



**THE DATASHEET OF
1N914BTR**



1N91x, 1N4x48, FDLL914, FDLL4x48

Small Signal Diode



ON Semiconductor®

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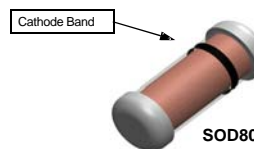
ORDERING INFORMATION

Part Number	Marking	Package	Packing Method
1N914	914	DO-204AH (DO-35)	Bulk
1N914-T50A	914	DO-204AH (DO-35)	Ammo
1N914TR	914	DO-204AH (DO-35)	Tape and Reel
1N914ATR	914A	DO-204AH (DO-35)	Tape and Reel
1N914B	914B	DO-204AH (DO-35)	Bulk
1N914BTR	914B	DO-204AH (DO-35)	Tape and Reel
1N916	916	DO-204AH (DO-35)	Bulk
1N916A	916A	DO-204AH (DO-35)	Bulk
1N916B	916B	DO-204AH (DO-35)	Bulk
1N4148	4148	DO-204AH (DO-35)	Bulk
1N4148TA	4148	DO-204AH (DO-35)	Ammo
1N4148-T26A	4148	DO-204AH (DO-35)	Ammo
1N4148-T50A	4148	DO-204AH (DO-35)	Ammo
1N4148TR	4148	DO-204AH (DO-35)	Tape and Reel
1N4148-T50R	4148	DO-204AH (DO-35)	Tape and Reel
1N4448	4448	DO-204AH (DO-35)	Bulk
1N4448TR	4448	DO-204AH (DO-35)	Tape and Reel
FDLL914	Black	SOD-80	Tape and Reel
FDLL914A	Black	SOD-80	Tape and Reel
FDLL914B	Black	SOD-80	Tape and Reel
FDLL4148	Black	SOD-80	Tape and Reel
FDLL4148-D87Z	Black	SOD-80	Tape and Reel
FDLL4448	Black	SOD-80	Tape and Reel
FDLL4448-D87Z	Black	SOD-80	Tape and Reel



DO-35

Cathode is denoted with a black band



SOD80

LL-34
THE PLACEMENT OF THE EXPANSION GAP HAS NO RELATIONSHIP TO THE LOCATION OF THE CATHODE TERMINAL

SOD-80 COLOR BAND MARKING

DEVICE	1ST BAND
FDLL914	BLACK
FDLL914A	BLACK
FDLL914B	BLACK
FDLL4148	BLACK
FDLL4448	BLACK

-1st band denotes cathode terminal and has wider width

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ABSOLUTE MAXIMUM RATINGS (Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted) (Note 1)

Rating	Symbol	Value	Unit	
Maximum Repetitive Reverse Voltage	V_{RRM}	100	V	
Average Rectified Forward Current	I_O	200	mA	
DC Forward Current	I_F	300	mA	
Recurrent Peak Forward Current	I_f	400	mA	
Non-repetitive Peak Forward Surge Current		Pulse Width = 1.0 s	1.0	A
		Pulse Width = 1.0 μs	4.0	A
Storage Temperature Range	T_{STG}	-65 to +200	$^\circ\text{C}$	
Operating Junction Temperature Range	T_J	-55 to +175	$^\circ\text{C}$	

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 limiting values above which the serviceability of the diode may be impaired.

THERMAL CHARACTERISTICS

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

ELECTRICAL CHARACTERISTICS (Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted) (Note 2)

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	
V_F	Forward Voltage	914B / 4448	$I_F = 5.0 \text{ mA}$	0.62	0.72	V
		916B	$I_F = 5.0 \text{ mA}$	0.63	0.73	V
		914 / 916 / 4148	$I_F = 10 \text{ mA}$		1.0	V
		914A / 916A	$I_F = 20 \text{ mA}$		1.0	V
		916B	$I_F = 20 \text{ mA}$		1.0	V
		914B / 4448	$I_F = 100 \text{ mA}$		1.0	V
I_R	Reverse Leakage	$V_R = 20 \text{ V}$		0.025	μA	
		$V_R = 20 \text{ V}, T_A = 150^\circ\text{C}$		50	μA	
		$V_R = 75 \text{ V}$		5.0	μA	
C_T	Total Capacitance	916/916A/916B/4448	$V_R = 0, f = 1.0 \text{ MHz}$		2.0	pF
		914/914A/914B/4148	$V_R = 0, f = 1.0 \text{ MHz}$		4.0	pF
t_{rr}	Reverse Recovery Time	$I_F = 10 \text{ mA}, V_R = 6.0 \text{ V} (600 \text{ mA})$ $I_{rr} = 1.0 \text{ mA}, R_L = 100 \Omega$		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.

