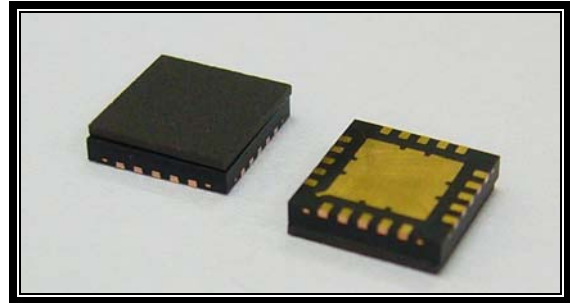


FEATURES

- 9.5 – 12.0 GHz Operating Frequency Range
- 30 dBm Output Power at 1dB Compression
- 14.0 dB Typical Small Signal Gain
- -40dBc OIMD3 @Each Tone Pout 19.5dBm
- 5X5 mm QFN Package

APPLICATIONS

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



Caution! ESD sensitive device.

ELECTRICAL CHARACTERISTICS (T_a = 25 °C, 50 ohm, V_{DD}=7V, I_{DQ}=800mA)

SYMBOL	PARAMETER/TEST CONDITIONS	MIN	TYP	MAX	UNITS
F	Operating Frequency Range	9.5		12.0	GHz
P1dB	Output Power at 1dB Gain Compression	29.0	30.0		dBm
G_{ss}	Small Signal Gain	12.0	14.0		dB
OIMD3	Output 3 rd Order Intermodulation Distortion @Δf=10MHz, Each Tone Pout 19.5dBm		-40	-37	dBc
Input RL	Input Return Loss		-10	-7	dB
Output RL	Output Return Loss		-8		dB
I_{dss}	Saturate Drain Current V _{DS} =3V, V _{GS} =0V	990	1230	1400	mA
V_{DD}	Power Supply Voltage		7	8	V
R_{th}	Thermal Resistance ¹		10		°C/W
T_b	Operating Base Plate Temperature	-35		+85	°C

ABSOLUTE MAXIMUM RATINGS FOR CONTINUOUS OPERATION^{2,3}

SYMBOL	CHARACTERISTIC	CONTINUOUS
V _{DS}	Drain to Source Voltage	8 V
V _{GS}	Gate to Source Voltage	-4 V
I _{DD}	Drain Current	I _{dss}
I _{GSF}	Forward Gate Current	15mA
P _{IN}	Input Power	@ 3dB compression
T _{CH}	Channel Temperature	150°C
T _{STG}	Storage Temperature	-65/150°C
P _T	Total Power Dissipation	12.6W

1. Measured result when used with Excelics recommended evaluation board.

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

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

Specifications are subject to change without notice.

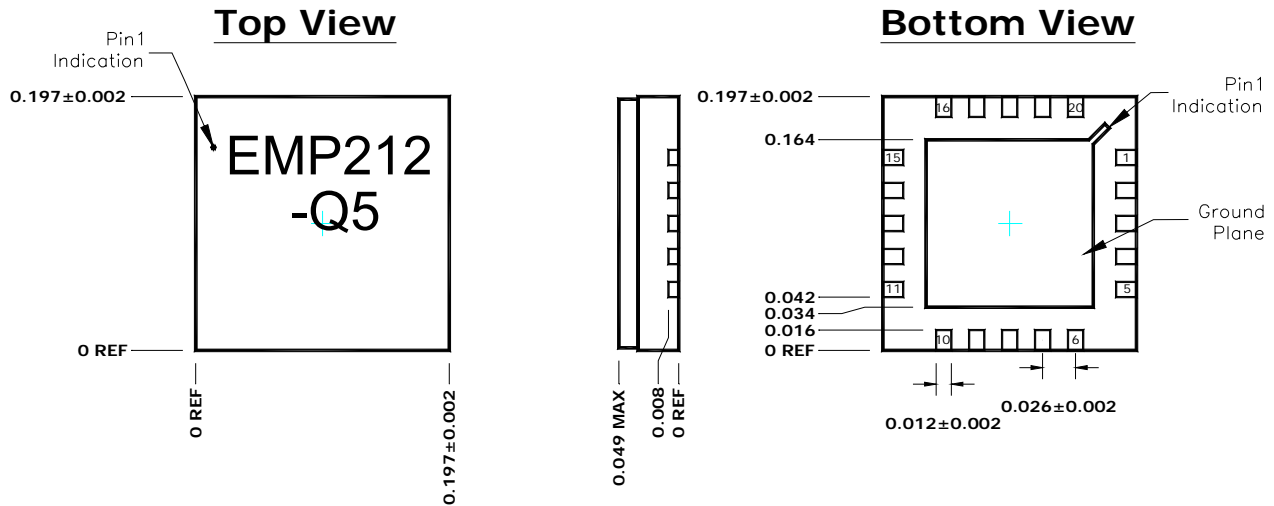
Excelics Semiconductor, Inc. 310 De Guigne Drive, Sunnyvale, CA 94085

