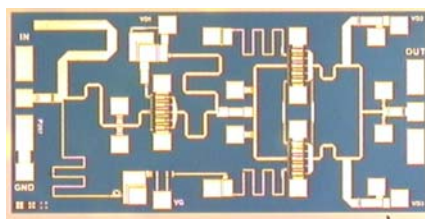


### FEATURES

- 17 – 20 GHz Operating Frequency Range
- 27.0dBm Output Power at 1dB Compression
- 15.0 dB Typical Small Signal Gain
- -40dBc OIMD3 @Each Tone Pout 17dBm

### APPLICATIONS

- Point-to-point and point-to-multipoint radio
- Military Radar Systems



Dimension: 2250um X 1130um  
 Thickness: 75um ± 13um



**Caution! ESD sensitive device.**

### ELECTRICAL CHARACTERISTICS ( $T_a = 25\text{ }^\circ\text{C}$ , 50 ohm, VDD=7V, IDQ=380mA)

| SYMBOL                | PARAMETER/TEST CONDITIONS   | MIN  | TYP  | MAX | UNITS              |
|-----------------------|---|------|------|-----|--------------------|
| <b>F</b>              | Operating Frequency Range   | 17   |      | 20  | GHz                |
| <b>P1dB</b>           | Output Power at 1dB Gain Compression  | 25.5 | 27.0 |     | dBm                |
| <b>Gss</b>            | Small Signal Gain   | 13.0 | 15.0 |     | dB                 |
| <b>OIMD3</b>          | Output 3 <sup>rd</sup> Order Intermodulation Distortion<br>@ $\Delta f=10\text{MHz}$ , Each Tone Pout 17dBm |      | -40  | -37 | dBc                |
| <b>Input RL</b>       | Input Return Loss   |      | -10  | -8  | dB                 |
| <b>Output RL</b>      | Output Return Loss  |      | -10  | -7  | dB                 |
| <b>Idss</b>           | Saturate Drain Current $V_{DS} = 3\text{V}$ , $V_{GS} = 0\text{V}$  | 429  | 536  | 644 | mA                 |
| <b>V<sub>DD</sub></b> | Power Supply Voltage  |      | 7    | 8   | V                  |
| <b>Rth</b>            | Thermal Resistance (Au-Sn Eutectic Attach)  |      | 18   |     | $^\circ\text{C/W}$ |
| <b>Tb</b>             | Operating Base Plate Temperature  | -35  |      | +85 | $^\circ\text{C}$   |

### ABSOLUTE MAXIMUM RATINGS FOR CONTINUOUS OPERATION<sup>1,2</sup>

| SYMBOL    | CHARACTERISTIC          | VALUE                    |
|-----------|-------------------------|--------------------------|
| $V_{DS}$  | Drain to Source Voltage | 8 V                      |
| $V_{GS}$  | Gate to Source Voltage  | -4 V                     |
| $I_{DD}$  | Drain Current           | Idss                     |
| $I_{GSF}$ | Forward Gate Current    | 7.5mA                    |
| $P_{IN}$  | Input Power             | @ 3dB compression        |
| $T_{CH}$  | Channel Temperature     | 150 $^\circ\text{C}$     |
| $T_{STG}$ | Storage Temperature     | -65/150 $^\circ\text{C}$ |
| $P_T$     | Total Power Dissipation | 6.3W                     |

1. Operating the device beyond any of the above rating may result in permanent damage.

2. Bias conditions must also satisfy the following equation  $V_{DS} * I_{DS} < (T_{CH} - T_{HS}) / R_{TH}$ ; where  $T_{HS}$  = ambient temperature

