The ULA-818-82 is a modular amplifier designed to meet the ultralinear transmitter output requirements of worldwide wireless base station systems. The amplifier exhibits an extremely high IP3 (+48 dBm). The device is self contained with all matching and bias circuitry included. Typical applications for this device include driver stages for single channel and multicarrier feed forward linear amplifiers. It is also useful for a lower power micro-cell amplifier output stage where excellent multitone intermodulation performance is required. Some applications for this device are: CDMA, TDMA, GSM, GPRS, EDGE, cdma2000.

### Specifications

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freq</td>
<td>Frequency Range</td>
<td>800</td>
<td>1000</td>
<td>MHz</td>
<td></td>
</tr>
<tr>
<td>SSG</td>
<td>Small Signal Gain</td>
<td>14.0</td>
<td>15.5</td>
<td>dB</td>
<td></td>
</tr>
<tr>
<td>P1dB</td>
<td>P out at 1 dB Compression</td>
<td>+28.5</td>
<td>+28.5</td>
<td>dBm</td>
<td></td>
</tr>
<tr>
<td>IP3</td>
<td>Third-order Intercept (1)</td>
<td>+45.0</td>
<td>+48.0</td>
<td>dBm</td>
<td></td>
</tr>
<tr>
<td>VSWR</td>
<td>Input / Output</td>
<td>2.0:1 / 3.0:1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ΔGOF</td>
<td>Gain Variation over Freq.</td>
<td>±0.25</td>
<td>±0.5</td>
<td>dB</td>
<td></td>
</tr>
<tr>
<td>ΔGOT</td>
<td>Gain Variation over Temp.</td>
<td>-0.012</td>
<td></td>
<td>dB/°C</td>
<td></td>
</tr>
<tr>
<td>Idd</td>
<td>DC Current</td>
<td>380</td>
<td>450</td>
<td>mA</td>
<td></td>
</tr>
<tr>
<td>θth</td>
<td>FET Thermal Resistance (2)</td>
<td>26</td>
<td></td>
<td>°C/W</td>
<td></td>
</tr>
</tbody>
</table>

(1) Two tone tests at Pout = +13 dBm/tone, centered at 900 MHz with 20 MHz separation
(2) When calculating typical Tch, use FET VDS=6.3V, IDS=380mA
Output Power at P1dB
@ +25°C

Frequency (MHz)

P1 (dBm)

27 28 29 30

Output Power at P1dB
@ +25°C

IP3* vs. Frequency
@ +25°C

Frequency (MHz)

IP3 (dBm)

45 46 47 48 49 50 51

Gain vs. Frequency
Over Temperature

Frequency (MHz)

Gain (dB)

14 15 16 17

ACPR ** @ Pout = 12 dBm @ +25°C

Center 886.5 MHz  1.5 MHz  Span 15 MHz

Gain vs. Frequency
Over Temperature

Frequency (MHz)

Gain (dB)

-20°C  25°C  85°C

Return Loss vs. Frequency
@ +25°C

Frequency (MHz)

Return Loss (dB)

-12 -15 -20 -25 -30 -40 -50 -60 -70 -80 -90 -100

ULM-818-82 Outline Drawing

Application Circuit

Absolute Maximum Ratings

Bias Voltage
RF Input Power
Case Operating Temperature
Storage Temperature

8.0V
500 mW
+85°C
-65°C to +125°C

ACPR ** @ Pout = 12 dBm @ +25°C

**3GPP, TS 25.411, Test Model 1, 64 Ch., Ch. BW = 3.84 MHz, Ch. Spacing = 5MHz

**Two tone test @ P out = 13 dBm/tone; with 20 MHz separation

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