Phone: 408-737-1711 Fax: 408-737-1868 Web: www.excelics.com

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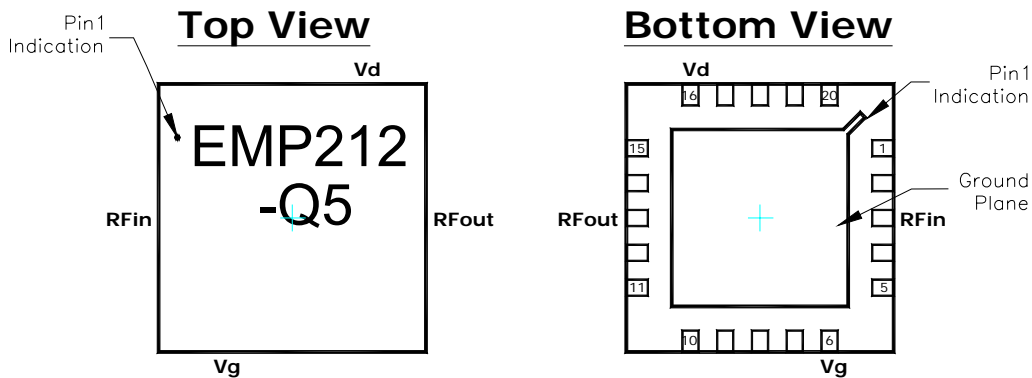
Revised May 2008

CHIP OUTLINE AND PIN ASSIGNMENT



Additional Notes:

- 1) Ground Plane must be soldered to PCB RF ground
- 2) All dimensions are in inches
- 3) Refer to Excelics application notes on QFNs for further guidelines
- 4) Pin Assignment:

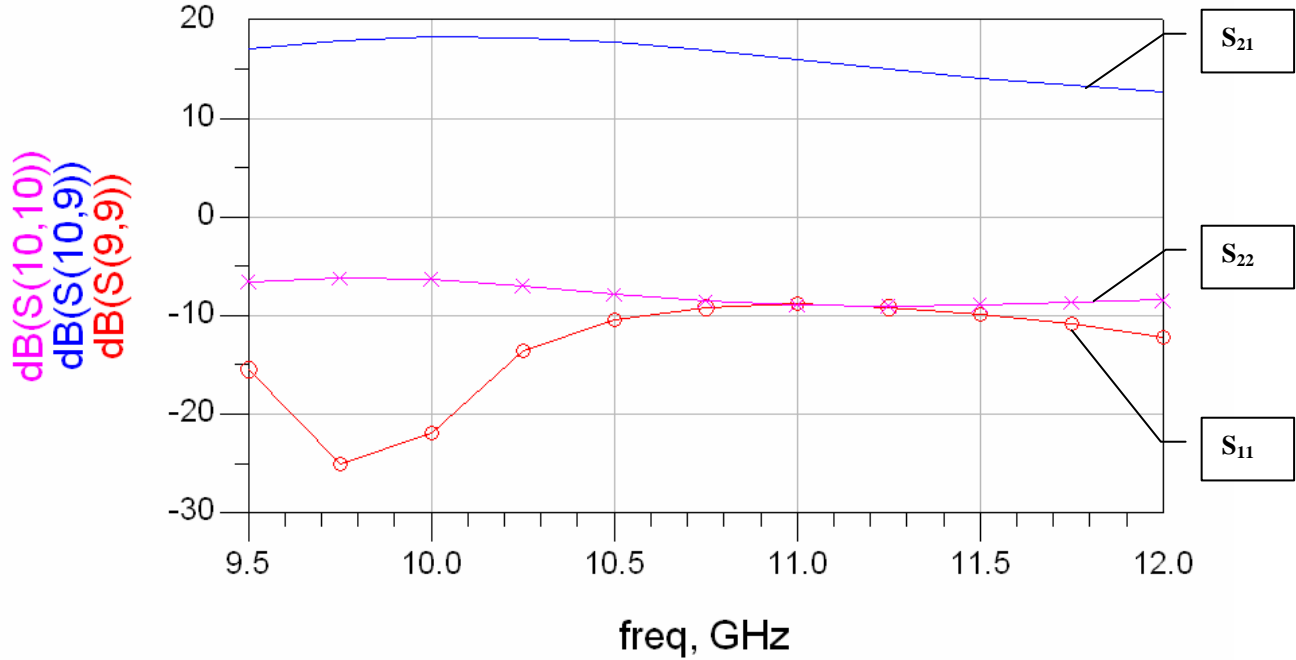


Pin	Assignment
1, 2, 4, 5	NC
3	RF _{in}
6	V _g
7, 8, 9, 10, 11, 12, 14, 15	NC
13	RF _{out}
16	V _d
17, 18, 19, 20	NC

