

MR850, MR851, MR852, MR854, MR856

Axial Lead Fast Recovery Rectifiers

Axial lead mounted fast recovery power 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 100 nanoseconds providing high efficiency at frequencies to 250 kHz.

Features

- These are Pb-Free Devices*

Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 1.1 Gram (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Available Tape and Reel, 1200 per Reel, by adding a "RL" Suffix to the Part Number
- Polarity: Cathode Indicated by Polarity Band



ON Semiconductor®

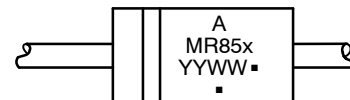
<http://onsemi.com>

**FAST RECOVERY
POWER RECTIFIERS
3.0 AMPERES, 50–600 VOLTS**



**AXIAL LEAD
CASE 267
STYLE 1**

MARKING DIAGRAM



A = Assembly Location
MR85x = Device Number
x = 0, 1, 2, 4 or 6
YY = Year
WW = Work Week
■ = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 3 of this data sheet.

*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 | MR850 | MR851 | MR852 | MR854 | MR856 | Unit |
|---|---------------------------------|------------------------------|-------|-------|-------|-------|------------------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | 50 | 100 | 200 | 400 | 600 | V |
| Non-Repetitive Peak Reverse Voltage | V_{RSM} | 75 | 150 | 250 | 450 | 650 | V |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 35 | 70 | 140 | 280 | 420 | V |
| Average Rectified Forward Current (Single phase resistive load, $T_A = 80^\circ\text{C}$) | I_O | 3.0 | | | | | A |
| Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions) | I_{FSM} | 100 (one cycle) | | | | | A |
| Operating and Storage Junction Temperature Range | T_J, T_{stg} | - 65 to +125 - 65 to +150 | | | | | $^\circ\text{C}$ |

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|--|-----------------|-----|--------------------|
| Thermal Resistance, Junction-to-Ambient (Note 1) | $R_{\theta JA}$ | 28 | $^\circ\text{C/W}$ |
| Thermal Resistance, Junction-to-Lead (Note 1) | $R_{\theta JL}$ | 5.5 | $^\circ\text{C/W}$ |

1. Mounted with minimum recommended pad size, PC board FR-4.

ELECTRICAL CHARACTERISTICS

| Characteristic | Symbol | Min | Typ | Max | Unit |
|--|--------|-----|------|---------------------------------------|---------------|
| Forward Voltage ($I_F = 3.0\text{ A}$, $T_J = 25^\circ\text{C}$) | V_F | - | 1.04 | 1.25 | V |
| Reverse Current (rated DC voltage) $T_J = 25^\circ\text{C}$ $T_J = 80^\circ\text{C}$ { MR850 MR851 MR852 MR854 MR856 | I_R | - | 2.0 | 10 150 150 200 250 300 | μA |

REVERSE RECOVERY CHARACTERISTICS

| Characteristic | Symbol | Min | Typ | Max | Unit |
|---|---------------|-----|------------|------------|------|
| Reverse Recovery Time ($I_F = 1.0\text{ A}$ to $V_R = 30\text{ Vdc}$) ($I_F = 15\text{ A}$, $di/dt = 10\text{ A}/\mu\text{s}$) | t_{rr} | - | 100 150 | 200 300 | ns |
| Reverse Recovery Current ($I_F = 1.0\text{ A}$ to $V_R = 30\text{ Vdc}$) | $I_{RM(REC)}$ | - | - | 2.0 | A |

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ORDERING INFORMATION

| Device | Package | Shipping† |
|----------|-------------|--------------------|
| MR850 | Axial Lead* | 500 Units / Box |
| MR851 | Axial Lead* | 500 Units / Box |
| MR851G | Axial Lead* | 500 Units / Box |
| MR851RL | Axial Lead* | 1200 / Tape & Reel |
| MR851RLG | Axial Lead* | 1200 / Tape & Reel |
| MR852 | Axial Lead* | 500 Units / Box |
| MR852G | Axial Lead* | 500 Units / Box |
| MR852RL | Axial Lead* | 1200 / Tape & Reel |
| MR852RLG | Axial Lead* | 1200 / Tape & Reel |
| MR854 | Axial Lead* | 500 Units / Box |
| MR854G | Axial Lead* | 500 Units / Box |
| MR854RL | Axial Lead* | 1200 / Tape & Reel |
| MR854RLG | Axial Lead* | 1200 / Tape & Reel |
| MR856 | Axial Lead* | 500 Units / Box |
| MR856G | Axial Lead* | 500 Units / Box |
| MR856RL | Axial Lead* | 1200 / Tape & Reel |
| MR856RLG | Axial Lead* | 1200 / Tape & Reel |

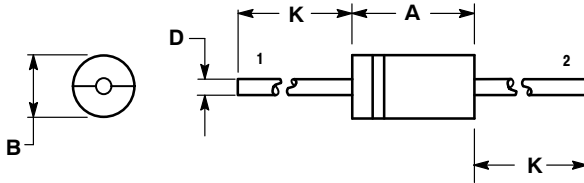
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

*These packages are inherently Pb-Free.

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PACKAGE DIMENSIONS

AXIAL LEAD
CASE 267-05
(DO-201AD)
ISSUE G




NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

| DIM | INCHES | | MILLIMETERS | |
|-----|--------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A | 0.287 | 0.374 | 7.30 | 9.50 |
| B | 0.189 | 0.209 | 4.80 | 5.30 |
| D | 0.047 | 0.051 | 1.20 | 1.30 |
| K | 1.000 | --- | 25.40 | --- |

STYLE 1:

- PIN 1. CATHODE (POLARITY BAND)
- ANODE

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