The ZHM-26G1 is a two stage MMIC power amplifier designed for broadband high power wideband frequency applications. It works from 2 GHz- 6 GHz. It can be used as either a driver or an output stage amplifier. This device is fully matched input and output to 50 Ω which eliminates any sensitive external RF tuning components. The ZHM-26G1 is fabricated using a high reliability pHEMT process, to realize good power added efficiency and gain. The pHEMT process features full passivation for high performance and reliability.

**Electrical Specifications:**
Freq. = 2 - 6 GHz, VDD= 12 V, IDQ= 3.5 A, TA= +25 °C, Z0= 50 Ω

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Test Conditions</th>
<th>Units</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
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<td>Gain</td>
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<td>dB</td>
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<td>Input Return Loss</td>
<td>—</td>
<td>dB</td>
<td>—</td>
<td>8</td>
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<tr>
<td>Output Return Loss</td>
<td>—</td>
<td>dB</td>
<td>—</td>
<td>10</td>
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<tr>
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<td>dBm</td>
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<tr>
<td>P\textsubscript{SAT}</td>
<td>—</td>
<td>dBm</td>
<td>—</td>
<td>40</td>
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<tr>
<td>PAE</td>
<td>P\textsubscript{SAT}</td>
<td>%</td>
<td>—</td>
<td>30</td>
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<td>Duty Cycle</td>
<td>—</td>
<td>%</td>
<td>—</td>
<td>—</td>
<td>100</td>
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<tr>
<td>Current</td>
<td>( \frac{I_{DQ}}{P_{\text{SAT}}} )</td>
<td>A</td>
<td>—</td>
<td>3.5</td>
<td>5.5</td>
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</tbody>
</table>
Typical Performance Curves

**Gain**

**Reverse Isolation**

**Input Return Loss**

**Output Return Loss**

**Output Power (dBm)**

**Output Power (W)**
Typical Performance Curves

**Power Gain**

- Frequency (GHz) vs. Power Gain (dBm)
- Three curves for different temperatures: 25°C, -40°C, and +85°C

**Efficiency @ 2 GHz**

- Input Power (dBm) vs. Efficiency (%)
- Three curves for different temperatures: 25°C, -40°C, and +85°C

**Power Added Efficiency**

- Frequency (GHz) vs. PAE (%)
- Three curves for different temperatures: 25°C, -40°C, and +85°C

**Efficiency @ 4 GHz**

- Input Power (dBm) vs. Efficiency (%)
- Three curves for different temperatures: 25°C, -40°C, and +85°C

**Drain Current**

- Frequency (GHz) vs. Drain Current (A)
- Three curves for different temperatures: 25°C, -40°C, and +85°C

**Efficiency @ 6 GHz**

- Input Power (dBm) vs. Efficiency (%)
- Three curves for different temperatures: 25°C, -40°C, and +85°C
Typical Performance Curves

**Power Gain @ 2 GHz**

![](image1)

**Output Power Sweep @ 2 GHz**

![](image2)

**Power Gain @ 4 GHz**

![](image3)

**Output Power Sweep @ 4 GHz**

![](image4)

**Power Gain @ 6 GHz**

![](image5)

**Output Power Sweep @ 6 GHz**

![](image6)
Typical Performance Curves

**Max. Power Dissipation vs. Base Plate Temperature**

![Graph showing the relationship between total power dissipation and base plate temperature.](image)

8. Power dissipation should not exceed the maximum plot shown above to maintain $T_J < 150^\circ C$. It is recommended to monitor power dissipation and decrease power dissipation in the device as required.

**Junction Temperature vs. Base Plate Temperature with 45 W Power Dissipation**

![Graph showing the relationship between junction temperature and base plate temperature.](image)