

# 1N4933, 1N4934, 1N4935, 1N4936, 1N4937

1N4935 and 1N4937 are Preferred Devices

## Axial-Lead Fast-Recovery Rectifiers

Axial-lead, fast-recovery rectifiers are designed for special applications such as dc power supplies, inverters, converters, ultrasonic systems, choppers, low RF interference and free wheeling diodes. A complete line of fast recovery rectifiers having typical recovery time of 150 nanoseconds providing high efficiency at frequencies to 250 kHz.

### 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" from case
- Shipped in plastic bags, 1000 per bag.
- Available Tape and Reeled, 5000 per reel, by adding a "RL" suffix to the part number
- Polarity: Cathode Indicated by Polarity Band
- Marking: 1N4933, 1N4934, 1N4935, 1N4936, 1N4937

### MAXIMUM RATINGS

Please See the Table on the Following Page



ON Semiconductor™

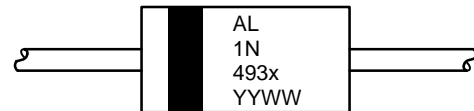
<http://onsemi.com>

## FAST RECOVERY RECTIFIERS 1.0 AMPERE 50-600 VOLTS



CASE 59-03  
AXIAL LEAD  
PLASTIC

### MARKING DIAGRAM



AL = Assembly Location  
1N493x = Device Number  
x = 3, 4, 5, 6 or 7  
YY = Year  
WW = Work Week

### ORDERING INFORMATION

Device	Package	Shipping
1N4933	Axial Lead	1000 Units/Bag
1N4933RL	Axial Lead	5000/Tape & Reel
1N4934	Axial Lead	1000 Units/Bag
1N4934RL	Axial Lead	5000/Tape & Reel
1N4935	Axial Lead	1000 Units/Bag
1N4935RL	Axial Lead	5000/Tape & Reel
1N4936	Axial Lead	1000 Units/Bag
1N4936RL	Axial Lead	5000/Tape & Reel
1N4937	Axial Lead	1000 Units/Bag
1N4937RL	Axial Lead	5000/Tape & Reel

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

# 1N4933, 1N4934, 1N4935, 1N4936, 1N4937

## MAXIMUM RATINGS (Note 1.)

Rating	Symbol	1N4933	1N4934	1N4935	1N4936	1N4937	Unit
*Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	50	100	200	400	600	Volts
*Non-Repetitive Peak Reverse Voltage RMS Reverse Voltage	$V_{RSM}$ $V_{R(RMS)}$	75 35	150 70	250 140	450 280	650 420	Volts
*Average Rectified Forward Current (Single phase, resistive load, $T_A = 75^\circ\text{C}$ ) (Note 2.)	$I_O$	1.0					Amp
*Non-Repetitive Peak Surge Current (Surge applied at rated load conditions)	$I_{FSM}$	30					Amps
Operating Junction Temperature Range Storage Temperature Range	$T_J$ $T_{stg}$	- 65 to +150 - 65 to +150					$^\circ\text{C}$

## THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient (Typical Printed Circuit Board Mounting)	$R_{\theta JC}$	65	$^\circ\text{C/W}$

## ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
Instantaneous Forward Voltage ( $I_F = 3.14$ Amp, $T_J = 125^\circ\text{C}$ )	$V_F$	-	1.0	1.2	Volts
Forward Voltage ( $I_F = 1.0$ Amp, $T_A = 25^\circ\text{C}$ )	$V_F$	-	1.0	1.1	Volts
*Reverse Current (Rated dc Voltage) $T_A = 25^\circ\text{C}$ $T_A = 100^\circ\text{C}$	$I_R$	- -	1.0 50	5.0 100	$\mu\text{A}$

