GLASS PASSIVATED SINGLE-PHASE BRIDGE RECTIFIERS
Reverse Voltage – 50 to 1000 Volts
Forward Current – 6.0 Amperes

Features
- Plastic material has Underwriters Laboratory Flammability Classification 94V-0
- Ideal for printed circuit boards
- Glass passivated chip junction
- Reliable low cost construction utilizing molded plastic technique

Mechanical Data
- Case: Molded plastic GBU
- Terminals: leads solderable per MIL-STD-202 Method 208 guaranteed
- Mounting Position: Any

Absolute Maximum Ratings and Characteristics
Rating at 25° ambient temperature unless otherwise specified. Single-phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

<table>
<thead>
<tr>
<th></th>
<th>Symbols</th>
<th>GBU 6005</th>
<th>GBU 601</th>
<th>GBU 602</th>
<th>GBU 604</th>
<th>GBU 606</th>
<th>GBU 608</th>
<th>GBU 610</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>Maximum recurrent peak reverse voltage</td>
<td>V_{RRM}</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
<td>V</td>
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<tr>
<td>Maximum RMS voltage</td>
<td>V_{RMS}</td>
<td>35</td>
<td>70</td>
<td>140</td>
<td>280</td>
<td>420</td>
<td>560</td>
<td>700</td>
<td>V</td>
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<tr>
<td>Maximum DC blocking voltage</td>
<td>V_{DC}</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
<td>V</td>
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<tr>
<td>Maximum average forward rectified current at T_c = 100° (Note 1), (Note 2)</td>
<td>I_{F(AM)}</td>
<td>6</td>
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<td></td>
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<td>A</td>
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<tr>
<td>Peak forward surge current, 8.3ms single half-sine-wave superimposed on rated load (JEDEC Method)</td>
<td>I_{FSM}</td>
<td>175</td>
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<td></td>
<td>A</td>
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<td>Maximum forward voltage at 3.0A DC and 25°</td>
<td>V_F</td>
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<td>V</td>
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<tr>
<td>Maximum reverse current at T_A = 25° at rated DC blocking voltage T_A = 125°</td>
<td>I_R</td>
<td>5</td>
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<td></td>
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<td></td>
<td>μA</td>
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<td>Typical junction capacitance (Note 3)</td>
<td>C_J</td>
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<td></td>
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<td></td>
<td></td>
<td>94</td>
<td>pF</td>
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<td>Typical thermal resistance (Note 1), (Note 2)</td>
<td>R_{JJA}</td>
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<td>? /W</td>
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<td>Typical thermal resistance (Note 1), (Note 2)</td>
<td>R_{JJC}</td>
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<td>? /W</td>
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<td>Operating and storage temperature range</td>
<td>T_J, T_S</td>
<td>-55 to +150</td>
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Notes:
1. Units case mounted on 2.6x1.4x0.06" thick (6.5x3.5x0.15 cm) Al. plate heatsink.
2. Recommended mounting position is to bolt down on heatsink with silicone thermal compound for maximum heat transfer with #6 screws.
3. Measured at 1MHz and applied reverse voltage of 4.0 VDC.
RATINGS AND CHARACTERISTIC CURVES

Fig. 1 Derating Curve Output Rectified Current

Heatsink Mounting, 2.6" x1.4" x0.06" Thk
(6.5 x3.5 x0.15 cm) AL. Plate

Average Forward Output Current (A)

60Hz Resistive or Inductive Load

Case Temperature (°C)

0 50 100 150

0 2.0 4.0 6.0

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

Single Sine-Wave (JEDEC Method)

Tj=150°C

Peak Forward Surge Current (A)

175 150 125 100 75 50 25

1 10 100 1000 10000

Number of Cycles at 60Hz

Fig. 3 Typical Forward Characteristics Per Leg

Tj=25°C

Pulse Width = 300µs

1% Duty Cycle

Instantaneous Forward Current (A)

100 10 1 0.1

Instantaneous Forward Voltage (V)

0.4 0.6 0.8 1.0 1.2 1.4 1.6

Fig. 4 Typical Reverse Leakage Characteristics Per Leg

Percent of Rated Peak Reverse Voltage (%)

500 100 10 1

Instantaneous Reverse Current (µA)

0.01 0.1 1

Percent of Rated Peak Reverse Voltage (%)

0 20 40 60 80 100

50 - 400V

600 - 1000V

Fig. 5 Typical Junction Capacitance Per Leg

Tj=25°C

f=1.0MHz

Vsig=50mVp-p

Junction Capacitance, pF

1000 100 10

50 - 400V

600 - 1000V

Reverse Voltage (A)

0.1 1 10 100

Fig. 6 Typical Transient Thermal Impedance

Transient Thermal Impedance (°C/W)

0.1 1 10 100

0.01 0.1 1 10 100

t, Heating Time (sec.)

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