



# RFMA5065-2W

UPDATED 09/01/2006

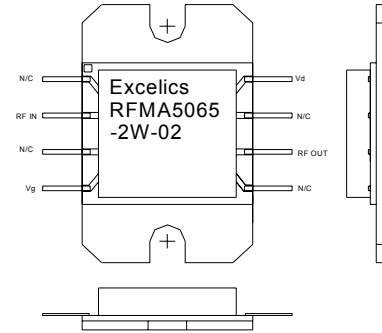
## 5.0 – 6.5 GHz Power Amplifier MMIC

### FEATURES

- 5.0 – 6.5 GHz Operating Frequency Range
- 33dBm Output Power at 1dB Compression
- 30.0 dB Typical Power Gain @1dB gain compression
- -44dBc Typical OIM3 @ each tone Pout 22dBm

### APPLICATIONS

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



Caution! ESD sensitive device.

### ELECTRICAL CHARACTERISTICS (Tb = 25 °C, 50 ohm, Vdd=10V, Vgg=-5V)

| SYMBOL    | PARAMETER/TEST CONDITIONS   | MIN  | TYP  | MAX  | UNITS |
|-----------|---|------|------|------|-------|
| F         | Operating Frequency Range   | 5.0  |      | 6.5  | GHz   |
| P1dB      | Output Power at 1dB Gain Compression  | 32   | 33   |      | dBm   |
| G1dB      | Gain @1dB gain compression  | 28.0 | 32.0 |      | dB    |
| OIMD3     | Output 3 <sup>rd</sup> Order Intermodulation Distortion @Δf=10MHz, Each Tone Pout 22dBm | -40  | -44  |      | dBc   |
| Input RL  | Input Return Loss   |      | -12  | -6   | dB    |
| Output RL | Output Return Loss  |      | -6   |      | dB    |
| Idd       | Drain Current @small signal output power level  |      | 1260 | 1500 | mA    |
| Vdd       | Drain Supply Voltage  |      | 10   |      | V     |
| Vgg       | Gate Supply Voltage   |      | -5   |      | V     |
| Rth       | Thermal Resistance  |      | 4    | 4.5  | °C/W  |
| Tb        | Operating Base Plate Temperature  | - 30 |      | + 80 | °C    |

### MAXIMUM RATINGS @25°C<sup>1,2</sup>

| SYMBOL           | CHARACTERISTIC          | ABSOLUTE  | CONTINUOUS        |
|------------------|-------------------------|-----------|-------------------|
| Vdd              | Drain Supply Voltage    | 14V       | 10V               |
| Vgg              | Gate Supply Voltage     | -10V      | -5.5 V            |
| Idq              | Quiescent Drain Current | Idss      | 1.5A              |
| Igg              | Gate Current            | 150mA     | 50 mA             |
| P <sub>IN</sub>  | Input Power             | 8dBm      | @ 3dB compression |
| T <sub>CH</sub>  | Channel Temperature     | 175°C     | 150°C             |
| T <sub>STG</sub> | Storage Temperature     | -65/175°C | -65/150°C         |
| Pt               | Total Power Dissipation | 30W       | 15W               |

1. Operating the device beyond any of the above rating may reduce MTTF and cause permanent damage.

2. Bias conditions must also satisfy the following equation  $V_{dd} \cdot I_{dd} < (T_{CH} - T_b) / R_{TH}$

Specifications are subject to change without notice.

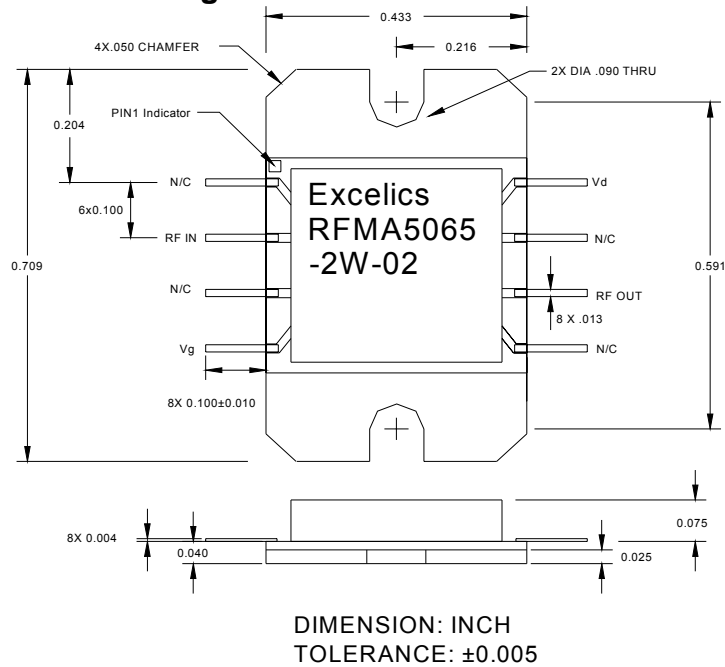
Excelics Semiconductor, Inc. 310 De Guigne Drive, Sunnyvale, CA 94085

Phone: 408-737-1711 Fax: 408-737-1868 Web: [www.excelics.com](http://www.excelics.com)

page 1 of 2

Revised September 2006

### Package Dimension and Pin Assignment

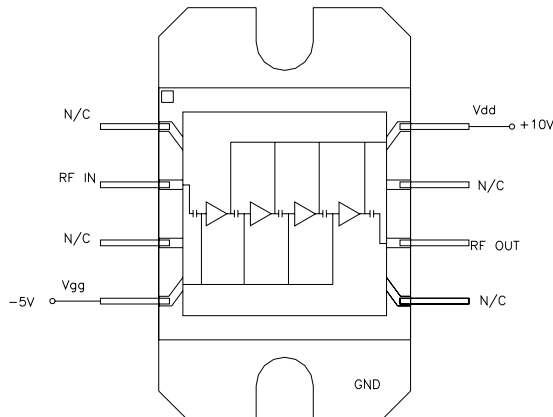


### Ordering Information

| Part Number    |                          |
|----------------|--------------------------|
| RFMA5065-2W-02 | Refer 02 Package Outline |

### Application Note

1. The package should be screwed onto a good heat sink and ground
2. Turn on/off sequence is required:  
 ---to turn on: apply -5V first, then +10V.  
 ---to turn off: turn +10V off first, then turn -5V off
3. Recommended Bias Circuit and Internal Block Diagram



"N/C" pins on package can be either grounded or left open.  
(No connection inside of package)

Specifications are subject to change without notice.