

# MR850, MR851, MR852, MR854, MR856

MR852 and MR856 are Preferred Devices

## 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.

### Mechanical Characteristics

- Case: Epoxy, Molded
- Weight: 1.1 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, 500 per box
- Available Tape and Reeled, 1200 per reel, by adding a "RL" suffix to the part number
- Polarity: Cathode Indicated by Polarity Band
- Marking: MR850, MR851, MR852, MR854, MR856

### MAXIMUM RATINGS

Please See the Table on the Following Page



ON Semiconductor™

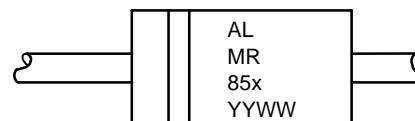
<http://onsemi.com>

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



AXIAL LEAD  
CASE 267-05  
STYLE 1

### MARKING DIAGRAM



AL = Assembly Location  
MR85x = Device Number  
x = 0, 1, 2, 4 or 6  
YY = Year  
WW = Work Week

### ORDERING INFORMATION

Device	Package	Shipping
MR850	Axial Lead	500 Units/Box
MR850RL	Axial Lead	1200/Tape & Reel
MR851	Axial Lead	500 Units/Box
MR851RL	Axial Lead	1200/Tape & Reel
MR852	Axial Lead	500 Units/Box
MR852RL	Axial Lead	1200/Tape & Reel
MR854	Axial Lead	500 Units/Box
MR854RL	Axial Lead	1200/Tape & Reel
MR856	Axial Lead	500 Units/Box
MR856RL	Axial Lead	1200/Tape & Reel

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

# MR850, MR851, MR852, MR854, MR856

## 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	Volts
Non-Repetitive Peak Reverse Voltage	$V_{RSM}$	75	150	250	450	650	Volts
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	140	280	420	Volts
Average Rectified Forward Current (Single phase resistive load, $T_A = 80^\circ\text{C}$ )	$I_O$	3.0					Amp
Non-Repetitive Peak Surge Current (surge applied at rated load conditions)	$I_{FSM}$	100 (one cycle)					Amp
Operating and Storage Junction Temperature Range	$T_J$ , $T_{stg}$	- 65 to +125 - 65 to +150					$^\circ\text{C}$

## THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient (Recommended Printed Circuit Board Mounting)	$R_{\theta JA}$	28	$^\circ\text{C}/\text{W}$

## ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit	
Forward Voltage ( $I_F = 3.0$ Amp, $T_J = 25^\circ\text{C}$ )	$V_F$	–	1.04	1.25	Volts	
Reverse Current (rated dc voltage) $T_J = 25^\circ\text{C}$	$I_R$	–	2.0	10	$\mu\text{A}$	
$T_J = 80^\circ\text{C}$ {		MR850	–	–		150
		MR851	–	60		150
		MR852	–	–		200
		MR854	–	–		250
		MR856	–	100		300

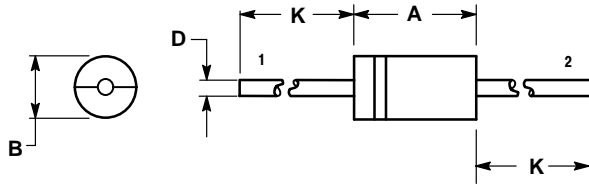
## REVERSE RECOVERY CHARACTERISTICS

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

# MR850, MR851, MR852, MR854, MR856

## PACKAGE DIMENSIONS

### AXIAL LEAD CASE 267-05 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:

1. PIN 1. CATHODE (POLARITY BAND)
2. ANODE

# MR850, MR851, MR852, MR854, MR856

**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.

This datasheet has been download from:

[www.datasheetcatalog.com](http://www.datasheetcatalog.com)

Datasheets for electronics components.