



# EMP114-P1

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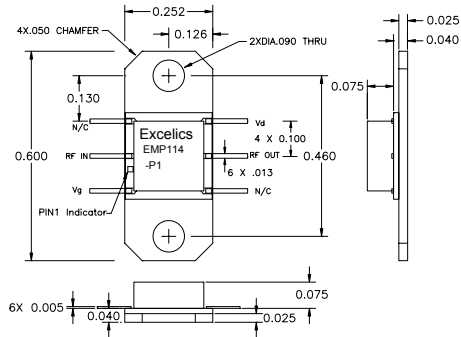
## 7.0 – 9.0 GHz Power Amplifier MMIC

### FEATURES

- 7.0 – 9.0 GHz Operating Frequency Range
- 30.0dBm Output Power at 1dB Compression
- 18.0 dB Typical Small Signal Gain
- -40dBc OIMD3 @Each Tone Pout 20dBm

### 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, V<sub>DD</sub>= 7 V, I<sub>DQ</sub>= 800 mA)

SYMBOL	PARAMETER/TEST CONDITIONS	MIN	TYP	MAX	UNITS
<b>F</b>	Operating Frequency Range	7.0		9.0	GHz
<b>P1dB</b>	Output Power at 1dB Gain Compression	28.5	30.0		dBm
<b>G<sub>ss</sub></b>	Small Signal Gain	16.0	18.0		dB
<b>OIMD3</b>	Output 3 <sup>rd</sup> Order Intermodulation Distortion @Δf=10MHz, Each Tone Pout 20dBm		-40		dBc
<b>Input RL</b>	Input Return Loss		-12		dB
<b>Output RL</b>	Output Return Loss		-6		dB
<b>I<sub>dss</sub></b>	Saturate Drain Current V <sub>DS</sub> =3V, V <sub>GS</sub> =0V	992	1240	1488	mA
<b>V<sub>DD</sub></b>	Power Supply Voltage		7	8	V
<b>R<sub>th</sub></b>	Thermal Resistance (Au-Sn Eutectic Attach)		7.5		°C/W
<b>T<sub>b</sub></b>	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	18 mA
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	15.2W

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<sub>DS</sub>\*I<sub>DS</sub> < (T<sub>CH</sub> -T<sub>HS</sub>)/R<sub>TH</sub>; where T<sub>HS</sub> = ambient temperature

Specifications are subject to change without notice.

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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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