2. Non-recurrent square wave $P_W = 8.3 \text{ ms}$.

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TYPICAL PERFORMANCE CHARACTERISTICS

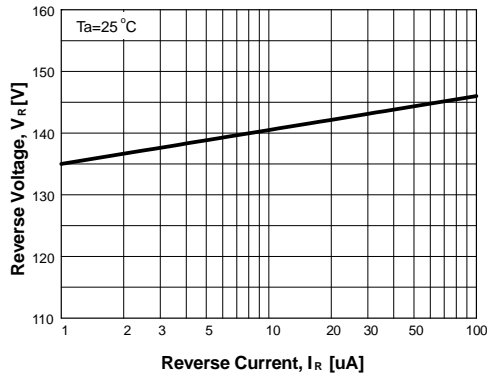


Figure 1. Reverse Voltage vs. Reverse Current
 $V_R - 1.0$ to $100 \mu A$

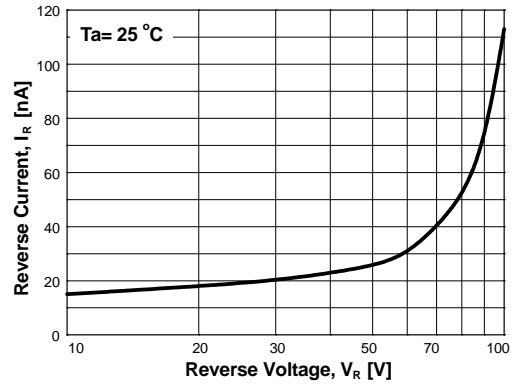


Figure 2. Reverse Current vs. Reverse Voltage
 $I_R - 10$ to $100 V$

GENERAL RULE: The Reverse Current of a diode will approximately double for every ten (10) Degree C increase in Temperature

