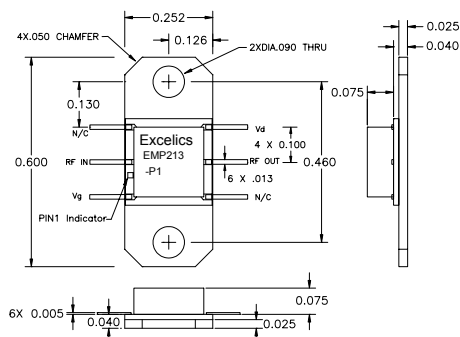


### FEATURES

- 12.5 – 15.5 GHz Operating Frequency Range
- 26.5dBm Output Power at 1dB Compression
- 15.0 dB Typical Small Signal Gain
- -40dBc OIMD3 @Each Tone Pout 16.5dBm

### APPLICATIONS

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



Optional Packaging solutions are available  
 Contact the Excelics sales team for details.



**Caution! ESD sensitive device.**

### ELECTRICAL CHARACTERISTICS (T<sub>a</sub> = 25 °C, 50 ohm, VDD=7V, IDQ=400mA)

SYMBOL	PARAMETER/TEST CONDITIONS	MIN	TYP	MAX	UNITS
F	Operating Frequency Range	12.5		15.5	GHz
P1dB	Output Power at 1dB Gain Compression	25.0	26.5		dBm
G <sub>ss</sub>	Small Signal Gain	13.0	15.0		dB
OIMD3	Output 3 <sup>rd</sup> Order Intermodulation Distortion @Δf=10MHz, Each Tone Pout 16.5dBm		-40	-37	dBc
Input RL	Input Return Loss		-14	-10	dB
Output RL	Output Return Loss		-12	-10	dB
I <sub>dss</sub>	Saturate Drain Current V <sub>DS</sub> =3V, V <sub>GS</sub> =0V	495	619	743	mA
V <sub>DD</sub>	Power Supply Voltage		7	8	V
R <sub>th</sub>	Thermal Resistance (Au-Sn Eutectic Attach)		15		°C/W
T <sub>b</sub>	Operating Base Plate Temperature	-35		+85	°C

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

SYMBOL	CHARACTERISTIC	VALUE
V <sub>DS</sub>	Drain to Source Voltage	8 V
V <sub>GS</sub>	Gate to Source Voltage	-4 V
I <sub>DD</sub>	Drain Current	I <sub>dss</sub>
I <sub>GSF</sub>	Forward Gate Current	7.5mA
P <sub>IN</sub>	Input Power	@ 3dB compression
T <sub>CH</sub>	Channel Temperature	150°C
T <sub>STG</sub>	Storage Temperature	-65/150°C
P <sub>T</sub>	Total Power Dissipation	7.9W

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<sub>HS</sub> = ambient temperature

Specifications are subject to change without notice.

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Revised May 2008



# EMP213-P1

UPDATED: 05/15/2008

## 12.5 – 15.5 GHz Power Amplifier MMIC

### DISCLAIMER

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EXCELICS SEMICONDUCTOR PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF EXCELICS SEMICONDUCTOR, INC.

AS HERE IN:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, or (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.
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.

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