1.9GHz Band GaAs Power Amplifier IC

DESCRIPTION

MGF7121 is a monolithic microwave integrated circuit for use in 1.9GHz band power amplifiers.

APPLICATION

- RF output stage of Japan digital Cordless Telephone

FEATURES

- High output power (P_o = 22dBm)
- Small size (8.4 x 13.2 x 1.7mm^3), surface mount package
- Low supply voltage operation (V_{DD} = 4.6V)
- Enable to control power gain (Gcon ≥ 20dB)

Note: This is not a final specification.
Some parametric limits are subject to change

ABSOLUTE MAXIMUM RATINGS (T_a = 25°C)

SYMBOL	PARAMETER	RATINGS	UNITS
$V_D1, 2 \sim V_D3$	Supply voltage	6.0	V
$V_G1, 2 \sim V_G3$	Gate voltage	−5.5	V
$I_D1, 2 \sim I_D3$	Dissipation current	400	mA
P_{IN}	Input power	−5.0	dBm
$T_{c\,(op)}$	Operating temperature	−20 ~ +75	°C
T_{stg}	Storage temperature	−40 ~ +90	°C

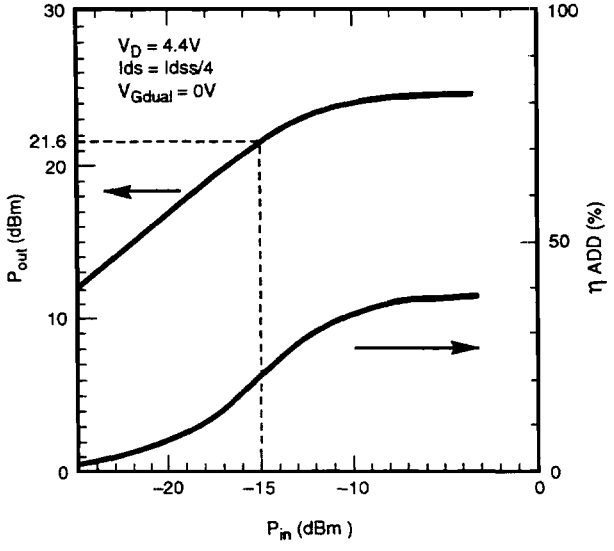
ELECTRICAL CHARACTERISTICS (T_a=25°C)

SYMBOL	ITEM	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
f	Frequency		1.85		1.95	GHz
P_{IN}	Input power			−15		dBm
G_p	Power gain	$V_D1 = V_D2 = V_D3$ = 4.6V,	37			dB
P_{OUT}	Output power	P_{IN} = −15dBm	22			dBm
G_{CON}	Gain control range	Control V_{Gdual}	20			dB
V_{Gdual}	Control voltage		−4.0		0	V
V_{DD}	Supply voltage	$V_D1 = V_D2 = V_D3$		4.6		V
η	Efficiency			30		%

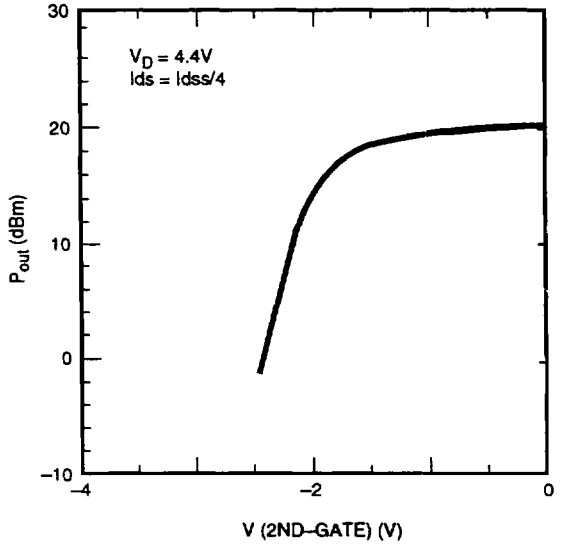
GaAs MMIC

TYPICAL CHARACTERISTICS

Digital – Cordless H/P Amp (TS)

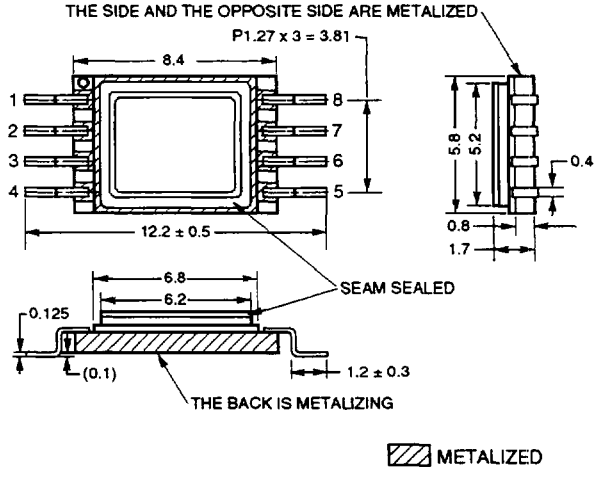


Digital – Cordless H/P Amp (TS)



OUTLINE DRAWING (MMIC for PHP)

Dimensions in mm



Pin Configuration:

1. P_{IN}: RF Input
2. D1: Drain Bias 1
3. D2: Drain Bias 2
4. D3: Drain Bias 3
5. P_{OUT} : RF output
6. G3: Gate Bias 3
7. G_{dual}: Dual Gate Bias
8. G1,2: Gate Bias 1,2

ORDERING INFORMATION

Part Number	Grade	Tested at	P_{1dB}	Notes
MGF7121-01	Industrial	1.85 – 1.95 GHz	22 dBm	