AMT1236
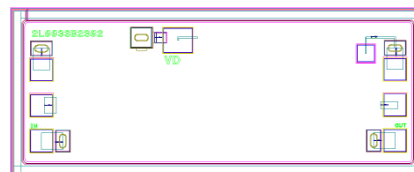**22 – 30GHz Low Noise Amplifier Chip**

Key Features :

- Frequency range : 22 – 30GHz
- Typical gain : 24dB
- Input standing wave : 1.3
- Output standing wave : 1.3
- Noise figure : 1.5dB
- P-1 : 2dBm @ +5V/13mA
- Chip dimensions : 1.7mm x 0.65mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

Description :

AMT1236 chip is a Gallium Arsenide (GaAs) high performance Low Noise Amplifier, it covers 22 – 30GHz frequency range. It uses +5V single voltage operation, noise figure is 1.5dB, and 24dB typical gain. This chip is designed with ground through metal vias on the back technology.
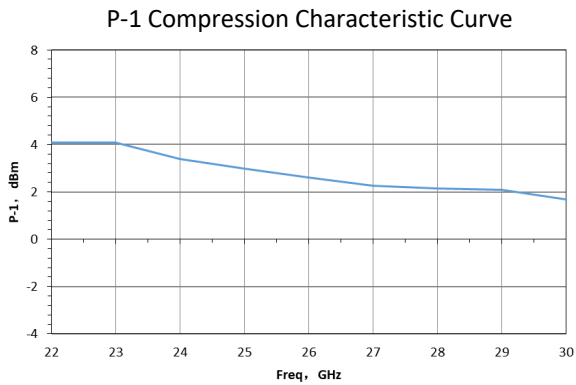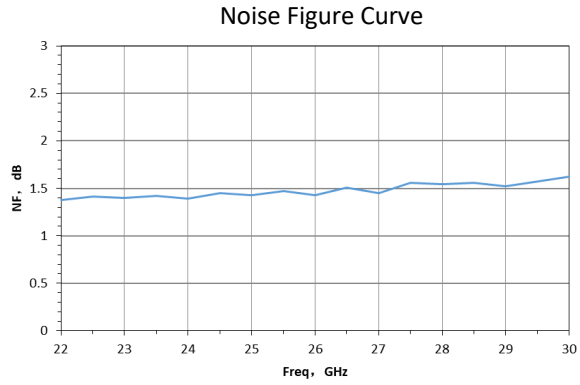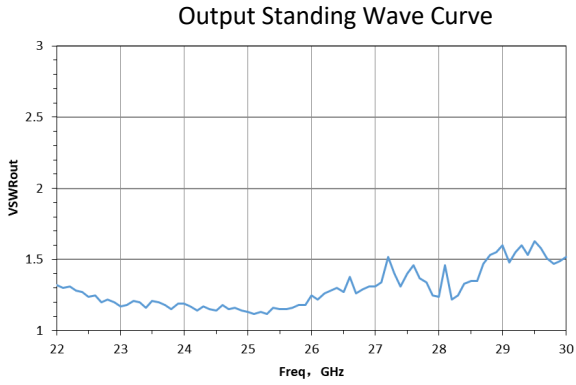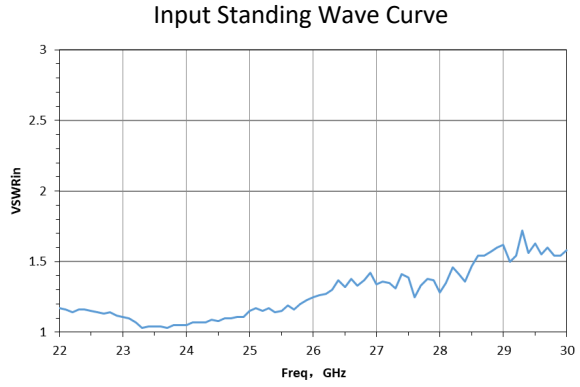
Absolute Maximum Ratings (Ta = 25°C)

Symbol	Parameter	Value	Remark
Vd	Drain Voltage	+6V	
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	

