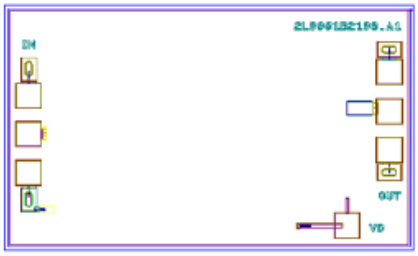
AMT1205
6 – 18GHz Low Noise Amplifier Chip



Key Features :

- Frequency range : 6 – 18GHz
- Typical gain : 21.5dB
- Input/output standing wave : 1.4/1.5
- Noise figure : 1.5dB
- P-1 : 13dBm @ +5V/30mA
- Chip dimensions : 1.6mm x 0.95mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

Description :

AMT1205 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 1.5dB, and 21.5dB 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, N_2 protection
Tstg	Storage Temperature	-65 ~ +150°C	

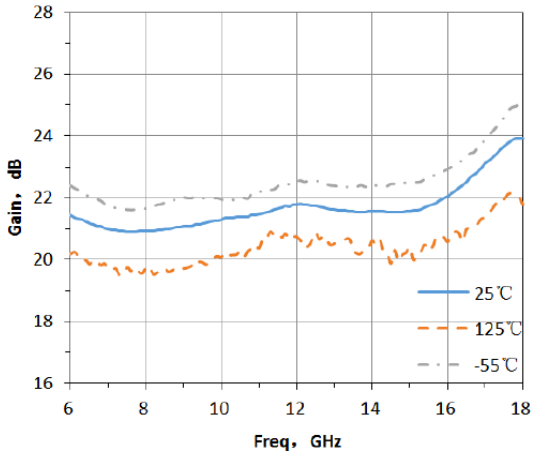
[1] Operation outside any of the Absolute Maximum Ratings may cause permanent device damage.

Electrical Characteristics (Ta = 25°C)

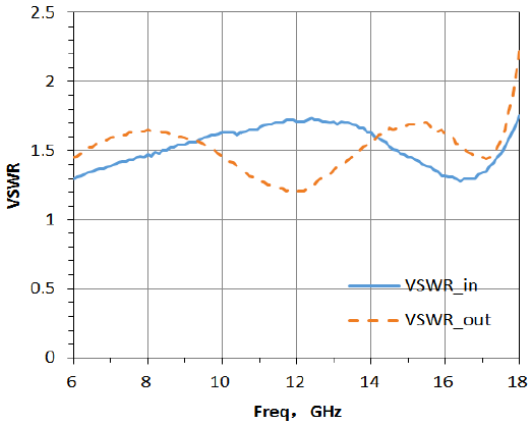
Symbol	Parameter	Test Conditions	Value			Unit
			Min	Typical	Max	
G	Gain	Vd = +5V F : 6 ~ 18GHz	-	21.5	-	dB
NF	Noise Figure		-	1.5	2	dB
Id	Static Current		-	27	-	mA
VSWR_in	Input Standing Wave		-	1.4	1.7	-
VSWR_out	Output Standing Wave		-	1.5	2.2	-
P-1	Output Power at 1dB point		12.5	13	-	dBm

