FEATURES
- High Output Power: $P_{1\text{dB}} = 12\text{dBm (Typ.)}$
- High Gain: $G_{1\text{dB}} = 13.5\text{dB (Typ.)}$
- Low In/Out VSWR
- Low Noise: $NF = 2.5\text{dB (Typ.)}$
- Broad Band: $18.7 \sim 19.7\text{GHz}$
- Impedance Matched $Z_{in}/Z_{out} = 50\Omega$
- Hermetically Sealed Package (12 X 15 X 3.5mm)

DESCRIPTION
The FMC1819LN-02 is a module that contains a two-stage amplifier, internally matched, for standard communications in the 18.7 to 19.7GHz frequency range. This product is well suited for point-to-point radio applications as it offers high power, high gain, low VSWR and low noise.

Fujitsu’s stringent Quality Assurance Program assures the highest reliability and consistent performance.

ABSOLUTE MAXIMUM RATINGS (Ambient Temperature $T_a = 25^\circ\text{C}$)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Rating</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Input Voltage</td>
<td>$V_{DD}$</td>
<td>10</td>
<td>V</td>
</tr>
<tr>
<td>DC Input Voltage</td>
<td>$V_{GG}$</td>
<td>-7</td>
<td>V</td>
</tr>
<tr>
<td>Input Power</td>
<td>$P_{in}$</td>
<td>-1.5</td>
<td>dBm</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>$T_{stg}$</td>
<td>-55 to +125</td>
<td>°C</td>
</tr>
<tr>
<td>Operating Case Temperature</td>
<td>$T_{op}$</td>
<td>-55 to +85</td>
<td>°C</td>
</tr>
</tbody>
</table>

Fujitsu recommends the following conditions for the reliable operation of GaAs modules:
1. The drain operating voltage ($V_{DD}$) should not exceed 8 volts.
2. The gate operating voltage ($V_{GG}$) should not exceed -5 volts.

ELECTRICAL CHARACTERISTICS (Case Temperature $T_c = 25^\circ\text{C}$)

<table>
<thead>
<tr>
<th>Item</th>
<th>Symbol</th>
<th>Test Conditions</th>
<th>Limit</th>
<th></th>
<th></th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range</td>
<td>$f$</td>
<td></td>
<td></td>
<td>Min.</td>
<td>Typ.</td>
<td>Max.</td>
</tr>
<tr>
<td>Output Power at 1dB G.C.P.</td>
<td>$P_{1\text{dB}}$</td>
<td>$V_{DD} = 8\text{V}$</td>
<td>11.0</td>
<td>12.0</td>
<td>-</td>
<td>dBm</td>
</tr>
<tr>
<td>Power Gain at 1 dB G.C.P.</td>
<td>$G_{1\text{dB}}$</td>
<td>$V_{GG} = 5\text{V}$</td>
<td>12.5</td>
<td>13.5</td>
<td>-</td>
<td>dB</td>
</tr>
<tr>
<td>Noise Figure</td>
<td>$NF$</td>
<td>$f = 18.7 \sim 19.7\text{GHz}$</td>
<td>-</td>
<td>2.5</td>
<td>3.5</td>
<td>dB</td>
</tr>
<tr>
<td>Gain Flatness</td>
<td>$\Delta G$</td>
<td>$V_{DD} = 8\text{V}$</td>
<td>-</td>
<td>1.0</td>
<td>-</td>
<td>dB</td>
</tr>
<tr>
<td>Input VSWR</td>
<td>$VSWR_i$</td>
<td>$V_{GG} = 5\text{V}$</td>
<td>-</td>
<td>3.0:1</td>
<td>-</td>
<td>dB</td>
</tr>
<tr>
<td>Output VSWR</td>
<td>$VSWR_o$</td>
<td>$P_{in} = -15\text{dBm}$</td>
<td>-</td>
<td>2.5:1</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>DC Input Current</td>
<td>$I_D$</td>
<td>$V_{DD} = 8\text{V}$</td>
<td>-</td>
<td>40</td>
<td>70</td>
<td>mA</td>
</tr>
<tr>
<td>DC Input Current</td>
<td>$I_G$</td>
<td>$V_{GG} = 5\text{V}$</td>
<td>-</td>
<td>10</td>
<td>15</td>
<td>mA</td>
</tr>
</tbody>
</table>

CASE STYLE: GJ

G.C.P.: Gain Compression Point
GAIN & NF vs. FREQUENCY

Gain (dB)

NF (dB)

Frequency (GHz)

V\textsubscript{DD}=8V
V\textsubscript{GG}=-5V

Case Style "GJ"

Metal-Ceramic Hermetic Package

INDEX
1 Min. (0.039)

INDEX
1 Min. (0.039)

4-R 1.2±0.15 (0.047)

3.5 Max. (0.137)

1.2±0.15 (0.051)

6.0±0.08 (0.003)

0.9 (0.035)

1. V\textsubscript{DD}
2. RF\textsubscript{in}
3. V\textsubscript{GG}
4. V\textsubscript{GG}
5. RF\textsubscript{out}
6. V\textsubscript{DD}
7. GND (Body)

Unit: mm (inches)