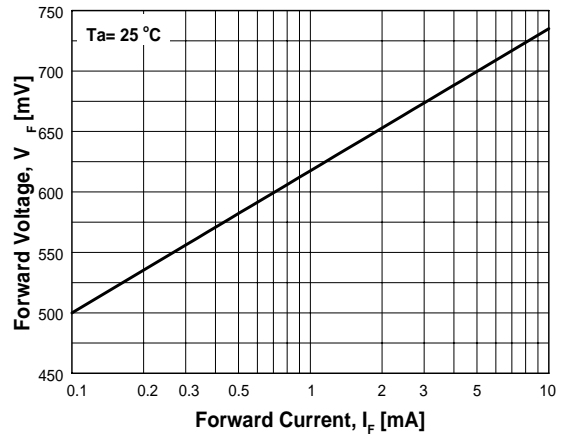


Figure 5. Forward Voltage vs Forward Current
 V_F - 10 to 800mA

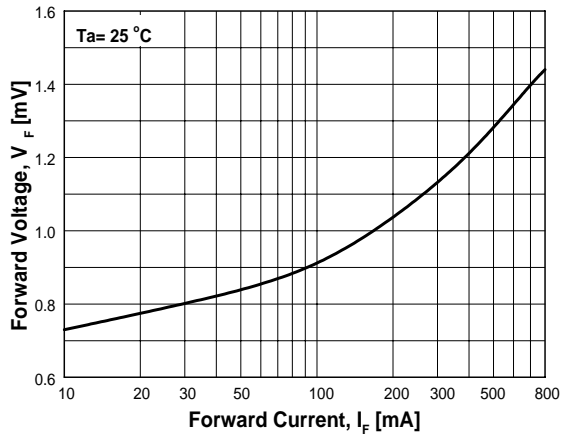
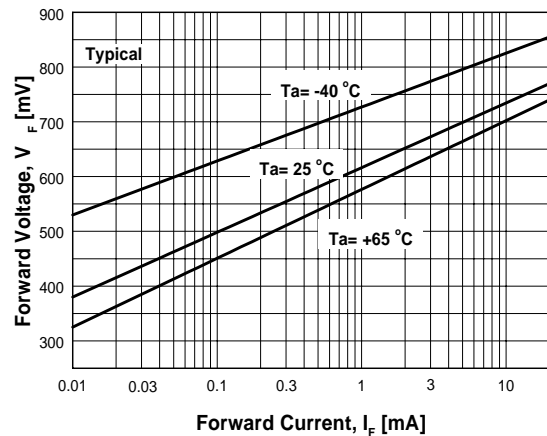


Figure 6. Forward Voltage vs Ambient Temperature
 V_F - 0.01 - 20mA (-40 to +65 Deg C)



Typical Performance Characteristics

Figure 7. Total Capacitance

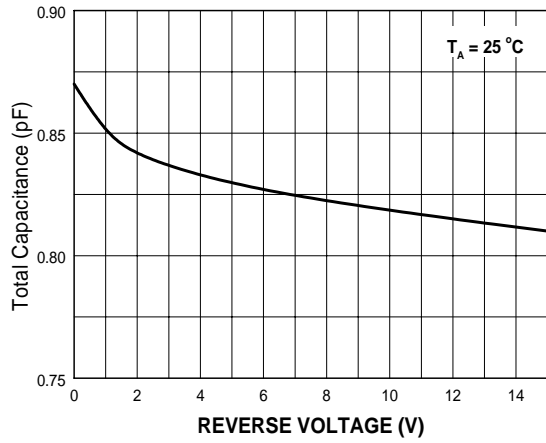


Figure 8. Reverse Recovery Time vs Reverse Recovery Current

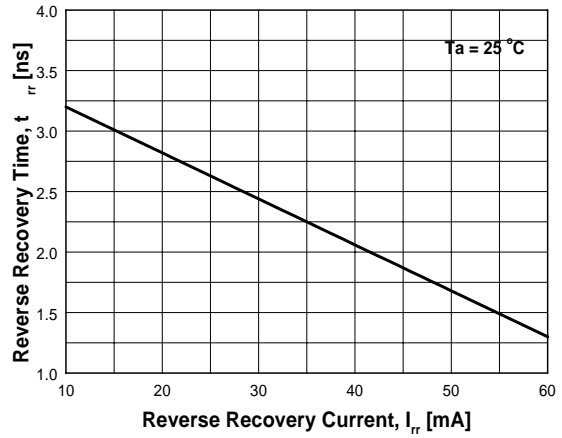


Figure 9. Average Rectified Current ($I_{F(AV)}$) versus Ambient Temperature (T_A)

