Axial-Lead Fast-Recovery Rectifiers

1N4933 thru 1N4937

1N4935 and 1N4937 are Motorola Preferred Devices

FAST RECOVERY RECTIFIERS 50–600 VOLTS 1.0 AMPERE

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

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CASE 59–03
DO–41

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°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					°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient (Typical Printed Circuit Board Mounting)	$R_{\theta JC}$	65	°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.

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ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
Instantaneous Forward Voltage (I_F = 3.14 Amp, T_J = 125°C)	v_F	—	1.0	1.2	Volts
Forward Voltage (I_F = 1.0 Amp, T_A = 25°C)	V_F	—	1.0	1.1	Volts
*Reverse Current (Rated dc Voltage) T_A = 25°C	I_R	—	1.0	5.0	μA
T_A = 100°C		—	50	100	

*REVERSE RECOVERY CHARACTERISTICS

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

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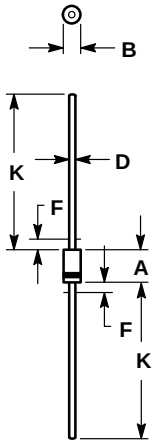
* Indicates JEDEC Registered Data for 1N4933 Series.

PACKAGE DIMENSIONS



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.

	MILLIMETERS		INCHES	
DIM	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	—

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(DO–41)
ISSUE M

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How to reach us:
USA / EUROPE / Locations Not Listed: Motorola Literature Distribution; P.O. Box 5405, Denver, Colorado 80217. 303–675–2140 or 1–800–441–2447

Mfax™: RMFAX0@email.sps.mot.com – TOUCHTONE 602–244–6609 – US & Canada ONLY 1–800–774–1848

INTERNET: http://motorola.com/sps

JAPAN: Nippon Motorola Ltd.: SPD, Strategic Planning Office, 4–32–1, Nishi–Gotanda, Shinagawa–ku, Tokyo 141, Japan. 81–3–5487–8488

ASIA / PACIFIC: Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park, 51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852–26629298

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