



# EMP214-P1

UPDATED 02/08/2005

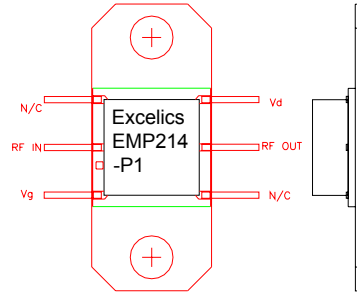
## 12.50 – 15.50 GHz Power Amplifier MMIC

### FEATURES

- 12.5 – 15.5 GHz Operating Frequency Range
- 29.0dBm Output Power at 1dB Compression
- 15.0 dB Typical Small Signal Gain
- -40dBc OIMD3 @Each Tone Pout 19dBm

### 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 ( $T_a = 25\text{ }^\circ\text{C}$ , 50 ohm, VDD=7V, IDQ=800mA)

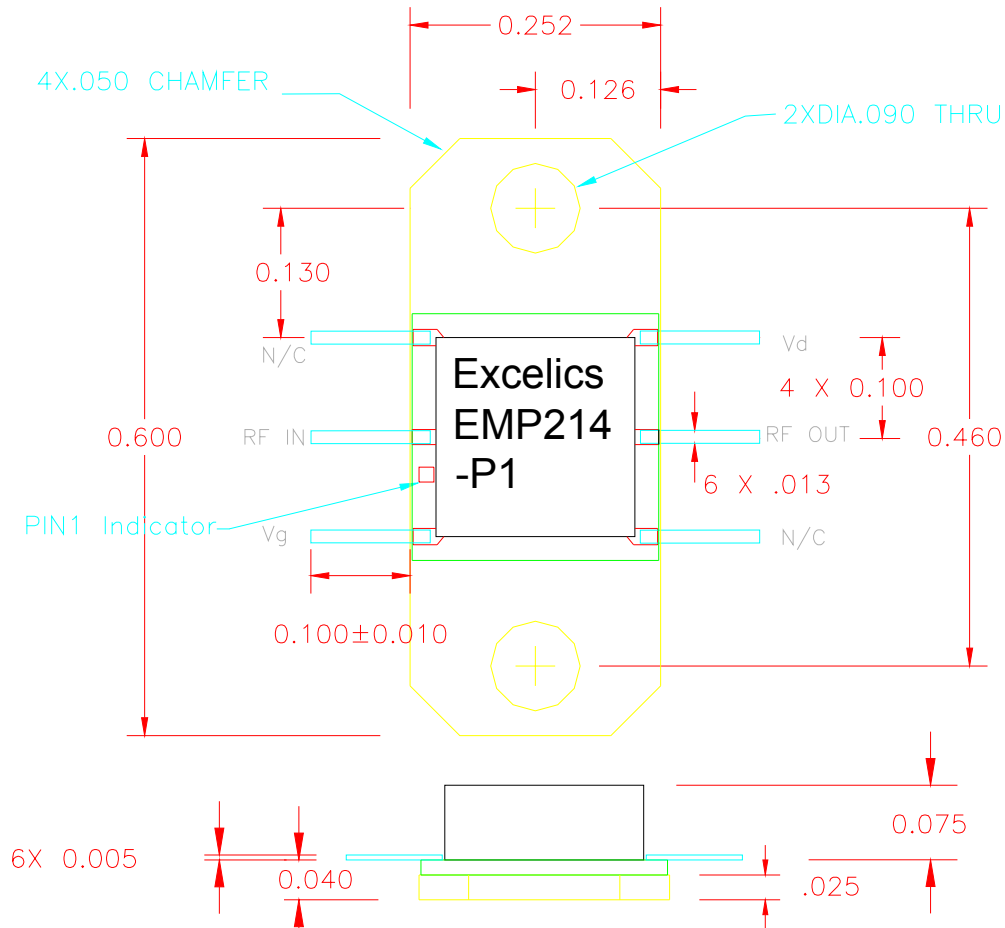
SYMBOL	PARAMETER/TEST CONDITIONS	MIN	TYP	MAX	UNITS	
F	Operating Frequency Range	EMP214	12.5		15.5	GHz
		EMP214H	13.5		15.5	
		EMP214L	12.5		14.5	
P1dB	Output Power at 1dB Gain Compression	27.5	29.0		dBm	
Gss	Small Signal Gain	12.0	15.0		dB	
OIMD3	Output 3 <sup>rd</sup> Order Intermodulation Distortion @ $\Delta f=10\text{MHz}$ , Each Tone Pout 19dBm		-40	-37	dBc	
Input RL	Input Return Loss		-15	-10	dB	
Output RL	Output Return Loss		-15	-10	dB	
Idss	Saturate Drain Current $V_{DS} = 3\text{V}$ , $V_{GS} = 0\text{V}$	990	1238	1486	mA	
VDD	Power Supply Voltage		7	8	V	
Rth	Thermal Resistance (Au-Sn Eutectic Attach)		7.5		$^\circ\text{C/W}$	
Tb	Operating Base Plate Temperature	-35		+85	$^\circ\text{C}$	

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

SYMBOL	CHARACTERISTIC	VALUE
$V_{DS}$	Drain to Source Voltage	8 V
$V_{GS}$	Gate to Source Voltage	-4 V
$I_{DD}$	Drain Current	Idss
$I_{GSF}$	Forward Gate Current	15mA
$P_{IN}$	Input Power	@ 3dB compression
$T_{CH}$	Channel Temperature	150 $^\circ\text{C}$
$T_{STG}$	Storage Temperature	-65/150 $^\circ\text{C}$
$P_T$	Total Power Dissipation	15.8W

1. Operating the device beyond any of the above rating may result in permanent damage.  
2. Bias conditions must also satisfy the fol

### Package Outline



Unless Otherwise specified  
 Dimensions are in inches  
 Tolerances are ±0.003

### Ordering Information

Part Number	Frequency (GHz)
EMP214-P1	12.50-15.50 GHz
EMP214H-P1	13.50-15.50 GHz
EMP214L-P1	12.50-14.50 GHz

Notes: Contact factory for military and hi-rel grades.