Distributed Amplifiers

Altum RF offers a wide range of distributed amplifiers. We are designing custom components, along with catalog products. We continue to expand our product portfolio, so if you do not see a component you need, please inquire as it may be in development.

Products Features:

- DC-20, 30, 40 GHz
- GaAs technology for up to 1 W $P_{sat}$
- GaN technology for 3-10 W $P_{sat}$
- Internally matched to 50Ω
- QFN packaged, MSL level 3
- ESD protected

Benefits:

- Qualified and proven solutions
- Robust supply from one of the world’s leading GaAs foundries
- 100% DC and RF tested
- EU export (non-ITAR) products
- Derivative product possibilities

Demoboard and RF Performance

Demoboard ARF1304Q5

Measured RF Performance ARF1304Q5
GaAs PHEMT Distributed Amplifiers

<table>
<thead>
<tr>
<th>Amplifiers</th>
<th>Frequency</th>
<th>Gain</th>
<th>$P_{sat}$</th>
<th>Bias</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARF1300Q4</td>
<td>0–24 GHz</td>
<td>13 dB</td>
<td>23.6 dBm</td>
<td>8 V, 130 mA</td>
<td>4×4 mm QFN</td>
</tr>
<tr>
<td>ARF1301Q5</td>
<td>0–18 GHz</td>
<td>12.5 dB</td>
<td>30 dBm</td>
<td>12 V, 310 mA</td>
<td>5×5 mm QFN</td>
</tr>
<tr>
<td>ARF1303</td>
<td>0–40 GHz</td>
<td>12 dB</td>
<td>21 dBm</td>
<td>8 V, 130 mA</td>
<td>Bare Die</td>
</tr>
<tr>
<td>ARF1304Q5</td>
<td>0–26.5 GHz</td>
<td>15 dB</td>
<td>25.0 dBm</td>
<td>10 V, 150 mA</td>
<td>5×5 mm QFN</td>
</tr>
</tbody>
</table>

**Pinning ARF1300Q4 (4x4)**

**Production data measured on 7.5 K devices**

Gain @ 18 GHz: 3σ 0.77dB

**RF Performance ARF1303**

**Block Diagram ARF1300Q4**
# GaN High Power Distributed Amplifiers

<table>
<thead>
<tr>
<th>Amplifiers</th>
<th>Frequency</th>
<th>Gain</th>
<th>$P_{sat}$</th>
<th>PAE</th>
<th>Bias</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARF1306C5</td>
<td>2-20 GHz</td>
<td>16 dB</td>
<td>3 W</td>
<td>&gt; 20%</td>
<td>24 V</td>
</tr>
<tr>
<td>ARF1307C7</td>
<td>1-20 GHz</td>
<td>18 dB</td>
<td>10 W</td>
<td>&gt; 20%</td>
<td>28 V</td>
</tr>
<tr>
<td>ARF1308</td>
<td>6-40 GHz</td>
<td>TBC</td>
<td>3 W</td>
<td>TBC</td>
<td>20 V</td>
</tr>
<tr>
<td>ARF1310</td>
<td>10-40 GHz</td>
<td>TBC</td>
<td>5 W</td>
<td>TBC</td>
<td>20 V</td>
</tr>
<tr>
<td>ARF1311</td>
<td>10-40 GHz</td>
<td>TBC</td>
<td>10 W</td>
<td>TBC</td>
<td>20 V</td>
</tr>
</tbody>
</table>

## Demoboard and RF Performance

**ARF1307C7**

**Measured RF Performance ARF1307C7**

**Demoboard ARF1307C7**

**Measured RF Performance ARF1307C7 over Temperature**

**S21 (dB)**

![Image of ARF1307C7 demoboard and measured RF performance graphs]

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About Altum RF

Inspired by leading experts in the RF/microwave industry, Altum RF transforms how partnerships work to develop high-performance products with a focus on superior technical support and customer service. Our engineers use decades of modeling expertise and system applications knowledge to define the right products for the most challenging requirements.

With the help of our exceptional global partners, we can significantly shorten the product development cycles by managing the entire supply chain from design to packaging, testing and qualification. For development of GaAs, GaN, SiGe or RF CMOS components, discover Altum RF as your next RF semiconductor partner.

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