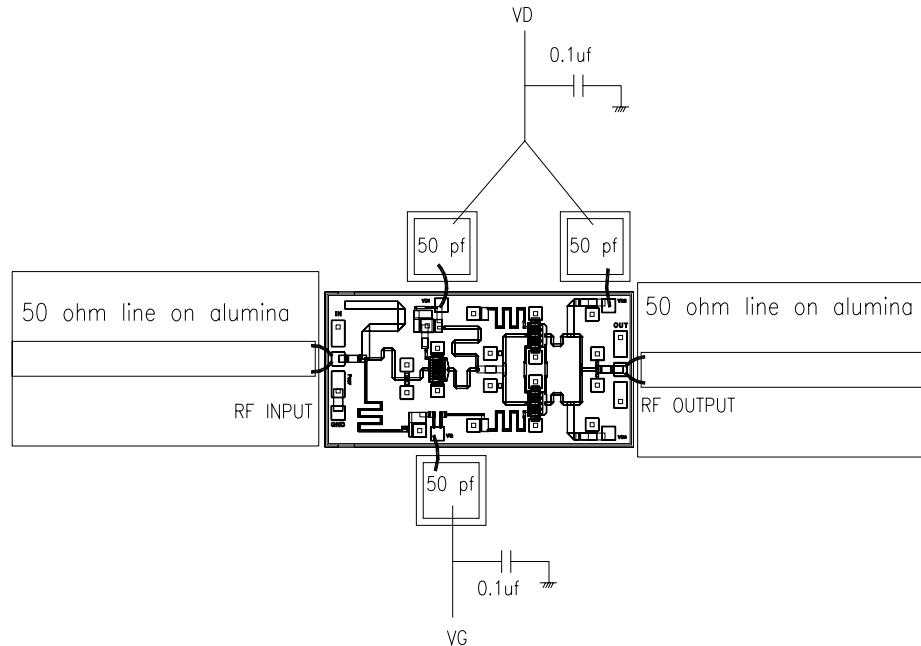
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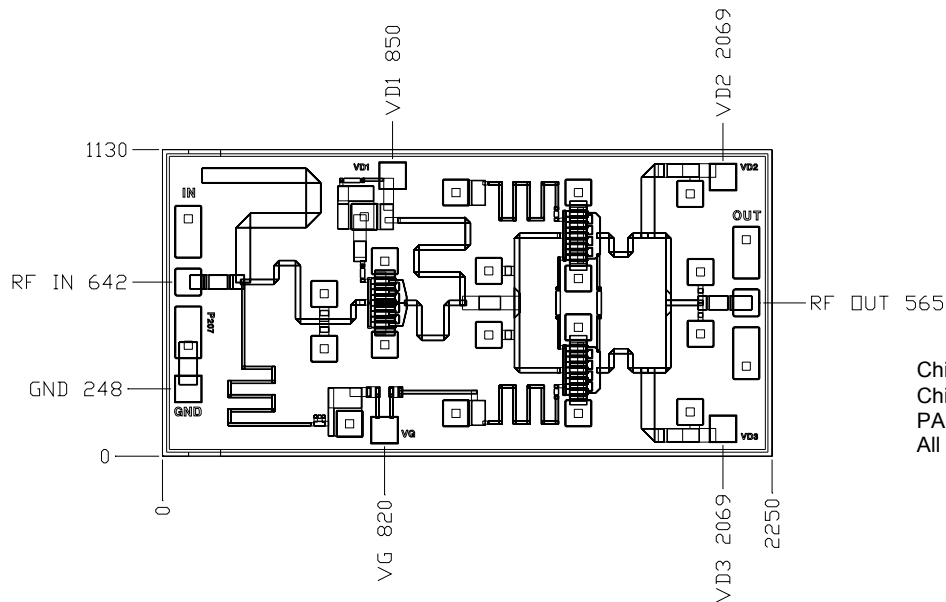
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### ASSEMBLY DRAWING



The length of RF wires should be as short as possible. Use at least two wires between RF pad and 50 ohm line and separate the wires to minimize the mutual inductance.

### CHIP OUTLINE



Chip Size 1130 x 2250 microns  
 Chip Thickness: 75 ± 13 microns  
 PAD Dimensions: 100 x 100 microns  
 All Dimensions in Microns

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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.