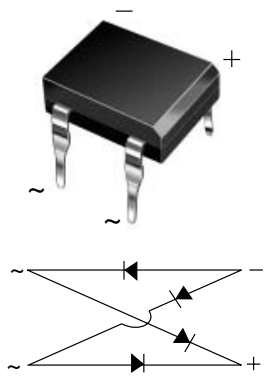
# Miniature Glass Passivated Single-Phase Bridge Rectifiers




**Case Style DFM**

## FEATURES

- UL recognition, file number E54214
- Ideal for printed circuit boards
- Applicable for automative insertion
- High surge current capability
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

RoHS COMPLIANT

## TYPICAL APPLICATIONS

General purpose use in ac-to-dc bridge full wave rectification for SMPS, lighting ballaster, adapter, battery charger, home appliances, office equipment, and telecommunication applications.

| PRIMARY CHARACTERISTICS | |
|---|---|
| $I_{F(AV)}$ | 1 A |
| $V_{RRM}$ | 50 V to 1000 V |
| $I_{FSM}$ | 50 A |
| $I_R$ | 5 µA |
| $V_F$ | 1.1 V |
| $T_J$ max. | 150 °C |

## MECHANICAL DATA

**Case:** DFM

Epoxy meets UL 94V-0 flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test

**Polarity:** As marked on body

**MAXIMUM RATINGS** ($T_A$ = 25 °C unless otherwise noted)

| PARAMETER | SYMBOL | DF005M | DF01M | DF02M | DF04M | DF06M | DF08M | DF10M | UNIT |
|---|---|---|---|---|---|---|---|---|---|
| Device marking code | | DF005 | DF01 | DF02 | DF04 | DF06 | DF08 | DF10 | |
| Maximum repetitive peak reverse voltage | $V_{RRM}$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS voltage | $V_{RMS}$ | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC blocking voltage | $V_{DC}$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum average forward output rectified current at $T_A$ = 40 °C | $I_{F(AV)}$ | 1.0 | | | | | | | A |
| Peak forward surge current single sine-wave superimposed on rated load | $I_{FSM}$ | 50 | | | | | | | A |
| Rating for fusing (t < 8.3 ms) | $I^2t$ | 10 | | | | | | | $A^2s$ |
| Operating junction and storage temperature range | $T_J$, $T_{STG}$ | - 55 to + 150 | | | | | | | °C |

| ELECTRICAL CHARACTERISTICS ($T_A$ = 25 °C unless otherwise noted) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITIONS** | **SYMBOL** | **DF005M** | **DF01M** | **DF02M** | **DF04M** | **DF06M** | **DF08M** | **DF10M** | **UNIT** |
| Maximum instantaneous forward voltage drop per diode | 1.0 A | $V_F$ | 1.1 | | | | | | | V |
| Maximum reverse current at rated DC blocking voltage per diode | $T_A$ = 25 °C<br>$T_A$ = 125 °C | $I_R$ | 5.0<br>500 | | | | | | | µA |
| Typical junction capacitance per diode | 4.0 V, 1 MHz | $C_J$ | 25 | | | | | | | pF |

| THERMAL CHARACTERISTICS ($T_A$ = 25 °C unless otherwise noted) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **PARAMETER** | **SYMBOL** | **DF005M** | **DF01M** | **DF02M** | **DF04M** | **DF06M** | **DF08M** | **DF10M** | **UNIT** |
| Typical thermal resistance (1) | $R_{\theta JA}$<br>$R_{\theta JL}$ | 40<br>15 | | | | | | | °C/W |

**Note:**

(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.5 x 0.5" (13 x 13 mm) copper pads

| ORDERING INFORMATION (Example) | | | | |
|---|---|---|---|---|
| **PREFERRED P/N** | **UNIT WEIGHT (g)** | **PREFERRED PACKAGE CODE** | **BASE QUANTITY** | **DELIVERY MODE** |
| DF06M-E3/45 | 0.416 | 45 | 50 | Tube |

## RATINGS AND CHARACTERISTICS CURVES

($T_A$ = 25 °C unless otherwise noted)

