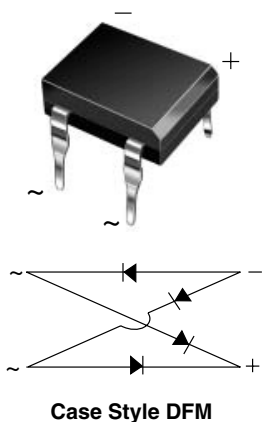


Miniature Glass Passivated Single-Phase Bridge Rectifiers



FEATURES

- UL recognition, file number E54214
- Ideal for printed circuit boards
- Applicable for automotive 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} | 30 A |
| I_R | 5 μ A |
| 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 | DF005MA | DF01MA | DF02MA | DF04MA | DF06MA | DF08MA | DF10MA | UNIT |
|--|----------------|---------------|--------|--------|--------|--------|--------|--------|------------------|
| Device marking code | | DFA005 | DFA01 | DFA02 | DFA04 | DFA06 | DFA08 | DFA10 | |
| 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} | 30 | | | | | | | A |
| Rating for fusing ($t < 8.3$ ms) | I^2t | 4.5 | | | | | | | A ² 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 | DF005MA | DF01MA | DF02MA | DF04MA | DF06MA | DF08MA | DF10MA | 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 | $T_A = 25\text{ }^{\circ}\text{C}$ $T_A = 125\text{ }^{\circ}\text{C}$ | I_R | 5.0 500 | | | | | | | μA |
| Typical junction capacitance per diode | 4.0 V, 1 MHz | C_J | 25 | | | | | | | pF |

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

| PARAMETER | SYMBOL | DF005MA | DF01MA | DF02MA | DF04MA | DF06MA | DF08MA | DF10MA | UNIT |
|---|------------------|---------|--------|--------|--------|--------|--------|--------|------|
| Typical thermal resistance ⁽¹⁾ | R _{θJA} | 40 | | | | | | | °C/W |
| | R _{θJL} | 15 | | | | | | | |

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 |
|---------------|-----------------|------------------------|---------------|---------------|
| DF06MA-E3/45 | 0.403 | 45 | 50 | Tube |

