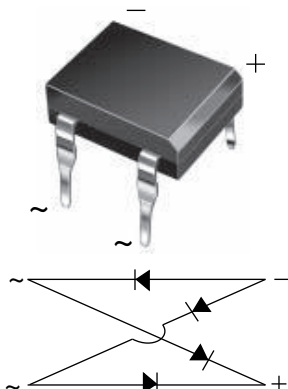




## Miniature Glass Passivated Single-Phase Bridge Rectifiers



Case Style DFM

## PRIMARY CHARACTERISTICS

|                        |                                                 |
|------------------------|-------------------------------------------------|
| Package                | DFM                                             |
| $I_{F(AV)}$            | 1 A                                             |
| $V_{RRM}$              | 50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V |
| $I_{FSM}$              | 50 A                                            |
| $I_R$                  | 5 $\mu$ A                                       |
| $V_F$ at $I_F = 1.0$ A | 1.1 V                                           |
| $T_J$ max.             | 150 °C                                          |
| Diode variations       | Quad                                            |

## FEATURES

- UL recognition, file number E54214
- Ideal for printed circuit boards
- Applicable for automotive insertion
- High surge current capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

RoHS  
COMPLIANT

## TYPICAL APPLICATIONS

General purpose use in AC/DC bridge full wave rectification for SMPS, lighting ballaster, adapter, battery charger, home appliances, office equipment, and telecommunication applications.

## MECHANICAL DATA

Case: DFM

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix 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 <sup>2</sup> s |
| 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 <sub>F</sub> | 1.1    |       |       |       |       |       |       | V    |
| Maximum reverse current at rated DC blocking voltage per diode | T <sub>A</sub> = 25 °C  | I <sub>R</sub> | 5.0    |       |       |       |       |       |       | μA   |
|                                                                | T <sub>A</sub> = 125 °C |                | 500    |       |       |       |       |       |       |      |
| Typical junction capacitance per diode                         | 4.0 V, 1 MHz            | C <sub>J</sub> | 25     |       |       |       |       |       |       | pF   |



| THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                  |        |       |       |       |       |       |       |      |
|-------------------------------------------------------------------------|------------------|--------|-------|-------|-------|-------|-------|-------|------|
| PARAMETER                                                               | SYMBOL           | DF005M | DF01M | DF02M | DF04M | DF06M | DF08M | DF10M | UNIT |
| Typical thermal resistance <sup>(1)</sup>                               | R <sub>θJA</sub> | 40     |       |       |       |       |       |       | °C/W |
|                                                                         | R <sub>θJL</sub> | 15     |       |       |       |       |       |       |      |

**Note**

<sup>(1)</sup> Thermal resistance from junction to ambient and from junction to lead mounted on PCB with 0.5" x 0.5" (13 mm 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          |

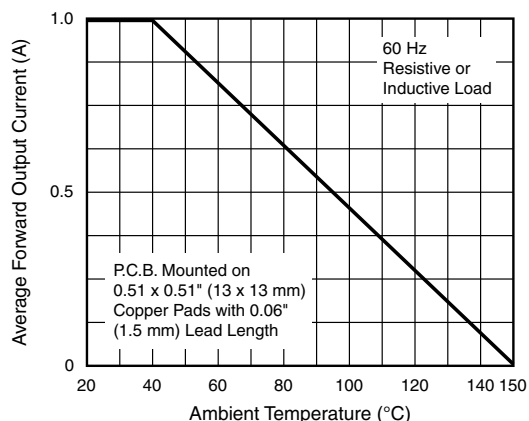
**RATINGS AND CHARACTERISTICS CURVES ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)**