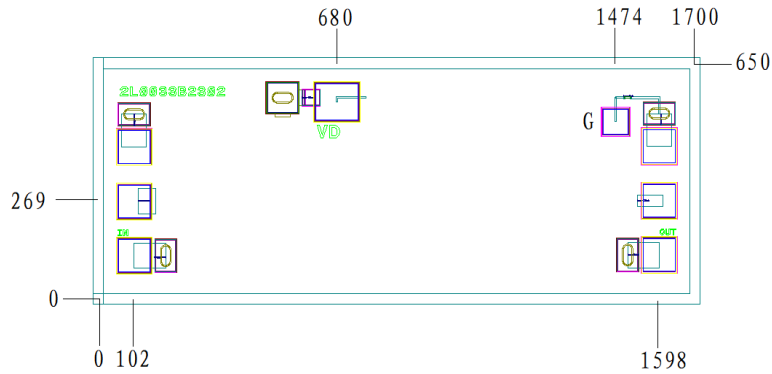[1] Operation outside any of the Absolute Maximum Ratings may cause permanent device damage.

Electrical Characteristics (Ta = 25°C)

Symbol	Parameter	Test Conditions	Value			Unit
			Min	Typical	Max	
G	Gain	Vd = +5V F : 22 ~ 30GHz	-	24	-	dB
NF	Noise Figure		-	1.5	-	dB
Id	Static Current		-	13	-	mA
VSWR_in	Input Standing Wave		-	1.3	1.6	-
VSWR_out	Output Standing Wave		-	1.3	-	-
P-1	Output Power at 1dB point		-	2	-	dBm

Typical Performance

Gain Curve

Input Standing Wave Curve

Output Standing Wave Curve

Noise Figure Curve

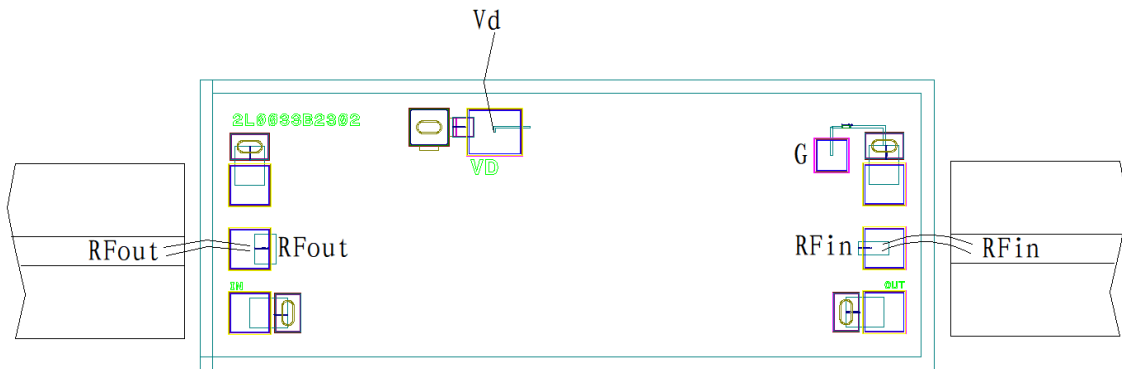### P-1 Compression Characteristic Curve
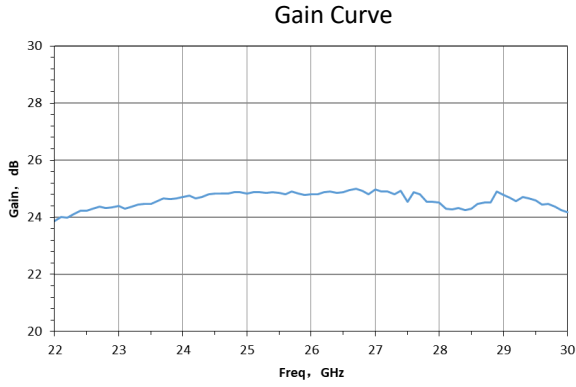
Chip Dimensions (Unit : μm)

Chip Layout Diagram

Pad Definition

Symbol	Function Description	Demensions	Equivalent Circuit
RFin	RF signal input port, connecting to external 50Ω system, no need to add DC blocking capacitor.	100μm*100μm	
RFout	RF signal output port, connecting to external 50Ω system, no 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.

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