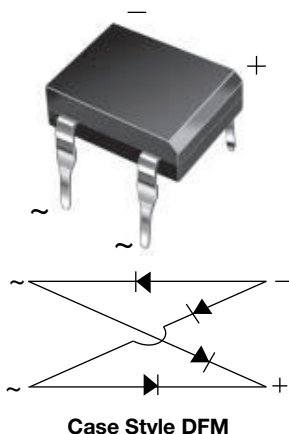




## Miniature Glass Passivated Single-Phase Bridge Rectifiers



### FEATURES

- UL recognition, file number E54214
- Ideal for printed circuit boards
- Applicable for automated 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)



### 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

### LINKS TO ADDITIONAL RESOURCES



| PRIMARY CHARACTERISTICS |                                                 |
|-------------------------|-------------------------------------------------|
| $I_{F(AV)}$             | 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                                          |
| Package                 | DFM                                             |
| Circuit configuration   | Quad                                            |

| 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** ( $T_A = 25\text{ }^{\circ}\text{C}$  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** ( $T_A = 25\text{ }^{\circ}\text{C}$  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)

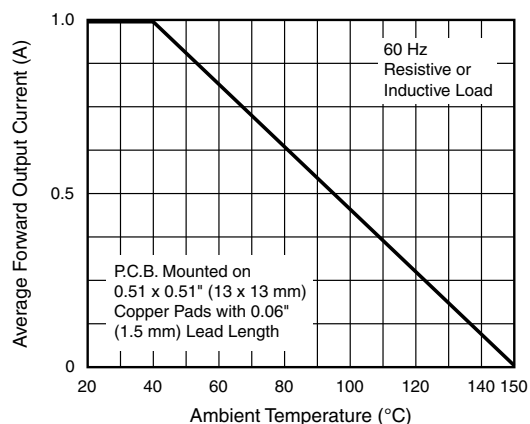


Fig. 1 - Derating Curve Output Rectified Current

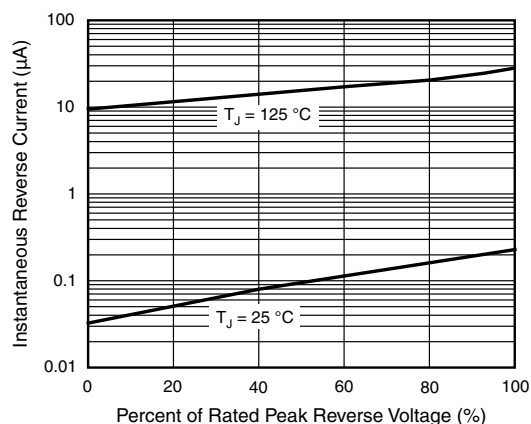


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

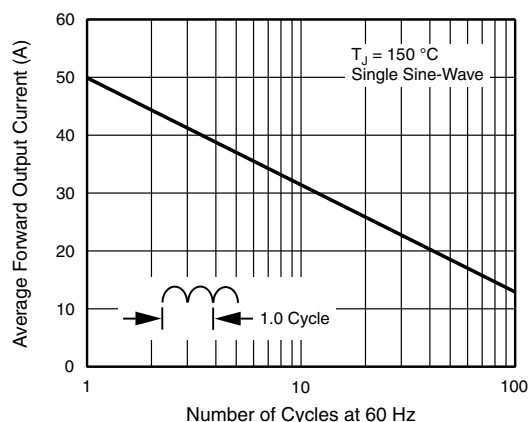


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

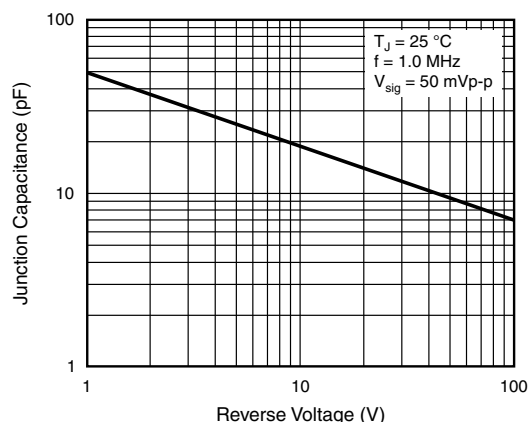


Fig. 5 - Typical Junction Capacitance Per Diode

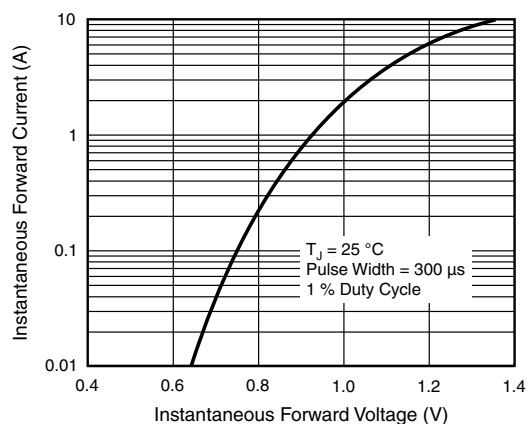


Fig. 3 - Typical Forward Characteristics Per Diode

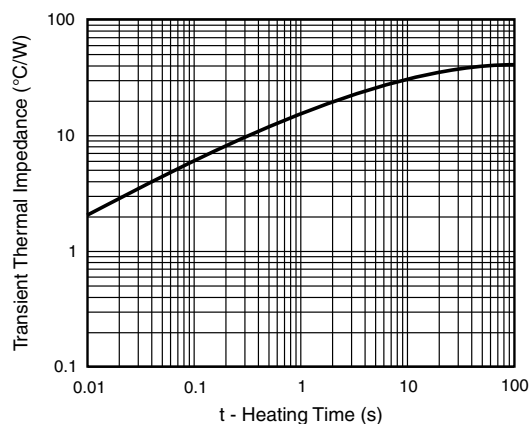
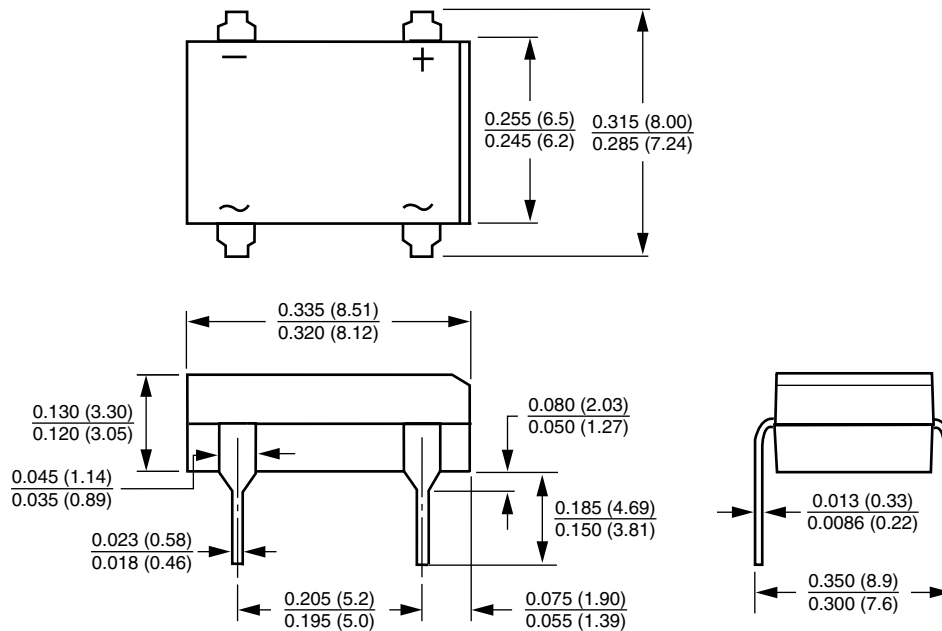


Fig. 6 - Typical Transient Thermal Impedance



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

**Case Style DFM**





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