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.

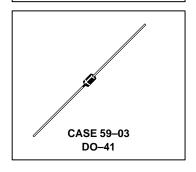
Mechanical Characteristics

- · 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 | VRSM VR(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) | lo | 1.0 | | | | | Amp |
| *Non-Repetitive Peak Surge Current (Surge applied at rated load conditions) | IFSM | 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 _θ 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.



1N4933 thru 1N4937

ELECTRICAL CHARACTERISTICS

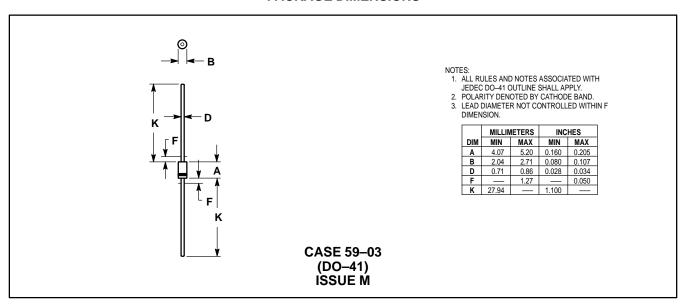
| Characteristic | Symbol | Min | Тур | Max | Unit |
|--|--------|--------|-----------|------------|-------|
| Instantaneous Forward Voltage (I _F = 3.14 Amp, T _J = 125°C) | ٧F | _ | 1.0 | 1.2 | Volts |
| Forward Voltage (I _F = 1.0 Amp, T _A = 25°C) | VF | _ | 1.0 | 1.1 | Volts |
| *Reverse Current (Rated dc Voltage) T _A = 25°C T _A = 100°C | IR | _ _ | 1.0 50 | 5.0 100 | μА |

*REVERSE RECOVERY CHARACTERISTICS

| Characteristic | Symbol | Min | Тур | Max | Unit |
|--|----------------------|-----|------------|------------|------|
| Reverse Recovery Time (IF = 1.0 Amp to V_R = 30 Vdc) (IFM = 15 Amp, di/dt = 10 A/ μ s) | t _{rr} | 1 1 | 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 |

^{*} Indicates JEDEC Registered Data for 1N4933 Series.

PACKAGE DIMENSIONS



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