# W005G, W01G, W02G, W04G, W06G, W08G, W10G

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Vishay General Semiconductor

# **Glass Passivated Single-Phase Bridge Rectifier**



### **LINKS TO ADDITIONAL RESOURCES**



| PRIMARY CHARACTERISTICS                  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|
| I <sub>F(AV)</sub>                       | 1.5 A  |  |  |  |  |  |  |
| V <sub>RRM</sub>                         | 50 V, 100 V, 200 V, 400 V, 600 V,<br>800 V, 1000 V |  |  |  |  |  |  |
| I <sub>FSM</sub>                         | 50 A   |  |  |  |  |  |  |
| I <sub>R</sub>                           | 5 μΑ   |  |  |  |  |  |  |
| V <sub>F</sub> at I <sub>F</sub> = 1.0 A | 1.0 V  |  |  |  |  |  |  |
| T <sub>J</sub> max.                      | 150 °C   |  |  |  |  |  |  |
| Package                                  | WOG  |  |  |  |  |  |  |
| Circuit configuration                    | Quad   |  |  |  |  |  |  |

#### **FEATURES**

- UL recognition, file number E54214
- Ideal for printed circuit boards
- Typical I<sub>R</sub> less than 0.1 μA
- · High case dielectric strength
- · High surge current capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see <a href="https://www.vishay.com/doc?99912">www.vishay.com/doc?99912</a>

#### **TYPICAL APPLICATIONS**

General purpose use in AC/DC bridge full wave rectification for power supply, adapter, charger, lighting ballaster on consumers, and home appliances applications.

#### **MECHANICAL DATA**

Case: WOG

Molding compound meets UL 94 V-0 flammability rating

Base P/N-E4 - RoHS-compliant, commercial grade

Terminals: silver plated leads, solderable per

J-STD-002 and JESD 22-B102

Polarity: as marked on body

| MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)                           |                                   |             |      |      |      |                  |      |      |      |
|---|-----------------------------------|-------------|------|------|------|------------------|------|------|------|
| PARAMETER   | SYMBOL                            | W005G       | W01G | W02G | W04G | W06G             | W08G | W10G | UNIT |
| Maximum repetitive peak reverse voltage   | $V_{RRM}$                         | 50          | 100  | 200  | 400  | 600              | 800  | 1000 | V    |
| Maximum RMS voltage   | V <sub>RMS</sub>                  | 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 rectified current at 0.375" (9.5 mm) lead length at $T_A = 25$ °C | I <sub>F(AV)</sub>                | 1.5         |      |      |      |                  |      | А    |      |
| Peak forward surge current single sine-wave superimposed on rated load                    | I <sub>FSM</sub>                  | 50          |      |      |      | Α                |      |      |      |
| Rating for fusing (t < 8.3 ms)  | I <sup>2</sup> t                  | t 10        |      |      |      | A <sup>2</sup> s |      |      |      |
| Operating junction and storage temperature range  | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 |      |      |      | °C               |      |      |      |

| <b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted) |                         |                |        |      |  |  |  |
|---|-------------------------|----------------|--------|------|--|--|--|
| PARAMETER   | TEST CONDITIONS         | SYMBOL         | VALUES | UNIT |  |  |  |
| Maximum instantaneous forward voltage per diode                                   | I <sub>F</sub> = 1.0 A  | V <sub>F</sub> | 1.0    | V    |  |  |  |
| Maximum DC reverse current at rated DC blocking voltage                           | T <sub>A</sub> = 25 °C  | I_             | 5.0    |      |  |  |  |
| per diode   | T <sub>A</sub> = 125 °C | I <sub>R</sub> | 500    | μA   |  |  |  |
| Typical junction capacitance per diode  | 4.0 V, 1 MHz            | CJ             | 14     | pF   |  |  |  |



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| THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |   |      |  |  |  |      |  |  |      |
|---|---|------|--|--|--|------|--|--|------|
| PARAMETER   | SYMBOL W005G W01G W02G W04G W06G W08G W10G UNIT |      |  |  |  | UNIT |  |  |      |
| Typical thermal resistance (1)  | $R_{\theta JA}$                                 | 36   |  |  |  |      |  |  | °C/W |
| Typical trieffial resistance (*)  | $R_{\theta JL}$                                 | L 11 |  |  |  | C/VV |  |  |      |

#### Note

<sup>(1)</sup> Thermal resistance from junction to ambient and from junction to lead at 0.375" (9.5 mm) lead length PCB mounting. PCB size 0.22" x 0.22" (5.5 mm x 5.5 mm)

| ORDERING INFORMATION (Example) |                 |  |     |             |  |  |  |
|--------------------------------|-----------------|--|-----|-------------|--|--|--|
| PREFERRED P/N                  | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE BASE QUANTITY DELIVERY MODE |     |             |  |  |  |
| W06G-E4/51                     | 1.12            | 51   | 100 | Plastic bag |  |  |  |

### RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)

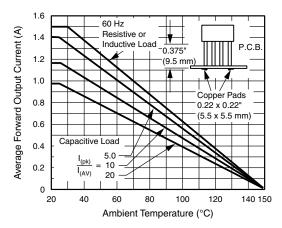


Fig. 1 - Derating Curve Output Rectified Current

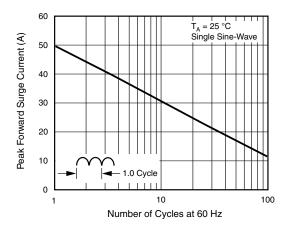


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

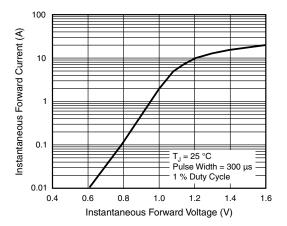


Fig. 3 - Typical Forward Characteristics Per Diode

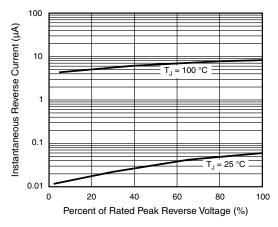


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode





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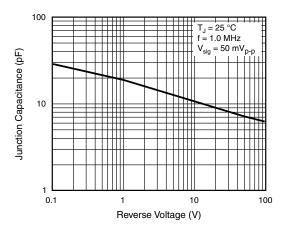


Fig. 5 - Typical Junction Capacitance Per Diode

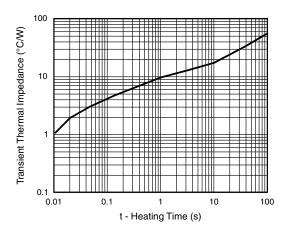
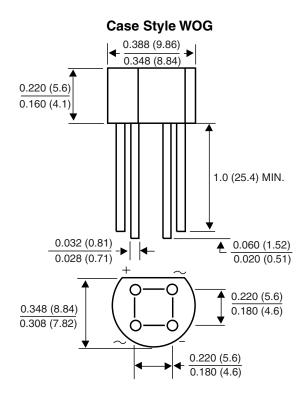


Fig. 6 - Typical Transient Thermal Impedance

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





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