

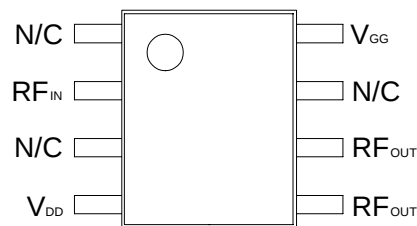
1W GaAs Power Amplifier (5 – 6 GHz)

ITT6402HJ

ADVANCED INFORMATION

FEATURES

- Output power: 30 dBm at 7V; 28 dBm at 5V.
- High Gain: 21 dB typical at P_{1dB} (5.7 GHz, 5V supply)
- High Power Added Efficiency: 39% typical at P_{1dB}
- Surface mount plastic package – suitable for pick and place handling.
- Simple microstrip output match.
- Downset leadframe provides excellent heat dissipation and RF grounding.



MSOP8 Package

DESCRIPTION

The ITT6402HJ is a two stage power amplifier, fabricated on GaAsTEK's self-aligned MSAG[®] MESFET process and mounted in a standard outline MSOP8 plastic package. This product is fully matched to 50 ohms on the input and uses a simple stub-tune on the output. It has been designed specifically for the U-NII and Hiperlan bands.

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

Rating	Symbol	Value	Unit
DC Drain Supply Voltage	V _{DD}	10V	Vdc
DC Gate Supply Voltage	V _{GG}	-4V	Vdc
RF Input Power	P _{IN}	50	mW
Junction Temperature	T _J	+150	°C
Storage Temperature	T _{STG}	-40 to +150	°C

ELECTRICAL CHARACTERISTICS V_{DD}= 7.0 V, V_{GG} = -2 V, P_{IN} = 11 dBm, T_A=25 °C

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency	f	5	—	6	GHz
Output Power, P_{1dB}	P _{1dB}	—	30	—	dBm
Gain, P_{1dB}	G _{1dB}	—	19	—	dB
Gain Flatness over band		—	+/-1	—	dB
Drain Current (Output = P_{1dB} at 5.7 GHz)	I _{DS}	—	396	—	mA
Power Added Efficiency (Output = P_{1dB} at 5.7 GHz)	PAE	—	39	—	%
Input / Output VSWR		—	2:1	—	
Harmonics	$2f_o$		-30		dBc
	$3f_o$		-40		dBc
Noise Figure	NF	—	7	—	dB
Third-Order Intercept Point	IP3	—	40	—	dBm



