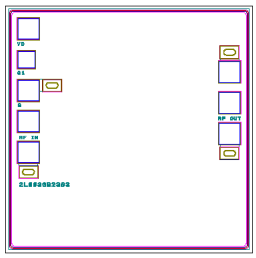
AMT1227
2 – 4GHz Low Noise Amplifier Chip

Key Features :



- Frequency range : 2 – 4GHz
- Typical gain : 29dB
- Input standing wave : 1.5
- Output standing wave : 1.6
- Noise figure : 0.45dB
- P-1 : 11.5dBm @ +5V/32mA
- Chip dimensions : 1.2mm x 1.2mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

Description :

AMT1227 chip is a Gallium Arsenide (GaAs) high performance Low Noise Amplifier, it covers 2 – 4GHz frequency range. It uses +5V single voltage operation, noise figure is 0.45dB, and 29dB 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.

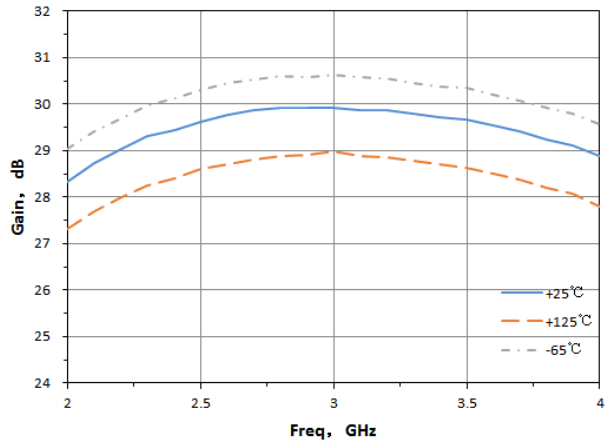
Electrical Characteristics (Ta = 25°C)

Symbol	Parameter	Test Conditions	Value			Unit
			Min	Typical	Max	
G	Gain	Vd = +5V F : 2 ~ 4GHz	-	29	-	dB
NF	Noise Figure		-	0.45	-	dB
Id	Static Current		-	32	-	mA
VSWR_in	Input Standing Wave		-	1.5	-	-
VSWR_out	Output Standing Wave		-	1.6	-	-
P-1	Output Power at 1dB point		-	11.5	-	dBm

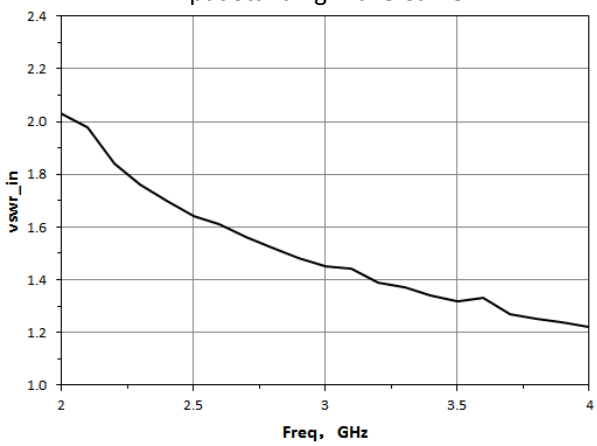
AMT1227
2 – 4GHz Low Noise Amplifier Chip

