

Product Preview

MRFIC2408PP/D
Rev. 0, 08/2002

2.4 GHz RF Power
Amplifier for Bluetooth™
Applications



MOTOROLA
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digitaldna™

MRFIC2408



(Scale 2:1)

Package Information

Plastic Package

Case 1408

(QFN-12)

Ordering Information

| Device | Marking | Package |
|-----------|---------|---------|
| PRFIC2408 | 2408 | QFN-12 |

The MRFIC2408 is a single chip RF Power Amplifier intended for 2.4 GHz ISM Band applications. It can be used to implement Bluetooth™ Class I operation and contains power control circuitry.

- Power Supply Range: 2.7 to 3.6 V
- Power Amplifier Enable/Disable Function
- Over 20 dB of Power Control
- Low Power Shutdown Mode

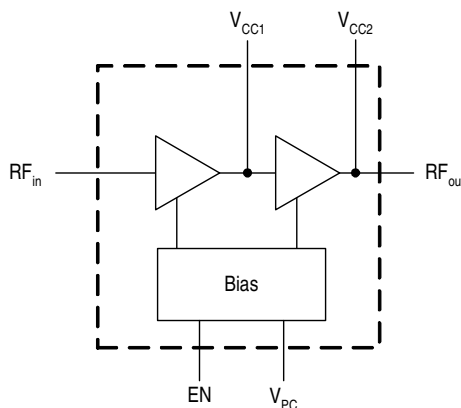


Figure 1. Simplified Block Diagram

Table 1. Maximum Ratings

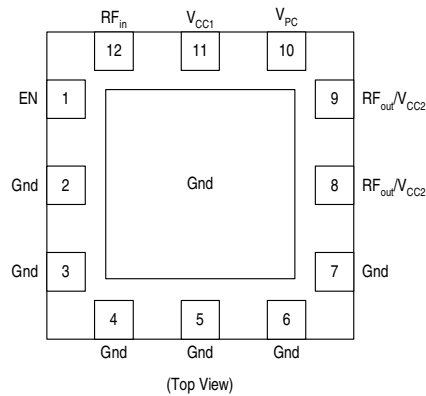
| Ratings | Symbol | Value | Unit |
|----------------------------------|-----------|------------|------|
| Supply Voltage | V_{CC} | 6.0 | V |
| Storage Temperature Range | T_{stg} | -55 to 150 | °C |
| Operating Case Temperature Range | T_C | -40 to 110 | °C |
| Input Signal (PA In) | P_{in} | 5.0 | dBm |

NOTE: Maximum Ratings are those values beyond which damage to the device may occur. Functional operation should be restricted to the limits in the Electrical Characteristics tables.

Table 2. Electrical Characteristics
 ($V_{CC} = 3.0$ V, $RF_{in} = 2.0$ dBm, $f = 2.45$ GHz, $T_A = 25^\circ\text{C}$)

| Characteristic | Conditions | Symbol | Min | Typ | Max | Unit |
|------------------------|--|------------------|-----|-------|-----|------|
| Quiescent Current | No RF, $V_{EN} = 3.0$ V, $V_{PC} = 3.0$ V | I_{CCQ} | - | 220 | - | mA |
| Shut-Off Current | No RF, $V_{EN} = 0$ V, $V_{PC} = 3.0$ V | I_{CCS} | - | 0.001 | - | mA |
| Saturated Output Power | $V_{EN} = 3.0$ V, $V_{PC} = 3.0$ V | P_{out} | - | 23 | - | dBm |
| Power Gain | $V_{EN} = 3.0$ V, $V_{PC} = 3.0$ V | G_P | - | 21 | - | dB |
| Disable Isolation | $RF_{in} = 2.0$ dBm, $V_{EN} = 0$ V, $V_{PC} = 3.0$ V | $ S_{21} _{off}$ | 30 | - | - | dB |
| Harmonics (2f, 3f, 4f) | $V_{EN} = 3.0$ V, $V_{PC} = 3.0$ V | f_o | - | - | -25 | dB |

NOTE: V_{EN} = Enable Voltage and V_{PC} = Power Control Voltage.

