

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.

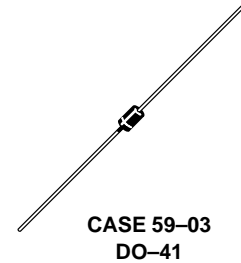
Mechanical Characteristics

- 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

1N4933 thru 1N4937

1N4935 and 1N4937 are
Motorola Preferred Devices

**FAST RECOVERY
RECTIFIERS
50-600 VOLTS
1.0 AMPERE**



MAXIMUM RATINGS (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, $T_A = 75^\circ\text{C}$) (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	$^\circ\text{C/W}$

* Indicates JEDEC Registered Data for 1N4933 Series.

(1) Ratings at 25°C ambient temperature unless otherwise specified.

(2) Derate by 20% for capacitive loads.

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

1N4933 thru 1N4937

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	μA

*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/ μs)	t_{rr}	— —	150 175	200 300	ns
Reverse Recovery Current ($I_F = 1.0$ Amp to $V_R = 30$ Vdc)	$I_{RM}(\text{REC})$	—	1.0	2.0	Amp

* Indicates JEDEC Registered Data for 1N4933 Series.

PACKAGE DIMENSIONS

NOTES:

- ALL RULES AND NOTES ASSOCIATED WITH JEDEC DO-41 OUTLINE SHALL APPLY.
- POLARITY DENOTED BY CATHODE BAND.
- 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	—

**CASE 59-03
(DO-41)
ISSUE M**

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