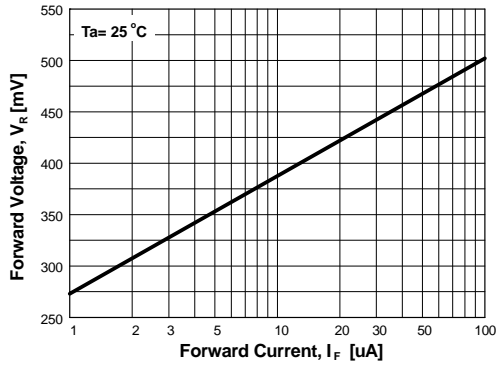


Figure 3. Forward Voltage vs. Forward Current
 $V_F - 1$ to $100 \mu A$

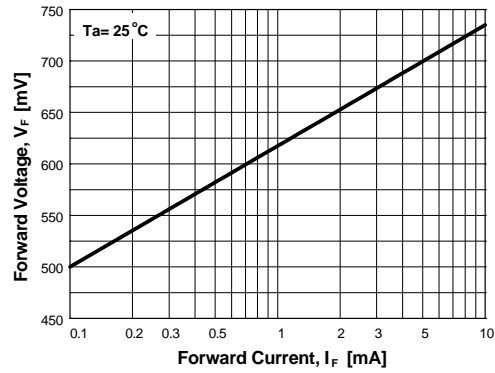


Figure 4. Forward Voltage vs. Forward Current
 $V_F - 0.1$ to $10 mA$

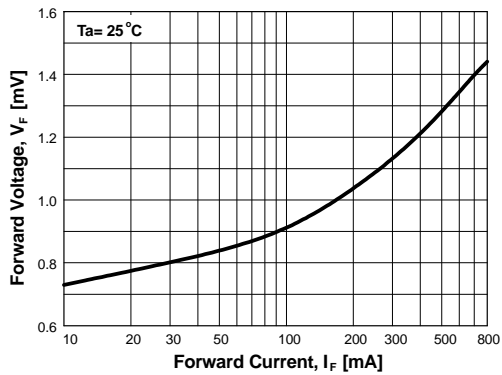


Figure 5. Forward Voltage vs. Forward Current
 $V_F - 10$ to $800 mA$

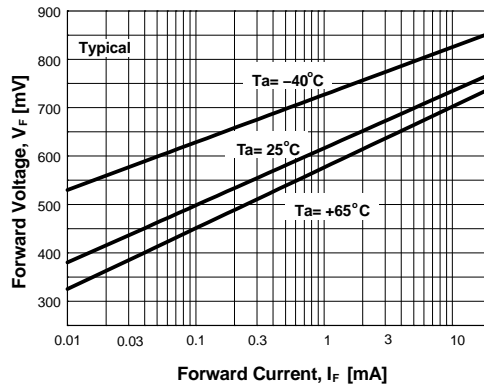


Figure 6. Forward Voltage vs. Ambient Temperature
 $V_F - 0.01 - 20 mA (-40$ to $+65^\circ C)$

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TYPICAL PERFORMANCE CHARACTERISTICS

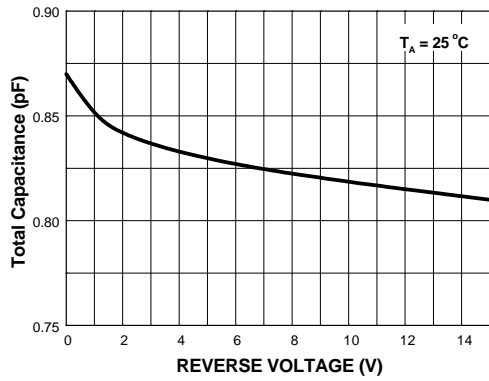


Figure 7. Total Capacitance

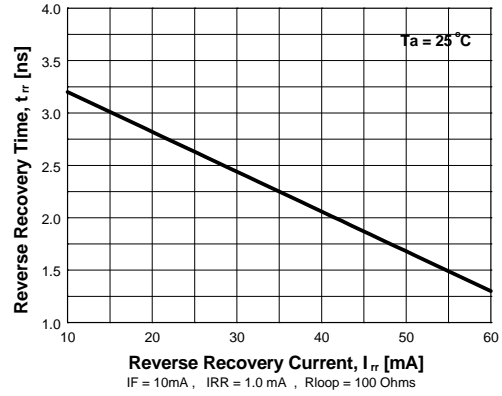


Figure 8. Reverse Recovery Time vs. Reverse Recovery Current

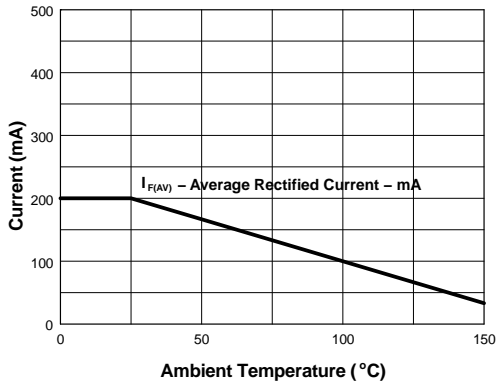


Figure 9. Average Rectified Current ($I_{F(AV)}$) vs. Ambient Temperature (T_A)

