MR850 - MR858

**FAST RECOVERY RECTIFIER DIODES**

**PRV :** 50 - 600 Volts  
**Io :** 3.0 Amperes

**FEATURES :**
- High current capability  
- High surge current capability  
- High reliability  
- Low reverse current  
- Low forward voltage drop  
- Fast switching for high efficiency

**MECHANICAL DATA :**
- Case : DO-201AD  Molded plastic  
- Epoxy : UL94V-O rate flame retardant  
- Lead : Axial lead solderable per MIL-STD-202, Method 208 guaranteed  
- Polarity : Color band denotes cathode end  
- Mounting position : Any  
- Weight : 1.21 grams

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**
Rating at 25 °C ambient temperature unless otherwise specified.  
Single phase, half wave, 60 Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

<table>
<thead>
<tr>
<th>RATING</th>
<th>SYMBOL</th>
<th>MR850</th>
<th>MR851</th>
<th>MR852</th>
<th>MR854</th>
<th>MR856</th>
<th>MR858</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Recurrent Peak Reverse Voltage</td>
<td>V_{R\text{RM}}</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>Volts</td>
</tr>
<tr>
<td>Maximum RMS Voltage</td>
<td>V_{\text{RMS}}</td>
<td>35</td>
<td>70</td>
<td>140</td>
<td>280</td>
<td>420</td>
<td>560</td>
<td>Volts</td>
</tr>
<tr>
<td>Maximum DC Blocking Voltage</td>
<td>V_{\text{DC}}</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>Volts</td>
</tr>
<tr>
<td>Maximum Average Forward Current 0.375&quot;(9.5mm) Lead Length ( \text{Ta} = 90 \degree \text{C} )</td>
<td>( I_{F\text{(AV)}} )</td>
<td>3.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Amps.</td>
</tr>
<tr>
<td>Peak Forward Surge Current, 8.3ms Single half sine wave Superimposed on rated load (JEDEC Method)</td>
<td>( I_{\text{FSM}} )</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Amps.</td>
</tr>
<tr>
<td>Maximum Peak Forward Voltage at IF = 3.0 Amps.</td>
<td>( V_{F} )</td>
<td>1.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Volts</td>
</tr>
<tr>
<td>Maximum DC Reverse Current ( \text{Ta} = 25 \degree \text{C} ) at Rated DC Blocking Voltage ( \text{Ta} = 100 \degree \text{C} )</td>
<td>( I_{R} )</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>( \mu \text{A} )</td>
</tr>
<tr>
<td>Maximum Reverse Recovery Time ( Note 1 )</td>
<td>( T_{\text{rr}} )</td>
<td>150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ns</td>
</tr>
<tr>
<td>Typical Junction Capacitance ( Note 2 )</td>
<td>( C_{J} )</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>( \text{pf} )</td>
</tr>
<tr>
<td>Junction Temperature Range</td>
<td>( T_{J} )</td>
<td>-65 to +150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature Range</td>
<td>( T_{\text{STG}} )</td>
<td>-65 to +150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>°C</td>
</tr>
</tbody>
</table>

**Notes :**
1. Reverse Recovery Test Conditions : \( I_{F} = 0.5 \text{ A}, I_{R} = 1.0 \text{ A}, I_{\text{rr}} = 0.25 \text{ A} \).
2. Measured at 1.0 MHz and applied reverse voltage of 4.0 \( V_{\text{DC}} \).

**UPDATE :** OCTOBER 6, 1999
RATING AND CHARACTERISTIC CURVES (MR850 - MR858)

FIG.1 - REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

NOTES: 1. Rise Time = 7 ns max., Input Impedance = 1 megaohm, 22 pF.
2. Rise time = 10 ns max., Source Impedance = 50 ohms.
3. All Resistors = Non-inductive Types.

FIG.2 - DERATING CURVE FOR OUTPUT

FIG.3 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

FIG.4 - TYPICAL FORWARD CHARACTERISTICS

FIG.5 - TYPICAL REVERSE CHARACTERISTICS