THE DATASHEET OF

MR850

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:

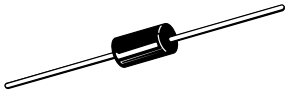
- Case: Epoxy, Molded
- Weight: 1.1 Gram (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Available Tape and Reel, 1200 per Reel, by adding a "RL" Suffix to the Part Number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

*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

ON Semiconductor®

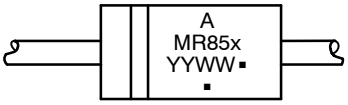
http://onsemi.com

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.

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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°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					°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	°C/W
Thermal Resistance, Junction−to−Lead (Note 1)	$R_{\theta JL}$	5.5	°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 A, T_J = 25°C)	V_F	−	1.04	1.25	V
Reverse Current (rated DC voltage) T_J = 25°C	I_R	−	2.0	10	μA
T_J = 80°C MR850		−	−	150	
T_J = 80°C MR851		−	60	150	
T_J = 80°C MR852		−	−	200	
T_J = 80°C MR854		−	−	250	
T_J = 80°C MR856		−	100	300	

REVERSE RECOVERY CHARACTERISTICS

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

ORDERING INFORMATION

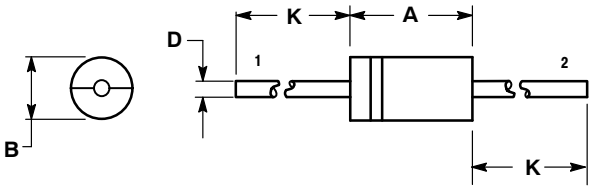
Device	Package	Shipping†
MR850	Axial Lead*	500 Units / Box
MR851	Axial Lead*	500 Units / Box
MR851G	Axial Lead*	500 Units / Box
MR851RL	Axial Lead*	1200 / Tape & Reel
MR851RLG	Axial Lead*	1200 / Tape & Reel
MR852	Axial Lead*	500 Units / Box
MR852G	Axial Lead*	500 Units / Box
MR852RL	Axial Lead*	1200 / 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.

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.

	INCHES		MILLIMETERS	
DIM	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)
2. ANODE

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MR850/D

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