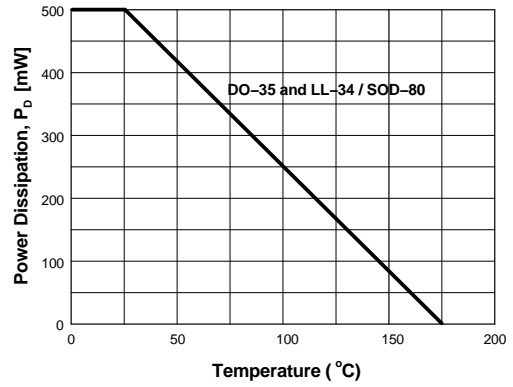
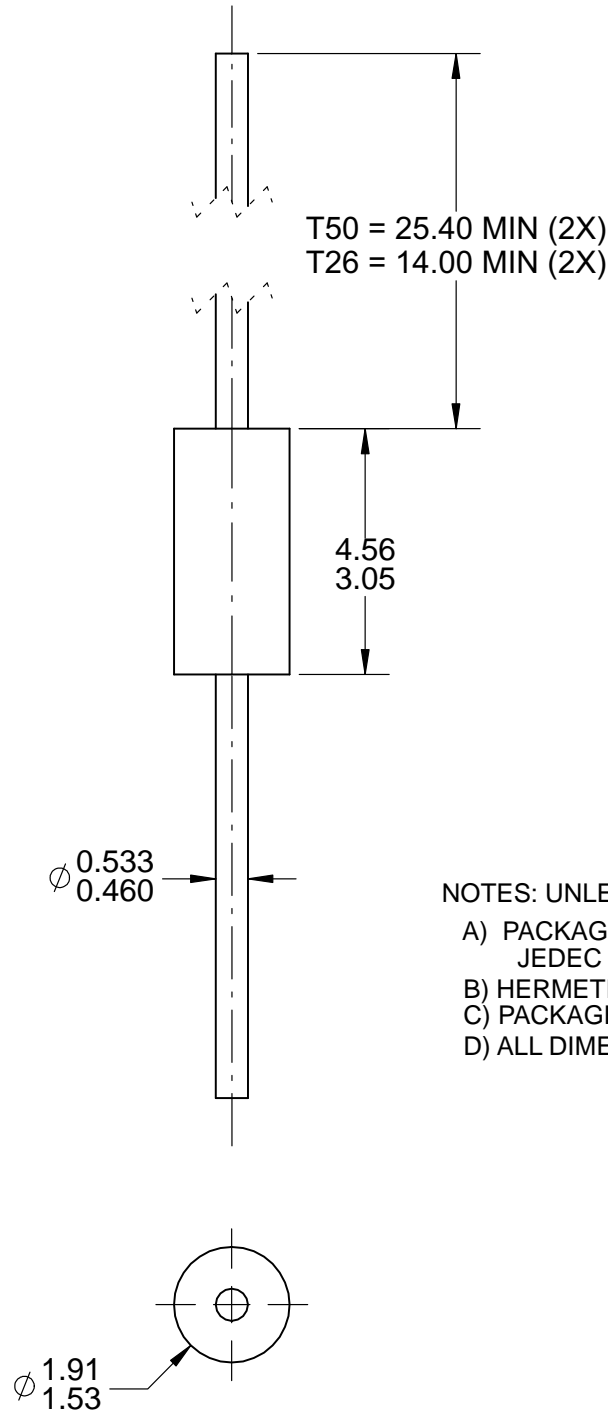


Figure 10. Power Derating Curve

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PACKAGE DIMENSIONS

AXIAL LEAD
CASE 017AG
ISSUE 0

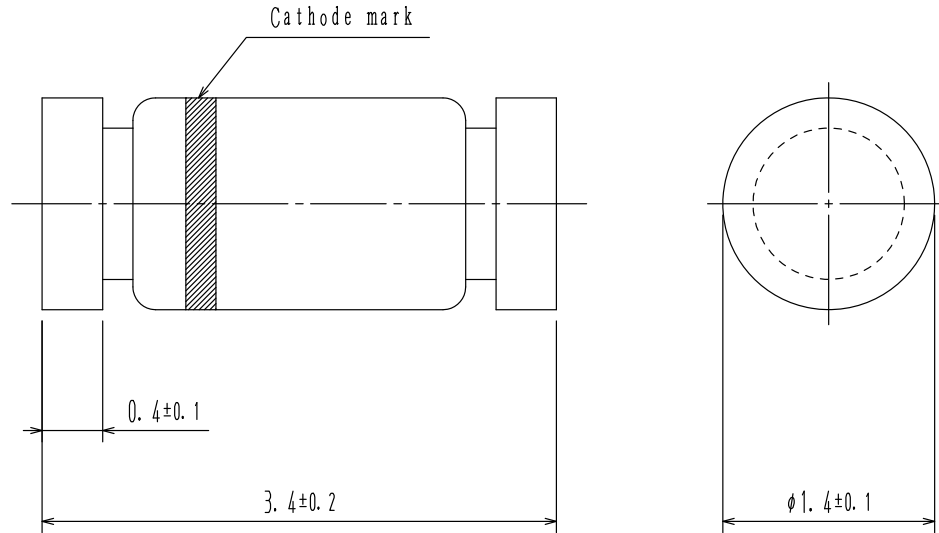



- NOTES: UNLESS OTHERWISE SPECIFIED
- A) PACKAGE STANDARD REFERENCE: JEDEC DO-204, VARIATION AH.
 - B) HERMETICALLY SEALED GLASS PACKAGE.
 - C) PACKAGE WEIGHT IS 0.137 GRAM.
 - D) ALL DIMENSIONS ARE IN MILLIMETERS.

1N91x, 1N4x48, FDLL914, FDLL4x48

PACKAGE DIMENSIONS

MiniMELF / SOD-80
CASE 100AD
ISSUE O



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