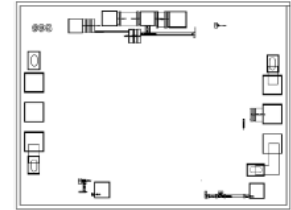


**AMT1204**  
**6 – 18GHz Low Noise Amplifier Chip**



**Key Features :**

- Frequency range : 6 – 18GHz
- Typical gain : 20.5dB (positive slope)
- Input/output standing wave : 1.6
- Noise figure : 1.6dB
- P-1 : 16dBm @ +5V/75mA
- Chip dimensions : 1.40mm x 1.05mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

**Description :**

AMT1204 chip is a Gallium Arsenide (GaAs) high performance Low Noise Amplifier, it covers 6 – 18GHz frequency range. It uses +5V single voltage operation, Noise Figure is 1.6dB, and 20.5dB typical gain. This chip is designed with ground through metal vias on the back technology.

**Absolute Maximum Ratings (Ta = 25°C)**

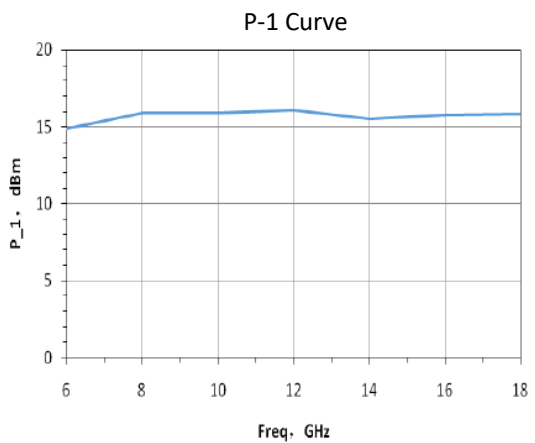
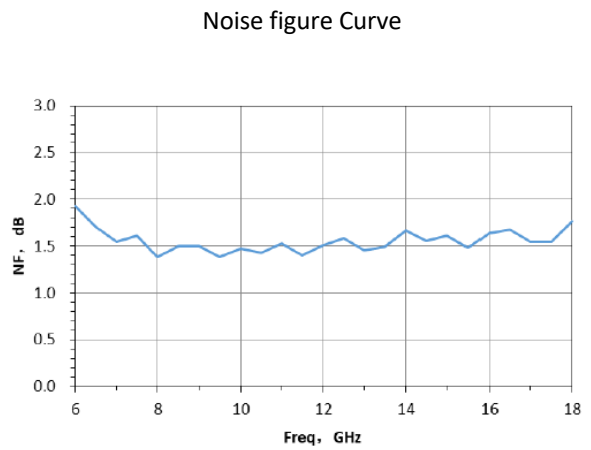
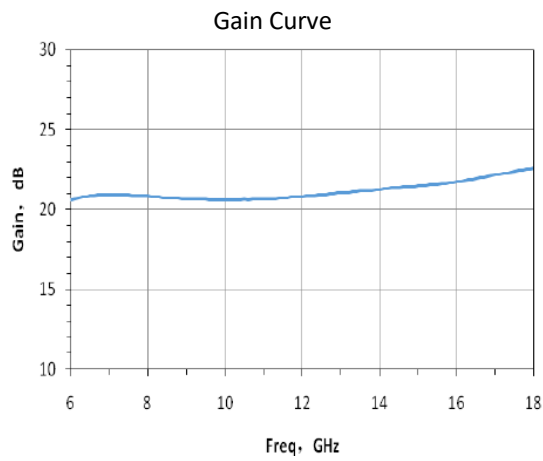
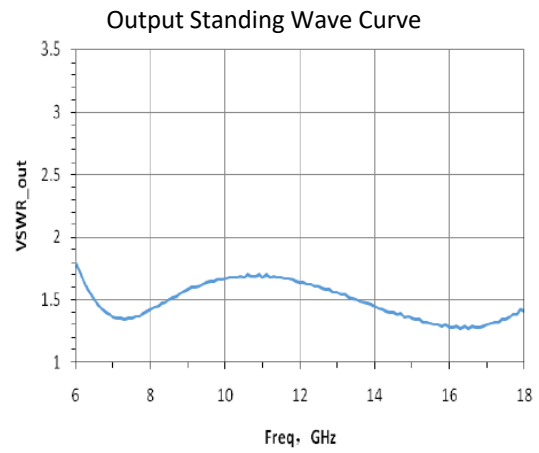
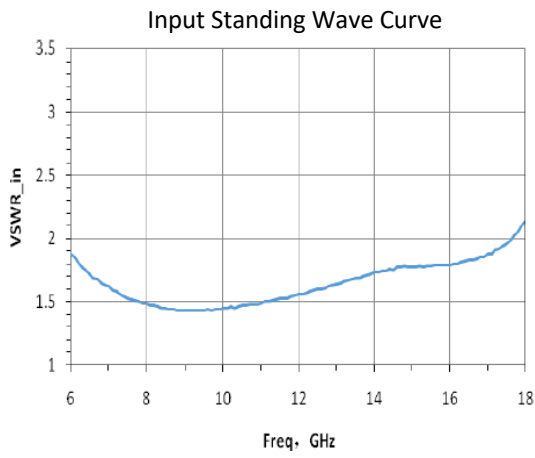
Symbol	Parameter	Value	Remark
Vd	Drain Voltage	7V	
Pin	Input Signal Power	17dBm	
Tch	Operating Temperature	150°C	
Tm	Sintering Temperature	310°C	30s, N2 protection
Tstg	Storage Temperature	-65 ~ +150°C	

[1] Operation outside any of the Absolute Maximum Ratings may cause permanent device damage.

