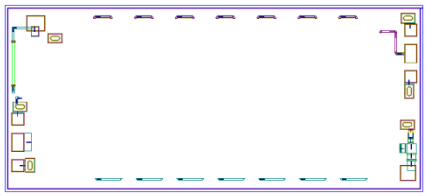
AMT1220
DC – 20GHz Low Noise Amplifier Chip



Key Features :

- Frequency range : DC – 20GHz
- Typical gain : 16dB
- Input standing wave : 1.3
- Output standing wave : 1.3
- Noise figure : 2.5dB
- P-1 : 13dBm @ +5V/52mA
- Chip dimensions : 2.7mm x 1.2mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

Description :

AMT1220 chip is a Gallium Arsenide (GaAs) high performance Low Noise Amplifier, it covers DC – 20GHz frequency range. It uses VD : +5V, VG : -0.4V dual voltage operation, noise figure is 2.5dB, and 16dB 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	15dBm	
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 : DC ~ 20GHz	-	16	-	dB
NF	Noise Figure		-	2.5	4	dB
Id	Static Current		-	52	65	mA
VSWR_in	Input Standing Wave		-	1.3	1.5	-
VSWR_out	Output Standing Wave		-	1.3	1.5	-
P-1	Output Power at 1dB point		11	13	-	dBm

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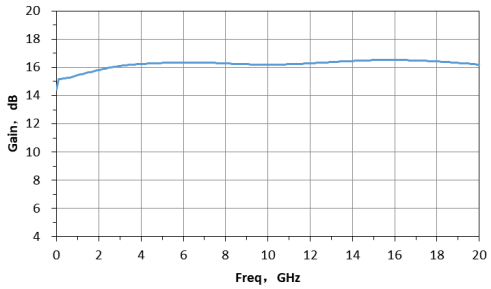
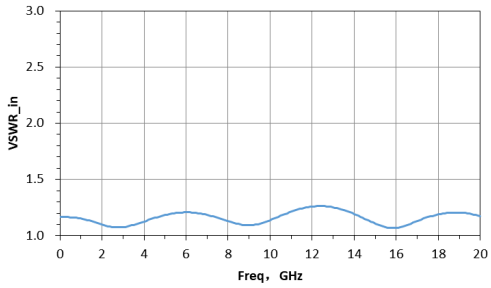
Typical Performance

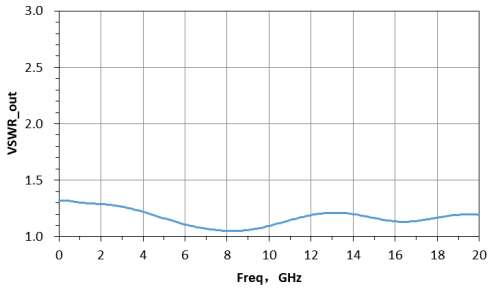
Gain Curve



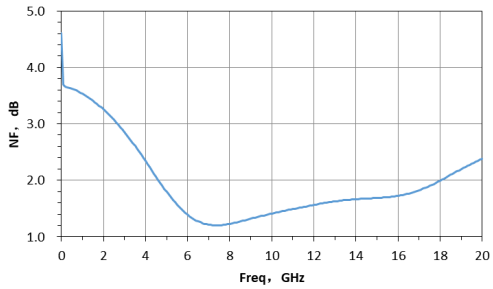
Input Standing Wave Curve



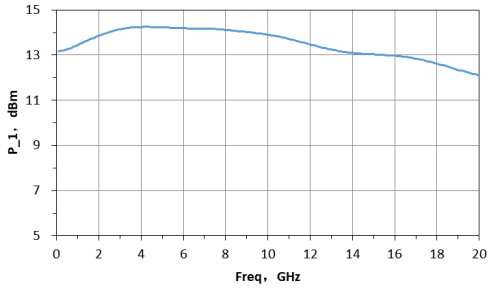
Output Standing Wave Curve



Noise Figure Curve



P-1 Compression Characteristic Curve



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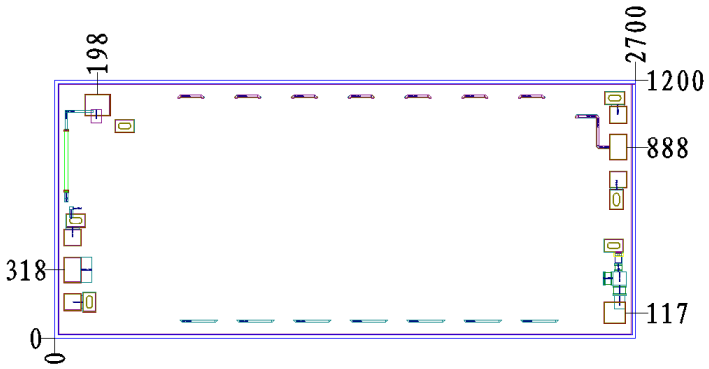
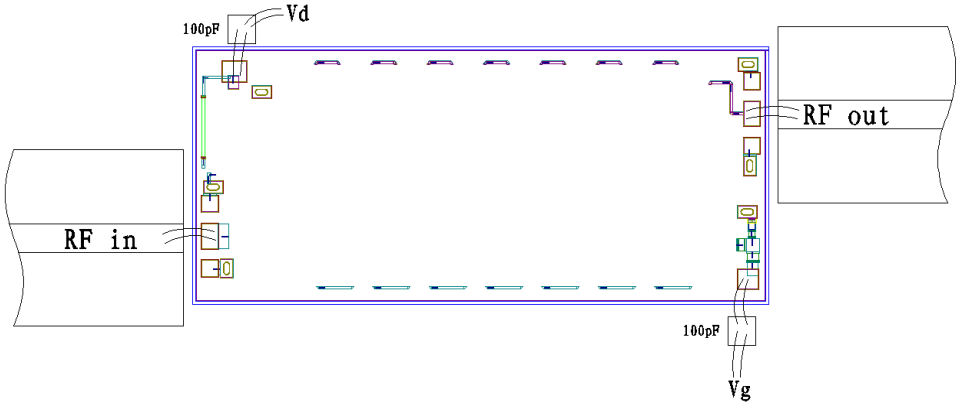
Chip Dimensions (Unit : μm)



Chip Layout Diagram



Please see Appendix A for details.