

# MR5000 - MR5010

**PRV : 50 - 1000 Volts**

**Io : 50 Amperes**

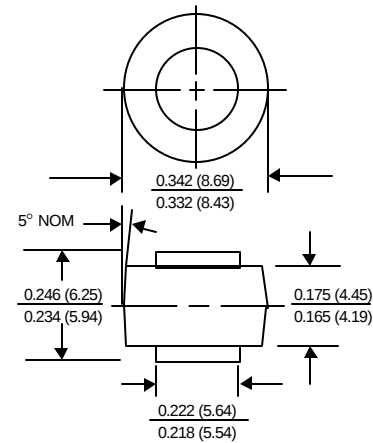
## FEATURES :

- \* High current capability
- \* High surge current capability
- \* High reliability
- \* Low reverse current
- \* Low forward voltage drop

## MECHANICAL DATA :

- \* Case : Molded plastic
- \* Epoxy : UL94V-O rate flame retardant
- \* Terminals : Terminal are readily solderable
- \* Polarity : Cathode polarity band
- \* Mounting position : Any
- \* Weight : 1.8 grams

# AUTOMOTIVE RECTIFIER DIODES



**Dimensions in inches and ( millimeter )**

## 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%.

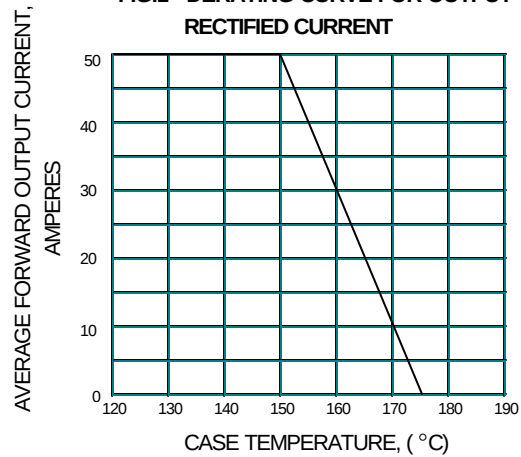
| RATING                                                                                              | SYMBOL          | MR 5000                                                                             | MR 5001                                                                             | MR 5002                                                                               | MR 5004                                                                               | MR 5006                                                                               | MR 5008                                                                               | MR 5010                                                                               | UNIT          |
|-----------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------|
| Maximum Repetitive Peak Reverse Voltage                                                             | $V_{RRM}$       | 50                                                                                  | 100                                                                                 | 200                                                                                   | 400                                                                                   | 600                                                                                   | 800                                                                                   | 1000                                                                                  | Volts         |
| Maximum RMS Voltage                                                                                 | $V_{RMS}$       | 35                                                                                  | 70                                                                                  | 140                                                                                   | 280                                                                                   | 420                                                                                   | 560                                                                                   | 700                                                                                   | Volts         |
| Maximum DC Blocking Voltage                                                                         | $V_{DC}$        | 50                                                                                  | 100                                                                                 | 200                                                                                   | 400                                                                                   | 600                                                                                   | 800                                                                                   | 1000                                                                                  | Volts         |
| Average Rectified Forward Current $T_c = 150^{\circ}C$                                              | $I_{F(AV)}$     | 50                                                                                  |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       | Amps.         |
| Peak Forward Surge Current Single half sine wave superimposed on rated load (JEDEC Method)          | $I_{FSM}$       | 500                                                                                 |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       | Amps.         |
| Maximum Forward Voltage at $I_F = 50$ Amps.                                                         | $V_F$           | 1.1                                                                                 |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       | Volts         |
| Maximum DC Reverse Current $T_a = 25^{\circ}C$<br>at rated DC Blocking Voltage $T_a = 100^{\circ}C$ | $I_R$           | 5.0                                                                                 |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       | $\mu A$       |
|                                                                                                     | $I_{R(H)}$      | 1.0                                                                                 |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       | mA            |
| Thermal Resistance (Note 1)                                                                         | $R_{\theta JC}$ | 0.8                                                                                 |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       | $^{\circ}C/W$ |
| Junction Temperature Range                                                                          | $T_J$           | - 65 to + 175                                                                       |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       | $^{\circ}C$   |
| Storage Temperature Range                                                                           | $T_{STG}$       | - 65 to + 175                                                                       |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       | $^{\circ}C$   |
| Marking Code                                                                                        |                 |  |  |  |  |  |  |  |               |

**Note :** (1) Thermal resistance from junction to case. Single side cooled.

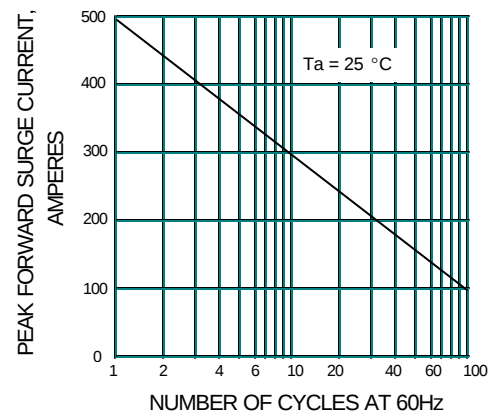
**UPDATE : OCTOBER 19, 2000**

## RATING AND CHARACTERISTIC CURVES ( MR5000 - MR5010 )

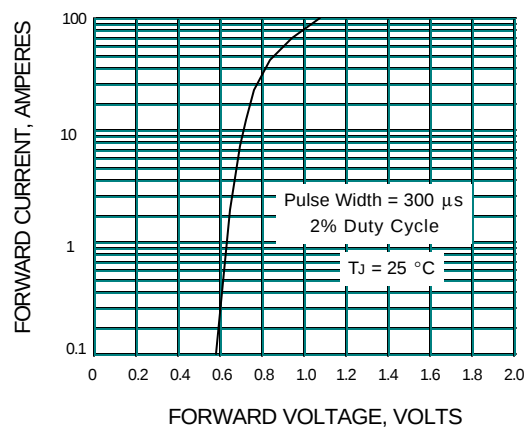
**FIG.1 - DERATING CURVE FOR OUTPUT RECTIFIED CURRENT**



**FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**



**FIG.3 - TYPICAL FORWARD CHARACTERISTICS**



**FIG.4 - TYPICAL REVERSE CHARACTERISTICS**