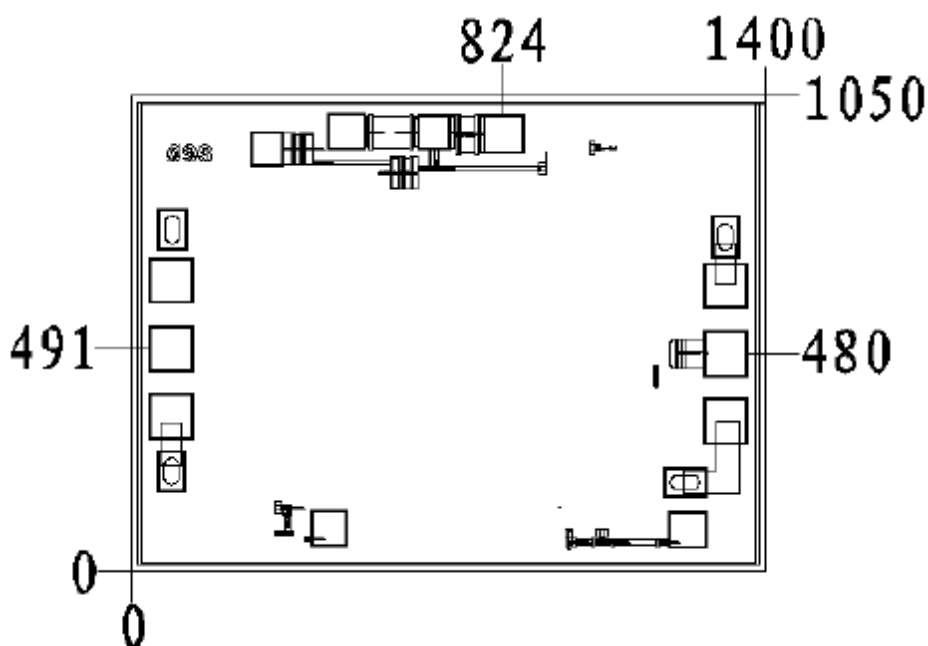
**Electrical Characteristics (Ta = 25°C)**

Symbol	Parameter	Test Conditions	Value			Unit
			Min	Typical	Max	
G	Gain	Vd = +5V F : 6 ~ 18GHz	-	20.5	-	dB
NF	Noise Figure		-	1.6	1.9	dB
Id	Static Current		-	75	-	mA
VSWR_in	Input Standing Wave		-	1.6	2	-
VSWR_out	Output Standing Wave		-	1.6	1.8	-
P-1	Output Power at 1dB point		15	16	-	dBm

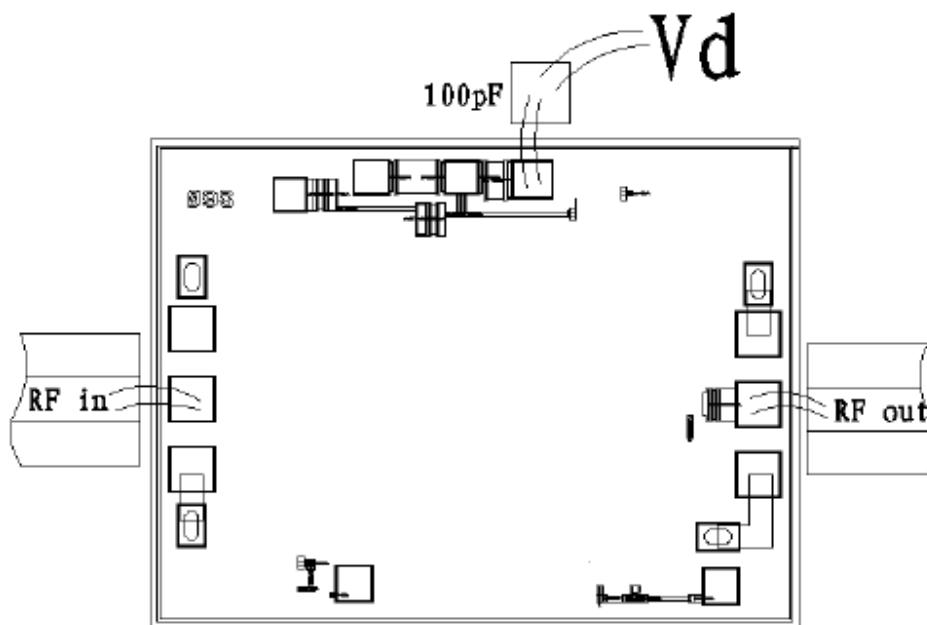
## Typical Performance



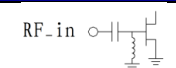
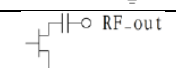

Chip Dimensions (Unit :  $\mu\text{m}$ )



Chip Layout Diagram



### Pad Definition

Symbol	Function	Dimension	Equivalent Circuit
RF_in	RF signal input port, connecting to external $50\Omega$ system. no need to add DC blocking capacitor.	$100*100\mu\text{m}^2$	
RF_out	RF signal output port, connecting to external $50\Omega$ system, no need to add DC blocking capacitor.	$100*100\mu\text{m}^2$	
Vd	Amplifier bias, need to connect external 100pF capacitor.	$100*100\mu\text{m}^2$	

Please see Appendix A for details.