

1N4001, 1N4002, 1N4003, 1N4004, 1N4005, 1N4006, 1N4007

1N4004 and 1N4007 are Preferred Devices

Axial Lead Standard Recovery Rectifiers

This data sheet provides information on subminiature size, axial lead mounted rectifiers for general-purpose low-power applications.

Features

- Shipped in plastic bags, 1000 per bag
- Available Tape and Reeled, 5000 per reel, by adding a "RL" suffix to the part number
- Available in Fan-Fold Packaging, 3000 per box, by adding a "FF" suffix to the part number
- These devices are manufactured with a Pb-Free external lead finish only*

Mechanical Characteristics

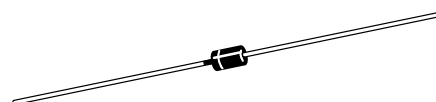
- Case: Epoxy, Molded
- Weight: 0.4 gram (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 220°C Max. for 10 Seconds, 1/16 in. from case
- Polarity: Cathode Indicated by Polarity Band



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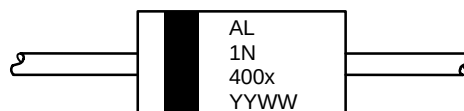
<http://onsemi.com>

LEAD MOUNTED RECTIFIERS 50–1000 VOLTS DIFFUSED JUNCTION



**CASE 59–10
AXIAL LEAD
PLASTIC**

MARKING DIAGRAM



AL = Assembly Location
1N400x = Device Number
x = 1, 2, 3, 4, 5, 6 or 7
YY = Year
WW = Work Week

ORDERING INFORMATION

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

Preferred devices are recommended choices for future use and best overall value.

*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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MAXIMUM RATINGS

Rating	Symbol	1N4001	1N4002	1N4003	1N4004	1N4005	1N4006	1N4007	Unit
*Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	50	100	200	400	600	800	1000	V
*Non-Repetitive Peak Reverse Voltage (halfwave, single phase, 60 Hz)	V_{RSM}	60	120	240	480	720	1000	1200	V
*RMS Reverse Voltage	$V_{R(RMS)}$	35	70	140	280	420	560	700	V
*Average Rectified Forward Current (single phase, resistive load, 60 Hz, $T_A = 75^\circ\text{C}$)	I_O	1.0							A
*Non-Repetitive Peak Surge Current (surge applied at rated load conditions)	I_{FSM}	30 (for 1 cycle)							A
Operating and Storage Junction Temperature Range	T_J T_{stg}	-65 to +175							$^\circ\text{C}$

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

ELECTRICAL CHARACTERISTICS*

Rating	Symbol	Typ	Max	Unit
Maximum Instantaneous Forward Voltage Drop, ($I_F = 1.0$ Amp, $T_J = 25^\circ\text{C}$)	V_F	0.93	1.1	V
Maximum Full-Cycle Average Forward Voltage Drop, ($I_O = 1.0$ Amp, $T_L = 75^\circ\text{C}$, 1 inch leads)	$V_{F(AV)}$	–	0.8	V
Maximum Reverse Current (rated DC voltage) ($T_J = 25^\circ\text{C}$) ($T_J = 100^\circ\text{C}$)	I_R	0.05 1.0	10 50	μA
Maximum Full-Cycle Average Reverse Current, ($I_O = 1.0$ Amp, $T_L = 75^\circ\text{C}$, 1 inch leads)	$I_{R(AV)}$	–	30	μA

*Indicates JEDEC Registered Data

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ORDERING INFORMATION

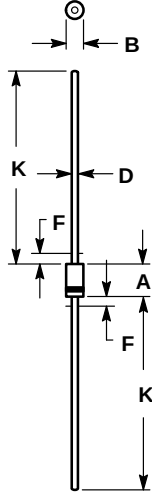
Device	Package	Shipping†
1N4001	Axial Lead	1000 Units/Bag
1N4001FF	Axial Lead	3000 Units/Box
1N4001RL	Axial Lead	5000/Tape & Reel
1N4002	Axial Lead	1000 Units/Bag
1N4002FF	Axial Lead	3000 Units/Box
1N4002RL	Axial Lead	5000/Tape & Reel
1N4003	Axial Lead	1000 Units/Bag
1N4003FF	Axial Lead	3000 Units/Box
1N4003RL	Axial Lead	5000/Tape & Reel
1N4004	Axial Lead	1000 Units/Bag
1N4004FF	Axial Lead	3000 Units/Box
1N4004RL	Axial Lead	5000/Tape & Reel
1N4005	Axial Lead	1000 Units/Bag
1N4005FF	Axial Lead	3000 Units/Box
1N4005RL	Axial Lead	5000/Tape & Reel
1N4006	Axial Lead	1000 Units/Bag
1N4006FF	Axial Lead	3000 Units/Box
1N4006RL	Axial Lead	5000/Tape & Reel
1N4007	Axial Lead	1000 Units/Bag
1N4007FF	Axial Lead	3000 Units/Box
1N4007RL	Axial Lead	5000/Tape & Reel

†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.

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PACKAGE DIMENSIONS

AXIAL LEAD CASE 59-10 ISSUE S



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. 59-04 OBSOLETE, NEW STANDARD 59-09.
4. 59-03 OBSOLETE, NEW STANDARD 59-10.
5. ALL RULES AND NOTES ASSOCIATED WITH JEDEC DO-41 OUTLINE SHALL APPLY
6. POLARITY DENOTED BY CATHODE BAND.
7. LEAD DIAMETER NOT CONTROLLED WITHIN F DIMENSION.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.161	0.205	4.10	5.20
B	0.079	0.106	2.00	2.70
D	0.028	0.034	0.71	0.86
F	---	0.050	---	1.27
K	1.000	---	25.40	---

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