**Figure 2. Pin Connections**

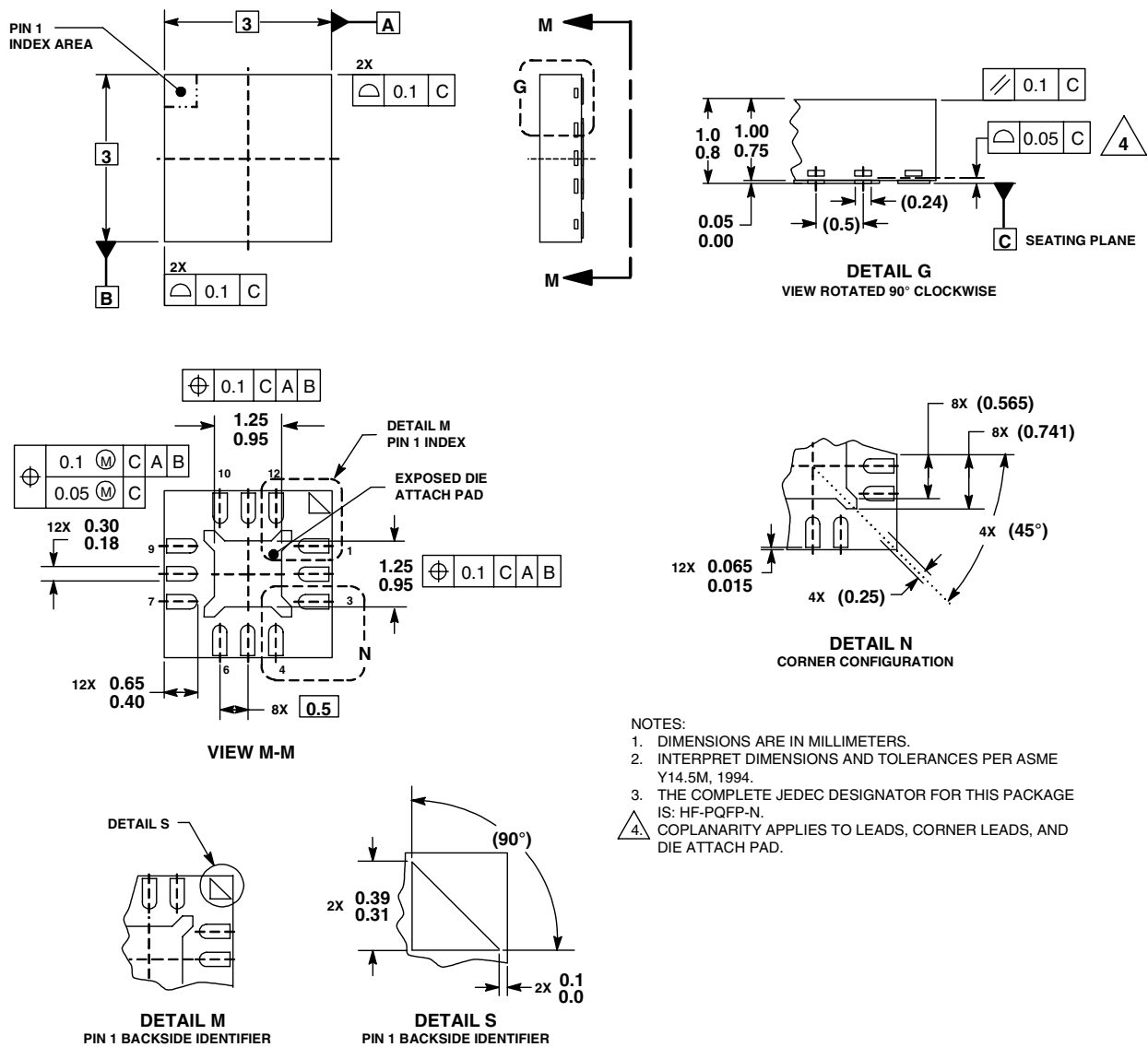


Figure 3. Outline Dimensions for QFN-12, 3x3 mm
(Case 1408-01, Issue O)

HOW TO REACH US:**USA/EUROPE/LOCATIONS NOT LISTED:**

Motorola Literature Distribution;
P.O. Box 5405, Denver, Colorado 80217
1-303-675-2140 or 1-800-441-2447

JAPAN:

Motorola Japan Ltd.; SPS, Technical Information Center,
3-20-1, Minami-Azabu Minato-ku, Tokyo 106-8573 Japan
81-3-3440-3569

ASIA/PACIFIC:

Motorola Semiconductors H.K. Ltd.; Silicon Harbour
Centre, 2 Dai King Street, Tai Po Industrial Estate,
Tai Po, N.T., Hong Kong
852-26668334

TECHNICAL INFORMATION CENTER:

1-800-521-6274

HOME PAGE:

<http://www.motorola.com/semiconductors>

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