EMP107-P1

UPDATED: 05/15/2008

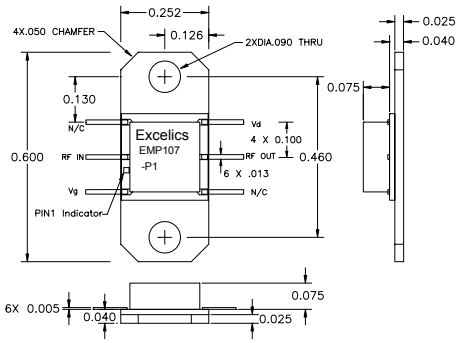
5.9 – 7.9 GHz Power Amplifier MMIC

FEATURES

- **5.9 – 7.9 GHz Operating Frequency Range**
- **24.0dBm Output Power at 1dB Compression**
- **19.0 dB Typical Small Signal Gain**
- **-40dBc OIMD3 @Each Tone Pout 14dBm**

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 °C, 50 ohm, VDD= 7 V, IDQ= 200 mA)

SYMBOL	PARAMETER/TEST CONDITIONS	MIN	TYP	MAX	UNITS
F	Operating Frequency Range	5.9		7.9	GHz
P1dB	Output Power at 1dB Gain Compression	22.5	24.0		dBm
Gss	Small Signal Gain	17.0	19.0		dB
OIMD3	Output 3rd Order Intermodulation Distortion @Δf=10MHz, Each Tone Pout 14dBm		-40		dBc
Input RL	Input Return Loss		-12		dB
Output RL	Output Return Loss		-6		dB
Idss	Saturate Drain Current V_{DS} =3V, V_{GS} =0V	244	305	366	mA
V_{DD}	Power Supply Voltage		7	8	V
Rth	Thermal Resistance (Au-Sn Eutectic Attach)		30		°C/W
Tb	Operating Base Plate Temperature	- 35		+ 85	ºC

ABSOLUTE MAXIMUM RATINGS FOR CONTINUOUS OPERATION[1,2]

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	4.5 mA
P_{IN}	Input Power	@ 3dB compression
T_{CH}	Channel Temperature	150°C
T_{STG}	Storage Temperature	-65/150°C
P_T	Total Power Dissipation	3.8W

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_{HS} = ambient temperature

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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.