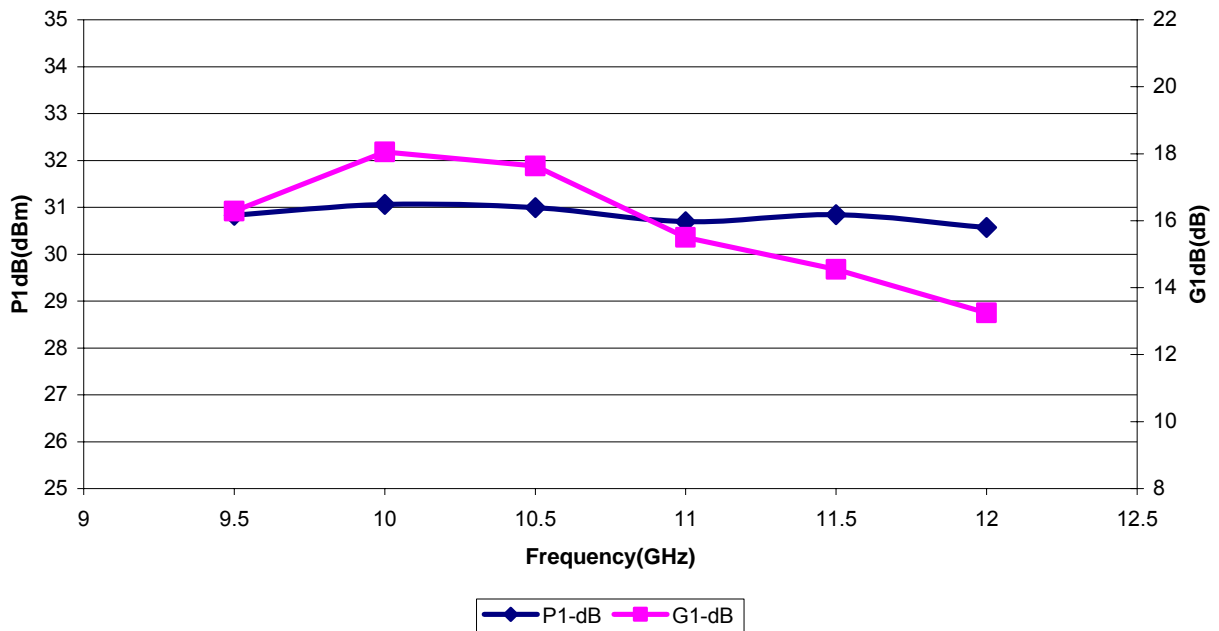
Specifications are subject to change without notice.

Typical Performance:

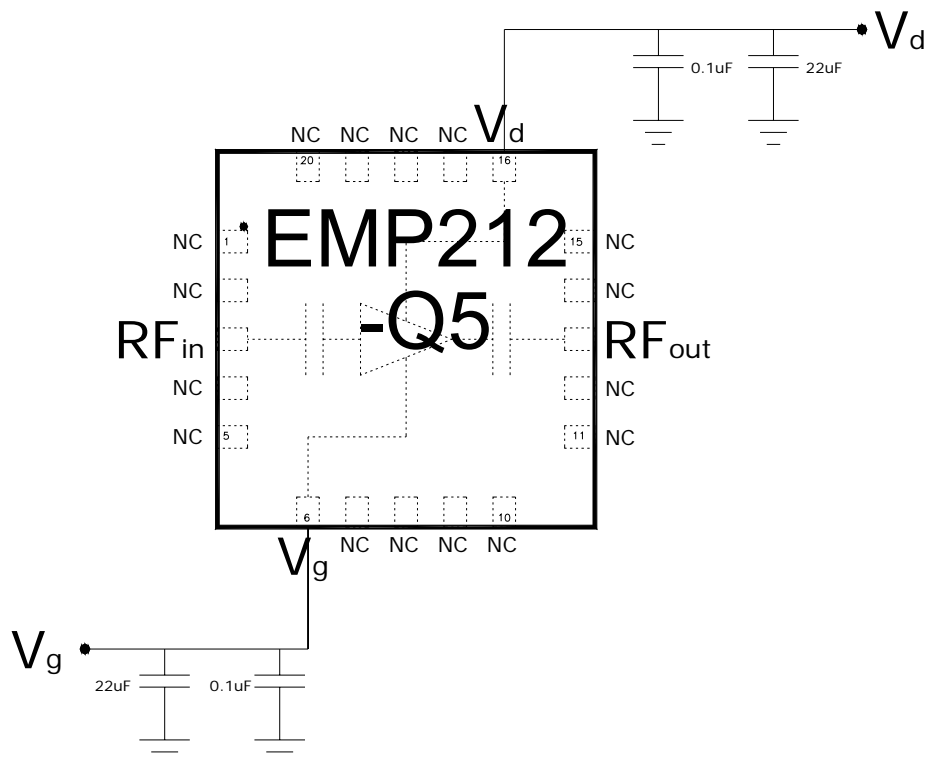
1. Small-Signal Parameters (@Vds = 7V, Ids = 800mA)



2. P1-dB & G1-dB (@Vds = 7V, Ids = 800mA)



Recommended Circuit Schematic:



Notes:

- 1) External bypass capacitors should be placed as close to the package as possible.
- 2) Dual biasing sequence required:
 - a. Turn-on Sequence: Apply $V_g = -2.5V$, followed by $V_d = 7V$, lastly increase V_g until required I_{dd}
 - b. Turn-off Sequence: Turn off V_d , followed by V_g
- 3) Demonstration board available upon request.