## \*REVERSE RECOVERY CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Recovery Time ( $I_F = 1.0$ Amp to $V_R = 30$ Vdc) ( $I_{FM} = 15$ Amp, $di/dt = 10$ A/ $\mu\text{s}$ )	$t_{rr}$	- -	150 175	200 300	ns
Reverse Recovery Current ( $I_F = 1.0$ Amp to $V_R = 30$ Vdc)	$I_{RM(REC)}$	-	1.0	2.0	Amp

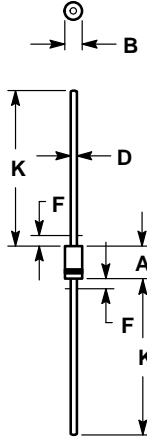
1. Ratings at  $25^\circ\text{C}$  ambient temperature unless otherwise specified.
2. Derate by 20% for capacitive loads.

\*Indicates JEDEC Registered Data for 1N4933 Series.

# 1N4933, 1N4934, 1N4935, 1N4936, 1N4937

## PACKAGE DIMENSIONS

### AXIAL LEAD CASE 59-03 ISSUE M



#### NOTES:

1. ALL RULES AND NOTES ASSOCIATED WITH JEDEC DO-41 OUTLINE SHALL APPLY.
2. POLARITY DENOTED BY CATHODE BAND.
3. LEAD DIAMETER NOT CONTROLLED WITHIN F DIMENSION.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.07	5.20	0.160	0.205
B	2.04	2.71	0.080	0.107
D	0.71	0.86	0.028	0.034
F	---	1.27	---	0.050
K	27.94	---	1.100	---

**ON Semiconductor** and  are trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer.

## PUBLICATION ORDERING INFORMATION

### **NORTH AMERICA Literature Fulfillment:**

Literature Distribution Center for ON Semiconductor  
P.O. Box 5163, Denver, Colorado 80217 USA  
**Phone:** 303-675-2175 or 800-344-3860 Toll Free USA/Canada  
**Fax:** 303-675-2176 or 800-344-3867 Toll Free USA/Canada  
**Email:** ONlit@hibbertco.com  
Fax Response Line: 303-675-2167 or 800-344-3810 Toll Free USA/Canada

**N. American Technical Support:** 800-282-9855 Toll Free USA/Canada

**EUROPE:** LDC for ON Semiconductor – European Support

**German Phone:** (+1) 303-308-7140 (Mon-Fri 2:30pm to 7:00pm CET)  
**Email:** ONlit-german@hibbertco.com  
**French Phone:** (+1) 303-308-7141 (Mon-Fri 2:00pm to 7:00pm CET)  
**Email:** ONlit-french@hibbertco.com  
**English Phone:** (+1) 303-308-7142 (Mon-Fri 12:00pm to 5:00pm GMT)  
**Email:** ONlit@hibbertco.com

**EUROPEAN TOLL-FREE ACCESS\*: 00-800-4422-3781**

\*Available from Germany, France, Italy, UK, Ireland

### **CENTRAL/SOUTH AMERICA:**

**Spanish Phone:** 303-308-7143 (Mon-Fri 8:00am to 5:00pm MST)  
**Email:** ONlit-spanish@hibbertco.com  
**Toll-Free from Mexico:** Dial 01-800-288-2872 for Access –  
then Dial 866-297-9322

**ASIA/PACIFIC:** LDC for ON Semiconductor – Asia Support

**Phone:** 303-675-2121 (Tue-Fri 9:00am to 1:00pm, Hong Kong Time)  
**Toll Free from Hong Kong & Singapore:**  
**001-800-4422-3781**

**Email:** ONlit-asia@hibbertco.com

**JAPAN:** ON Semiconductor, Japan Customer Focus Center

4-32-1 Nishi-Gotanda, Shinagawa-ku, Tokyo, Japan 141-0031  
**Phone:** 81-3-5740-2700  
**Email:** r14525@onsemi.com

**ON Semiconductor Website:** <http://onsemi.com>

For additional information, please contact your local Sales Representative.