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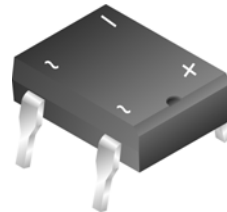


May 2015

# DF005M - DF10M Bridge Rectifiers

## Features

- Surge Overload Rating: 50 Amperes Peak
- Glass Passivated Junction.
- Low Leakage.
- UL Certified, UL #E258596.



DIP

## Ordering Information

| Part Number | Top Mark | Package | Packing Method |
|-------------|----------|---------|----------------|
| DF005M      | DF005M   | MDIP 4L | Rail           |
| DF01M       | DF01M    | MDIP 4L | Rail           |
| DF02M       | DF02M    | MDIP 4L | Rail           |
| DF04M       | DF04M    | MDIP 4L | Rail           |
| DF06M       | DF06M    | MDIP 4L | Rail           |
| DF08M       | DF08M    | MDIP 4L | Rail           |
| DF10M       | DF10M    | MDIP 4L | Rail           |

## Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

| Symbol      | Parameter   | Value       |       |       |       |       |       |       | Unit             |
|-------------|---|-------------|-------|-------|-------|-------|-------|-------|------------------|
|             |   | DF005M      | DF01M | DF02M | DF04M | DF06M | DF08M | DF10M |                  |
| $V_{RRM}$   | Maximum Repetitive Reverse Voltage  | 50          | 100   | 200   | 400   | 600   | 800   | 1000  | V                |
| $V_{RMS}$   | Maximum RMS Bridge Input Voltage  | 35          | 70    | 140   | 280   | 420   | 560   | 700   | V                |
| $V_{DC}$    | DC Reverse Voltage at Rated $I_R$   | 50          | 100   | 200   | 400   | 600   | 800   | 1000  | V                |
| $I_{F(AV)}$ | Average Rectified Forward Current at $T_A = 40^\circ\text{C}$             | 1.5         |       |       |       |       |       |       | A                |
| $I_{FSM}$   | Non-Repetitive Peak Forward Surge Current<br>8.3 ms Single Half-Sine Wave | 50          |       |       |       |       |       |       | A                |
| $T_{STG}$   | Storage Temperature Range   | -55 to +150 |       |       |       |       |       |       | $^\circ\text{C}$ |
| $T_J$       | Operating Junction Temperature  | -55 to +150 |       |       |       |       |       |       | $^\circ\text{C}$ |

## Thermal Characteristics

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

| Symbol          | Parameter  | Value | Unit                      |
|-----------------|--|-------|---------------------------|
| $P_D$           | Power Dissipation  | 3.1   | W                         |
| $R_{\theta JA}$ | Thermal Resistance, Junction-to-Ambient <sup>(1)</sup> , per Leg | 40    | $^\circ\text{C}/\text{W}$ |

### Note:

1. Device mounted on PCB with 0.5 inch  $\times$  0.5 inch (13 mm  $\times$  13 mm).

## Electrical Characteristics

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

| Symbol | Parameter                                   | Conditions                                     | Min. | Typ. | Max. | Unit                 |
|--------|---|--|------|------|------|----------------------|
| $V_F$  | Forward Voltage, per Element                | $I_F = 1.0\text{ A}$                           |      |      | 1.1  | V                    |
| $I_R$  | Reverse Current, per Element at Rated $V_R$ | $T_A = 25^\circ\text{C}$                       |      |      | 5.0  | $\mu\text{A}$        |
|        |   | $T_A = 125^\circ\text{C}$                      |      |      | 500  |                      |
| $I^2t$ | Rating for Fusing ( $t < 8.35\text{ ms}$ )  |  |      |      | 10   | $\text{A}^2\text{s}$ |
| $C_J$  | Typical Capacitance, per Leg                | $V_R = 4.0\text{ V}$ ,<br>$f = 1.0\text{ MHz}$ |      | 25   |      | pF                   |