Fig. 1 - Derating Curve Output Rectified Current

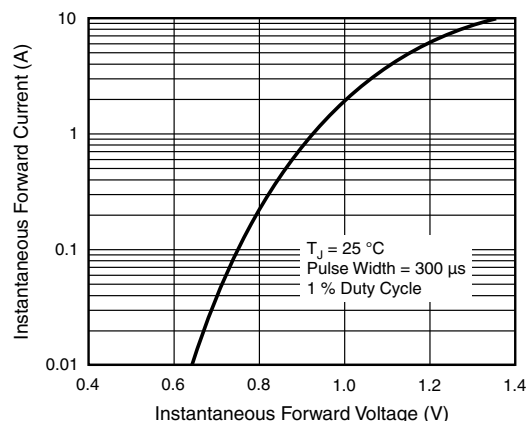


Fig. 3 - Typical Forward Characteristics Per Diode

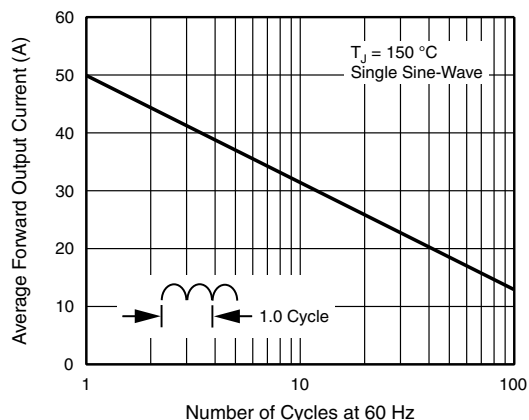


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

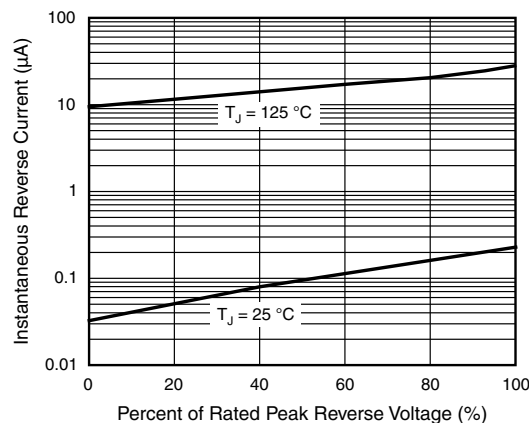


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

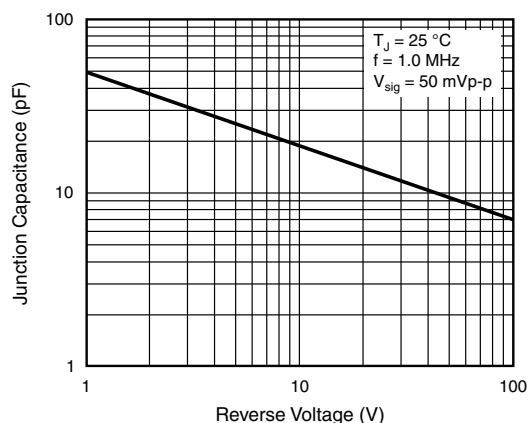


Fig. 5 - Typical Junction Capacitance Per Diode

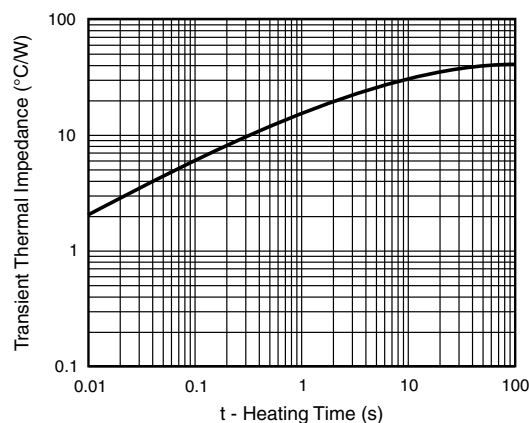
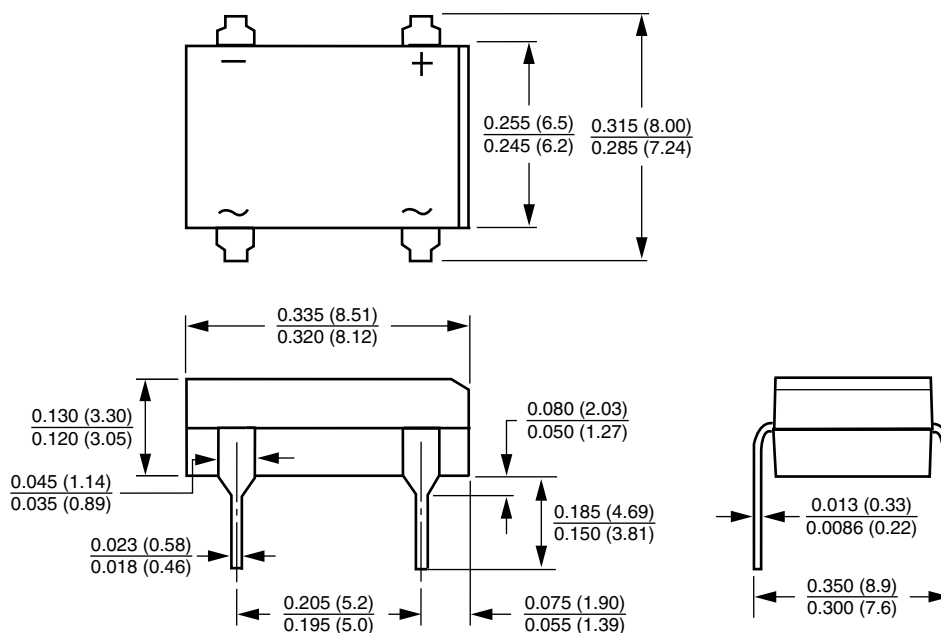


Fig. 6 - Typical Transient Thermal Impedance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### Case Style DFM





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