RATINGS AND CHARACTERISTICS CURVES

($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

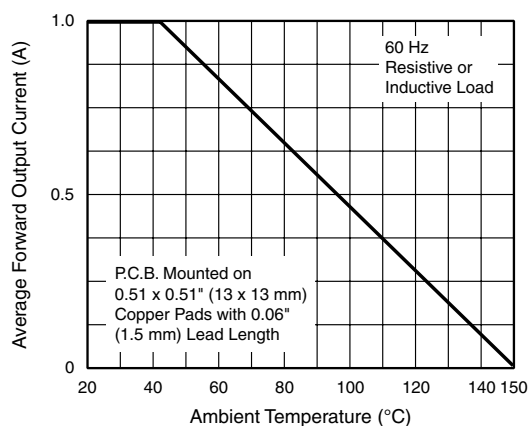


Figure 1. Derating Curve Output Rectified Current

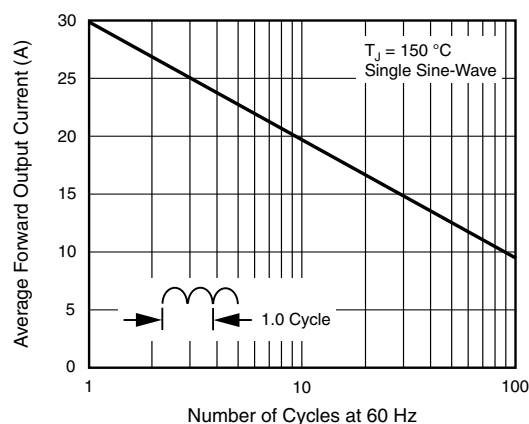


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

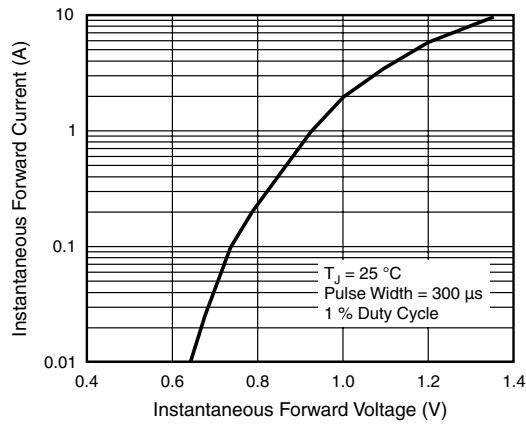


Figure 3. Typical Forward Characteristics Per Diode

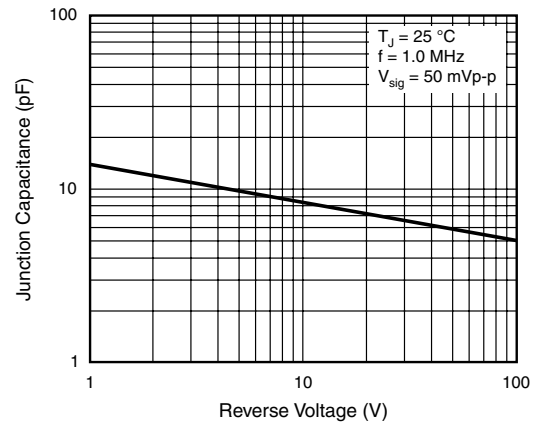


Figure 5. Typical Junction Capacitance Per Diode

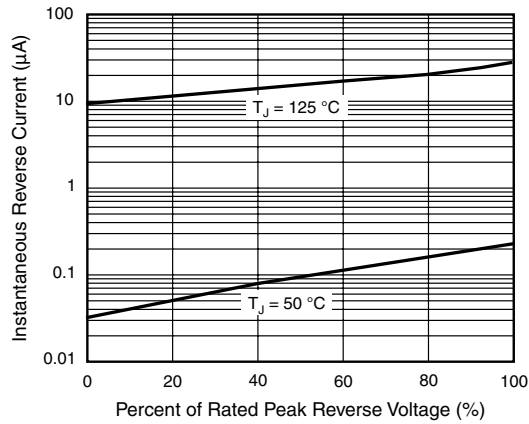


Figure 4. Typical Reverse Leakage Characteristics Per Diode

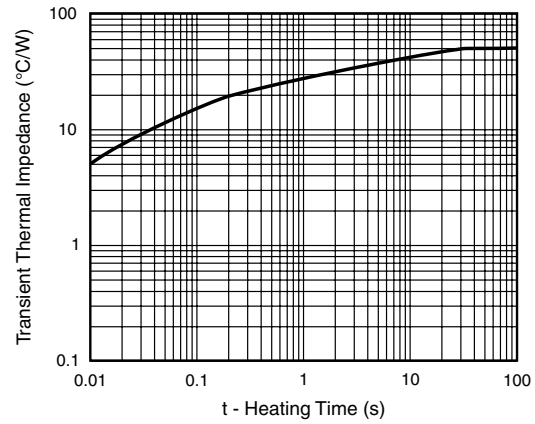
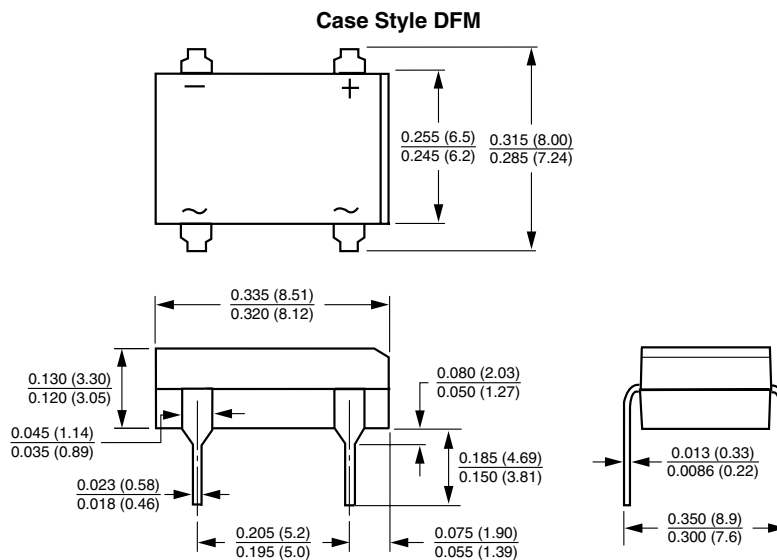


Figure 6. Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9