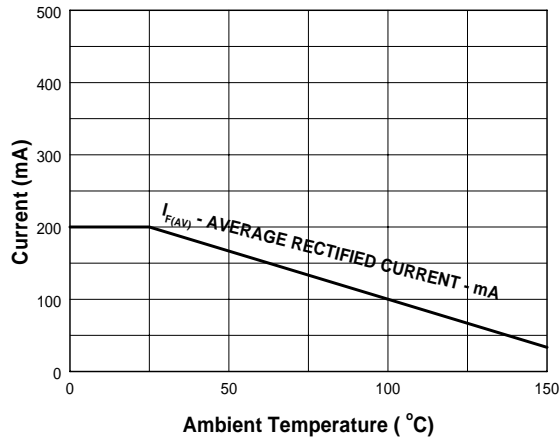
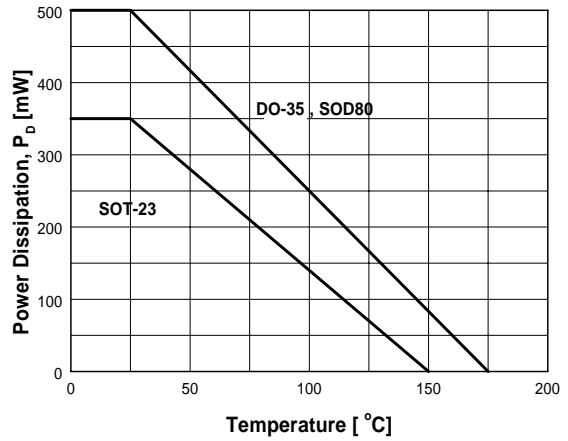
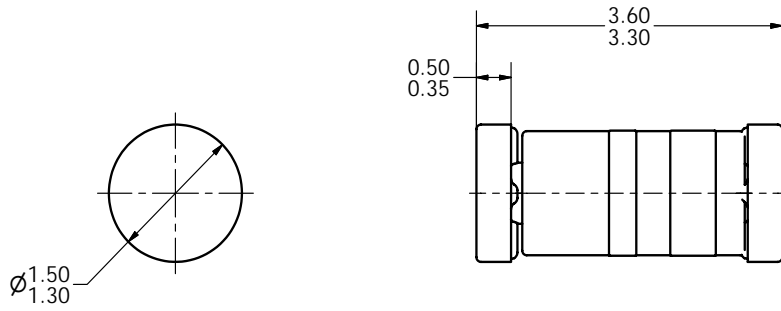


Figure 10. Power Derating Curve



Mechanical Dimensions

SOD80



NOTE/s:

- 1) THIS PACKAGE CONFORMS TO JEDEC DO-213D, VARIATION AC, DATED 9/1988.
- 2) ALL DIMENSIONS ARE IN MILLIMETERS.

TRADEMARKS

The following are registered and unregistered trademarks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks.

ACEx™	FAST®	ISOPLANAR™	PowerSaver™	SuperSOT™-6
ActiveArray™	FASTr™	LittleFET™	PowerTrench®	SuperSOT™-8
Bottomless™	FPS™	MICROCOUPLER™	QFET®	SyncFET™
Build it Now™	FRFET™	MicroFET™	QS™	TinyLogic®
CoolFET™	GlobalOptoisolator™	MicroPak™	QT Optoelectronics™	TINYOPTO™
CROSSVOLT™	GTO™	MICROWIRE™	Quiet Series™	TruTranslation™
DOME™	HiSeC™	MSX™	RapidConfigure™	UHC™
EcoSPARK™	I ² C™	MSXPro™	RapidConnect™	UltraFET®
E ² C MOS™	i-Lo™	OCX™	μSerDes™	UniFET™
EnSigna™	ImpliedDisconnect™	OCXPro™	ScalarPump™	VCX™
FACT™	IntelliMAX™	OPTOLOGIC®	SILENT SWITCHER®	Wire™
FACT Quiet Series™		OPTOPLANAR™	SMART START™	
Across the board. Around the world.™		PACMAN™	SPM™	
The Power Franchise®		POP™	Stealth™	
Programmable Active Droop™		Power247™	SuperFET™	
		PowerEdge™	SuperSOT™-3	

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, or (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.