Typical Performance

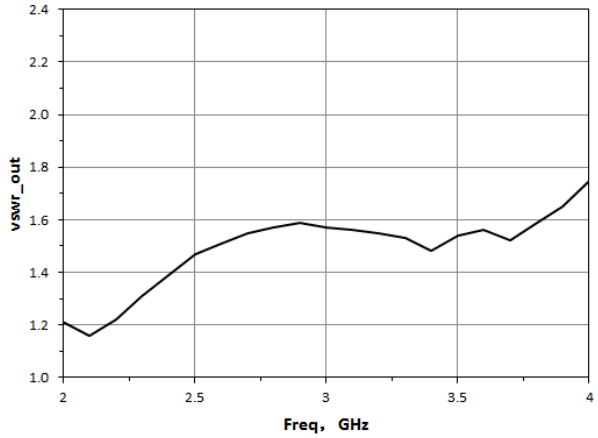
Linear Gain Curve



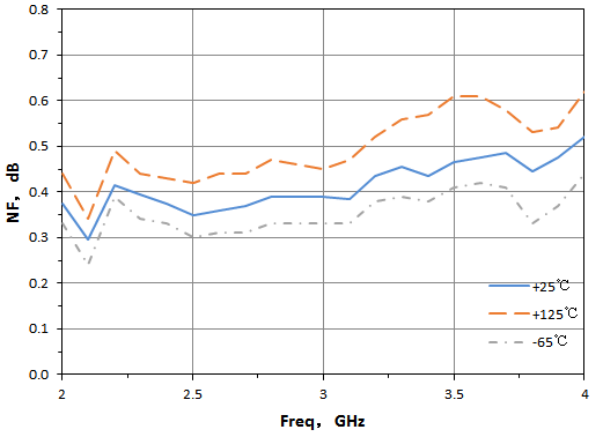
Input Standing Wave Curve



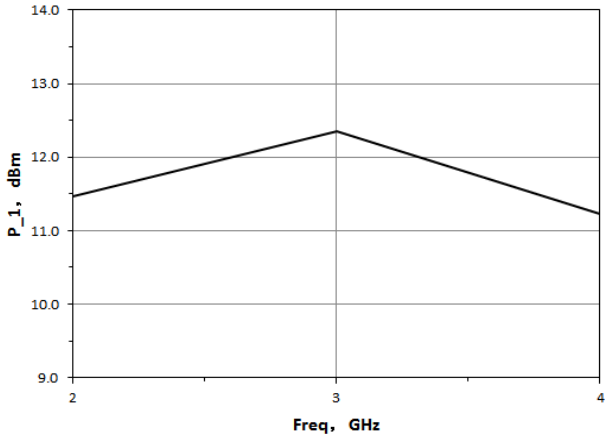
Output Standing Wave Curve



Noise Figure Curve

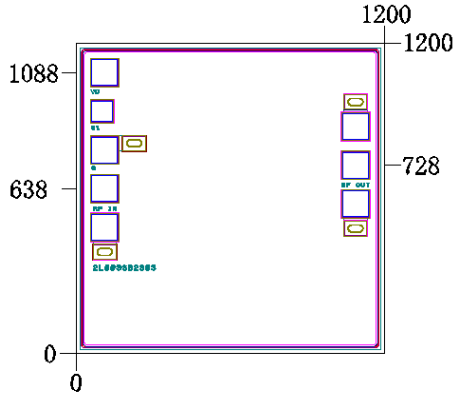


P-1 Compression Characteristic Curve

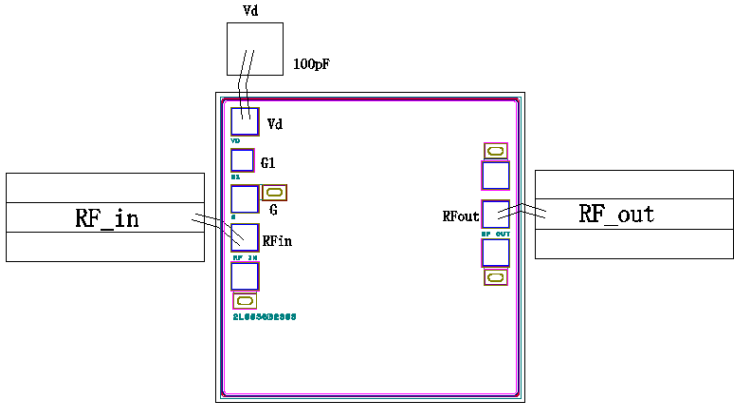


AMT1227
2 – 4GHz Low Noise Amplifier Chip

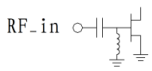
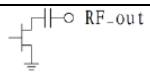
Chip Dimensions (Unit : μm)



Chip Layout Diagram



Pad Definition

Symbol	Function Description	Demensions	Equivalent Circuit
RFin	RF signal input port, connecting to external 50Ω system, need to add DC blocking capacitor.	100μm*100μm	
RFout	RF signal output port, connecting to external 50Ω system, need to add DC blocking capacitor.	100μm*100μm	
Vd	Amplifier bias, need to connect 100pF external capacitor	100μm*100μm	

Please see Appendix A for details.