

ISSUED 05/06/2005

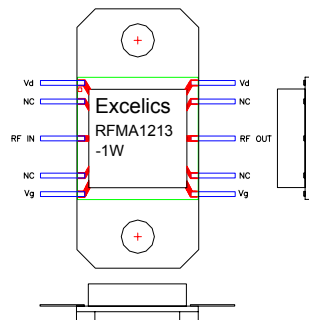
12.70 – 13.30 GHz Power Amplifier MMIC

FEATURES

- 12.70–13.30GHz Operating Frequency Range
- 29.5dBm Output Power at 1dB Compression
- 29.0 dB Typical Power Gain @ 1dB Gain Compression
- -41dBc Typical OIM3 @ each tone Pout 18.5dBm

APPLICATIONS

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



Different Packages Are Available



Caution! ESD sensitive device.

ELECTRICAL CHARACTERISTICS (T_a = 25 °C, 50 ohm, V_{dd}=7V, V_{gg}=-5V)

SYMBOL	PARAMETER/TEST CONDITIONS	MIN	TYP	MAX	UNITS
F	Operating Frequency Range	12.7		13.3	GHz
P1dB	Output Power at 1dB Gain Compression	28.5	29.5		dBm
G1dB	Gain @1dB gain compression	26	29		dB
OIMD3	Output 3 rd Order Intermodulation Distortion @Δf=10MHz, Each Tone Pout 18.5dBm		-41	-38	dBc
Input RL	Input Return Loss		-12	-8	dB
Output RL	Output Return Loss		-15		dB
I_{dd}	Drain Current		900	1050	mA
V_{dd}	Drain Supply Voltage		7	8	V
V_{gg}	Gate Supply Voltage		-5		V
R_{th}	Thermal Resistance (Au-Sn Eutectic Attach)		7	7.5	°C/W
T_b	Operating Base Plate Temperature	-30		+80	°C

MAXIMUM RATINGS AT 25°C

SYMBOL	CHARACTERISTIC	ABSOLUTE	CONTINUOUS ^{1,2}
V _{dd}	Drain Supply Voltage	12V	8V
V _{gg}	Gate Supply Voltage	-8V	-3 V
I _{dd}	Drain Current	I _{dss}	1.9A
I _{gg}	Gate Current	132mA	22 mA
P _{IN}	Input Power	20dBm	@ 3dB compression
T _{CH}	Channel Temperature	175°C	150°C
T _{STG}	Storage Temperature	-65/175°C	-65/150°C
P _T	Total Power Dissipation	15.0W	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 $V_{dd} \cdot I_{dd} < (T_{CH} - T_{HS}) / R_{TH}$, where T_{HS} = Base Plate temperature

Specifications are subject to change without notice.

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