Specifications subject to change without notice

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TYPICAL CHARACTERISTICS

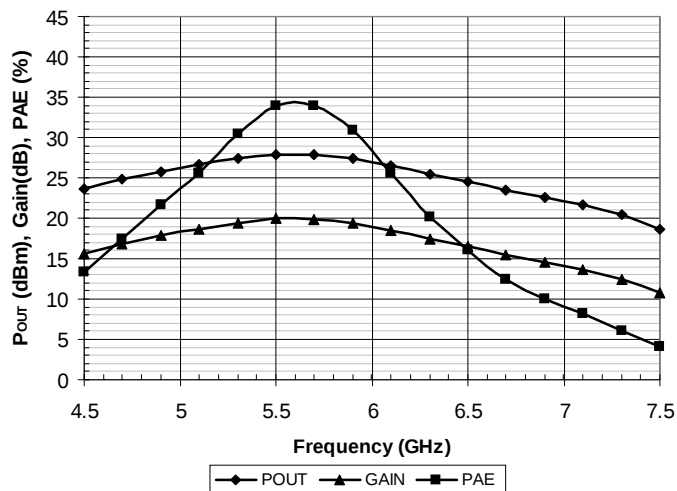


Figure 1. Output Power, Gain, and Efficiency Vs. Frequency

Conditions: $V_{DD} = 5V$, $V_{GG} = -1.8V$, $P_{IN} = 8 \text{ dBm}$

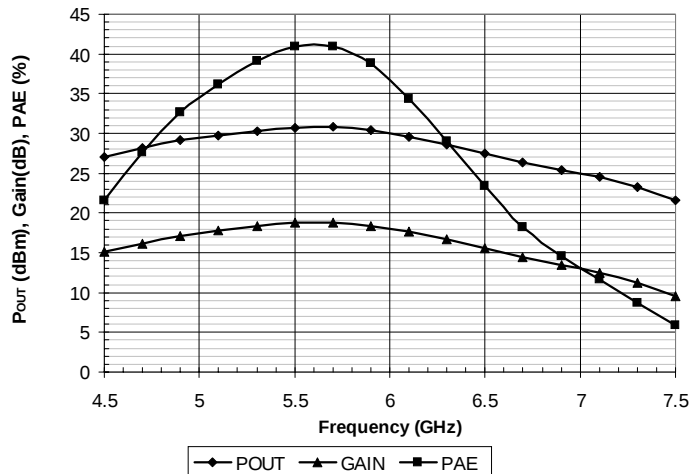


Figure 2. Output Power, Gain, and Efficiency Vs. Frequency

Conditions: $V_{DD} = 7V$, $V_{GG} = -2.0V$, $P_{IN} = 12 \text{ dBm}$

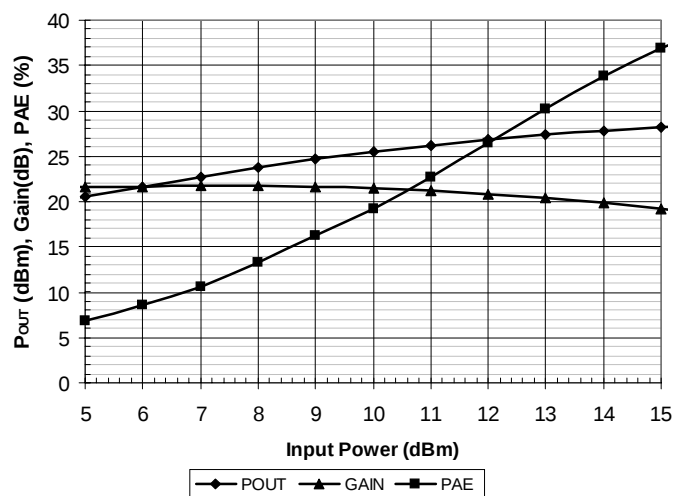


Figure 3. Output Power, Gain, and Efficiency Vs. Input Power

Conditions: $V_{DD} = 5V$, $V_{GG} = -1.8V$, $f = 5.7 \text{ GHz}$

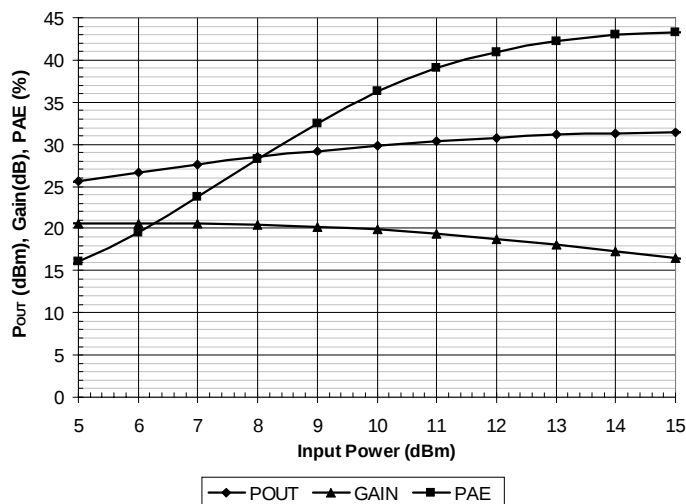


Figure 4. Output Power, Gain, and Efficiency vs. Input Power

Conditions: $V_{DD} = 7V$, $V_{GG} = -2.0V$, $f = 5.7 \text{ GHz}$