Typical Performance

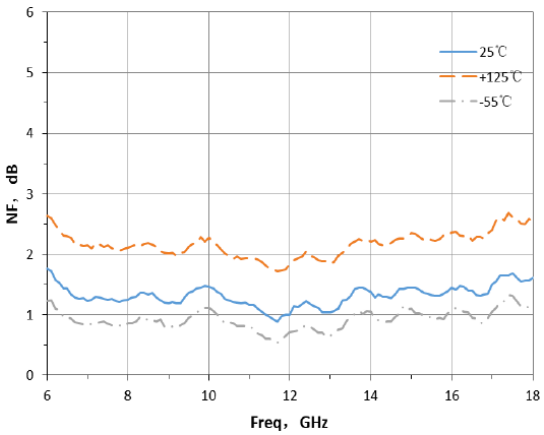
Gain Curve



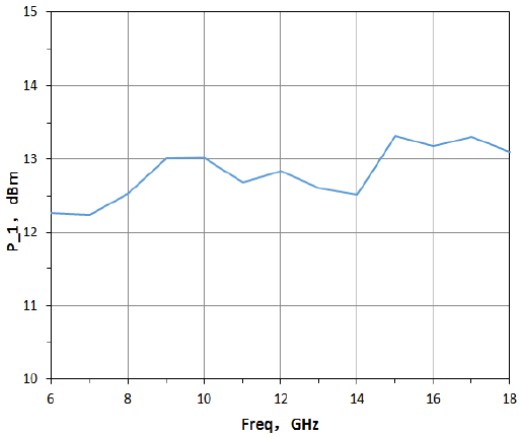
Input/Output Standing Wave Curve



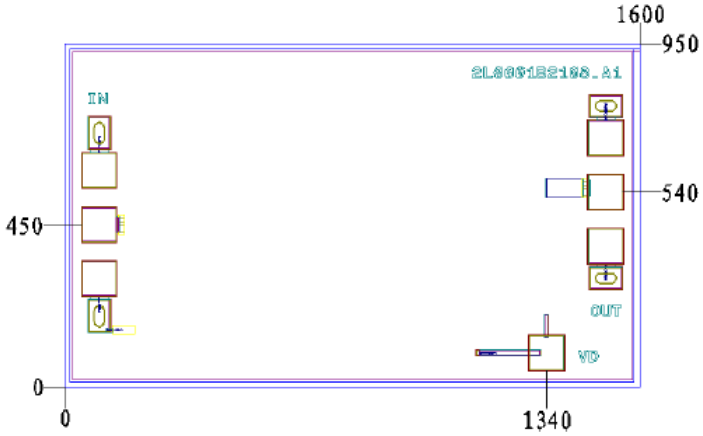
Noise Figure Curve



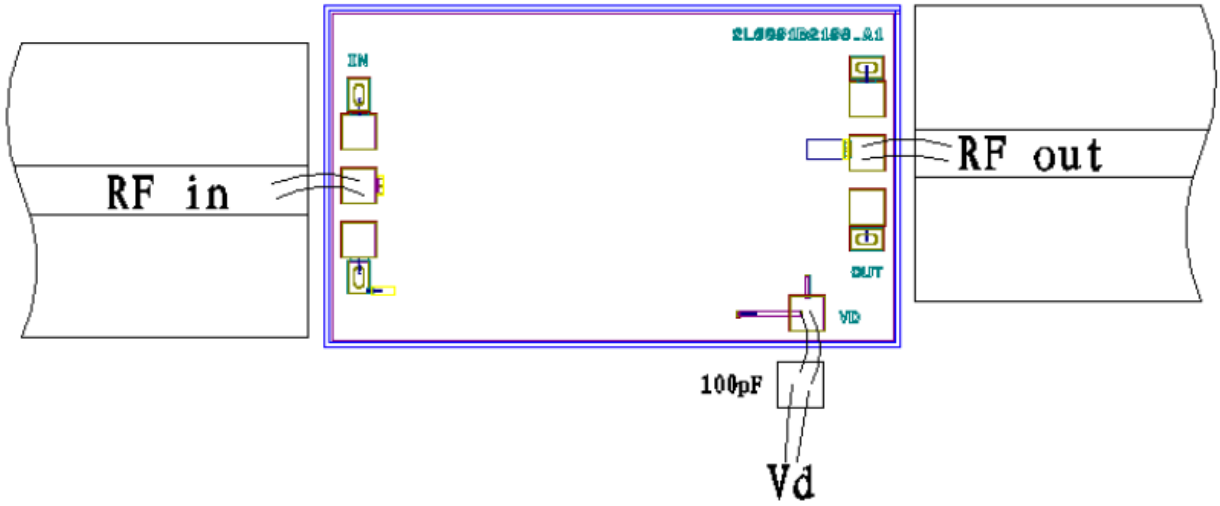
P-1 Compression Characteristic Curve



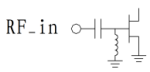
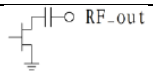
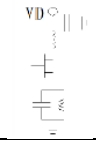
Chip Dimensions (Unit : μm)



Chip Layout Diagram



Pad Definition

Symbol	Function	Dimension	Equivalent Circuit
RF_in	RF signal input port, connecting to external 50Ω system. no need to add DC blocking capacitor.	100*100μm^2	
RF_out	RF signal output port, connecting to external 50Ω system, no need to add DC blocking capacitor.	100*100μm^2	
Vd	Amplifier bias, need to connect external 100pF capacitor.	100*100μm^2	

Please see Appendix A for details.