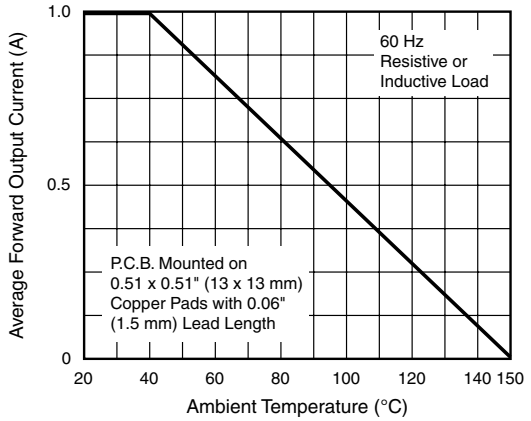



Figure 1. Derating Curve Output Rectified Current

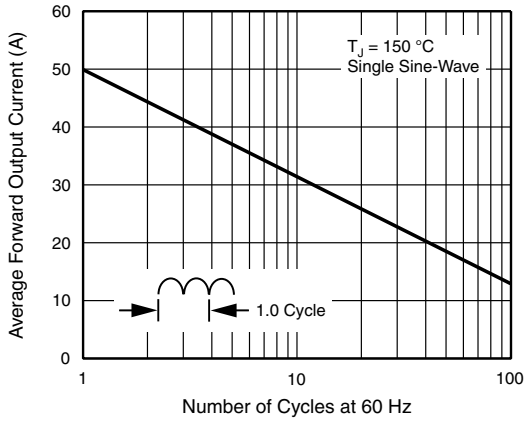



Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode



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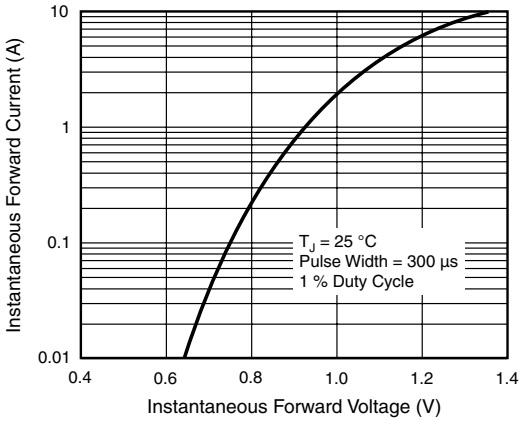



Figure 3. Typical Forward Characteristics Per Diode

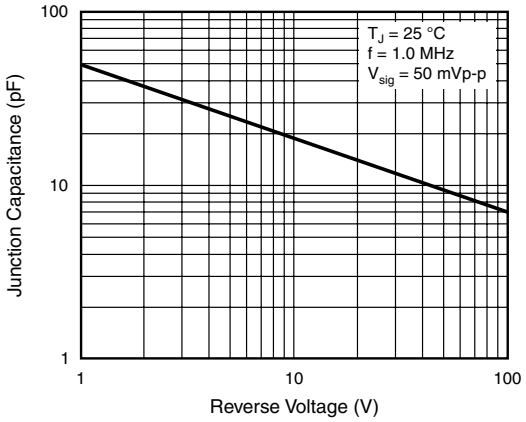



Figure 5. Typical Junction Capacitance Per Diode

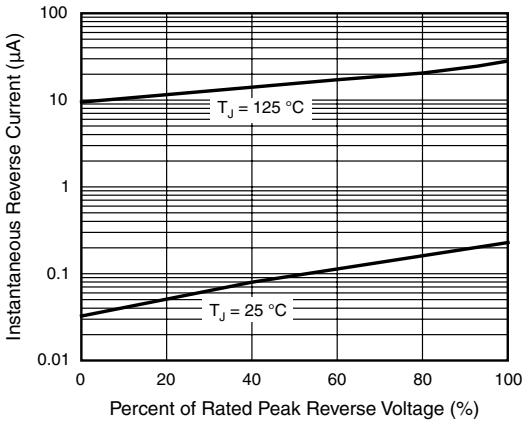



Figure 4. Typical Reverse Leakage Characteristics Per Diode

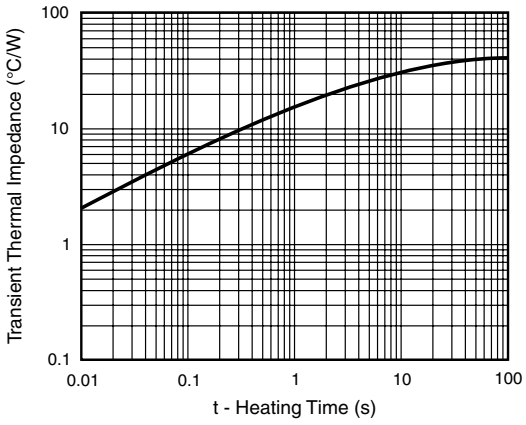
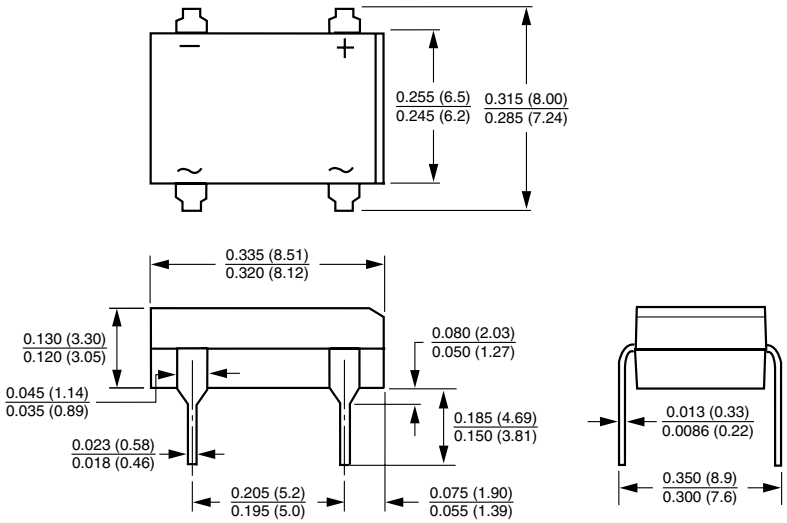



Figure 6. Typical Transient Thermal Impedance

## **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**Case Style DFM**



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