



EMP312-P1

ISSUED DATE: 07-01-04

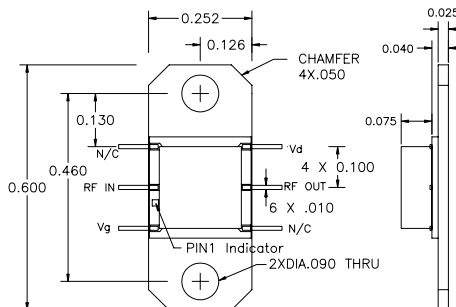
21.0 – 24.0 GHz Power Amplifier MMIC

FEATURES

- 21.0 – 24.0 GHz Operating Frequency Range
- 28.0dBm Output Power at 1dB Compression
- 12.0 dB Typical Small Signal Gain
- -40dBc OIMD3 @Each Tone Pout 18dBm

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=7V, IDQ=760mA)

SYMBOL	PARAMETER/TEST CONDITIONS	MIN	TYP	MAX	UNITS
F	Operating Frequency Range	21.0		24.0	GHz
P1dB	Output Power at 1dB Gain Compression	26.5	28.0		dBm
G _{ss}	Small Signal Gain	9.0	12.0		dB
OIMD3	Output 3 rd Order Intermodulation Distortion @Δf=10MHz, Each Tone Pout 18dBm		-40	-37	dBc
Input RL	Input Return Loss		-15	-10	dB
Output RL	Output Return Loss		-15	-10	dB
I _{dss}	Saturate Drain Current V _{DS} =3V, V _{GS} =0V	858	1072	1288	mA
V _{DD}	Power Supply Voltage		7	8	V
R _{th}	Thermal Resistance (Au-Sn Eutectic Attach)		8		°C/W
T _b	Operating Base Plate Temperature	-35		+85	°C

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	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. Operating the device beyond any of the above rating may result in permanent damage.
 2. Bias conditions must also satisfy the following equation $V_{DS} \cdot I_{DS} < (T_{CH} - T_{HS}) / R_{TH}$; where T_{HS} = ambient temperature

Specifications are subject to change without notice.