## Typical Performance Characteristics



Figure 1. Non-Repetitive Surge Current

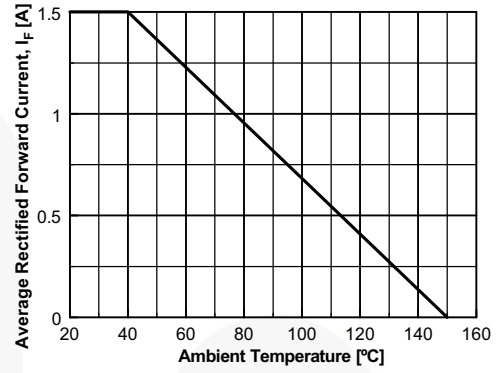


Figure 2. Forward Current Derating Curve

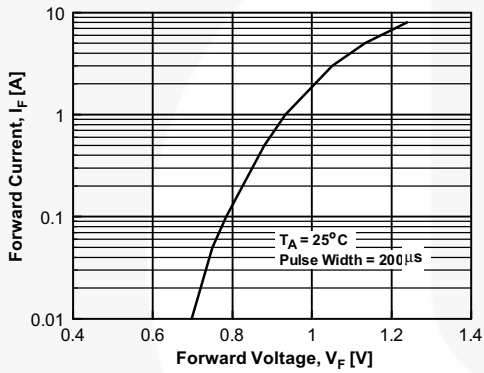


Figure 3. Forward Voltage Characteristics

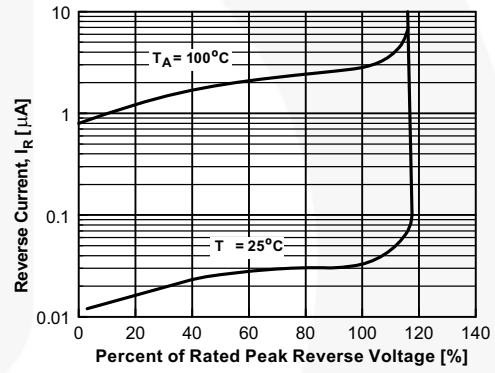
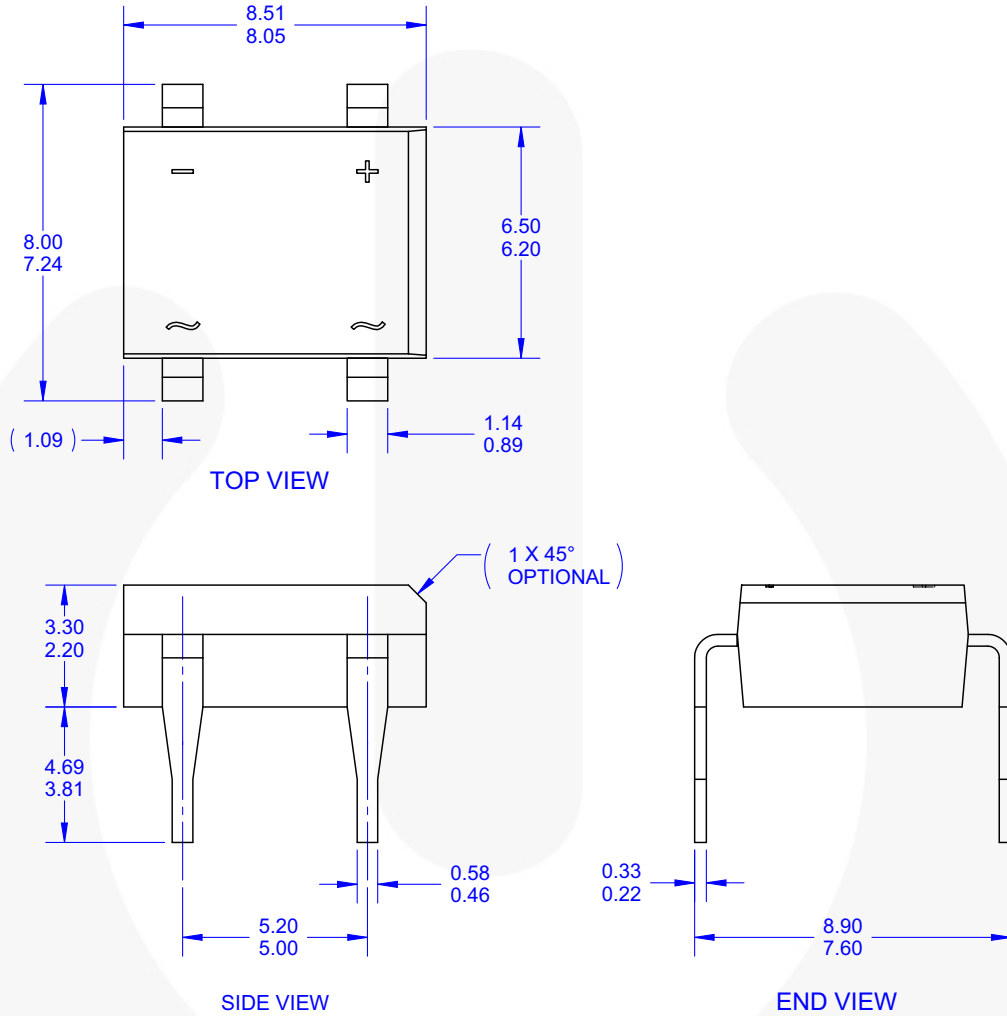


Figure 4. Reverse Current vs. Reverse Voltage

Physical Dimensions



NOTES:

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- B. ALL DIMENSIONS ARE IN MILLIMETERS.
- C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.
- G. DRAWING FILE NAME: MKT-N04DREV1

Figure 5. 4-Lead, DIP, 6.5 MM WIDE



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