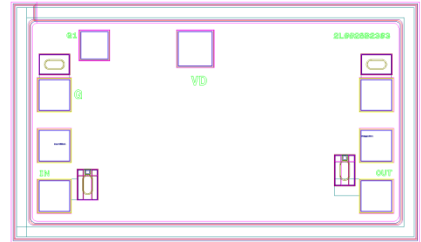


**AMT1234**  
**12 – 18GHz Balanced Type Low Noise Amplifier Chip**

**Key Features :**

- Frequency range : 12 – 18GHz
- Typical gain : 21dB
- Input/Output standing wave : 1.4
- Noise figure : 1.0dB
- P-1 : 11dBm @ +5V/35mA
- Chip dimensions : 1.4mm x 2.0mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.



**Description :**

AMT1234 chip is a Gallium Arsenide (GaAs) high performance Low Noise Amplifier, it covers 12 – 18GHz frequency range. It uses +5V single voltage operation, noise figure is 1dB, and 21dB typical gain. This chip is designed with ground through metal vias on the back technology. All chip products are 100% RF tested.

**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 <sub>2</sub> protection
Tstg	Storage Temperature	-65 ~ +150°C	

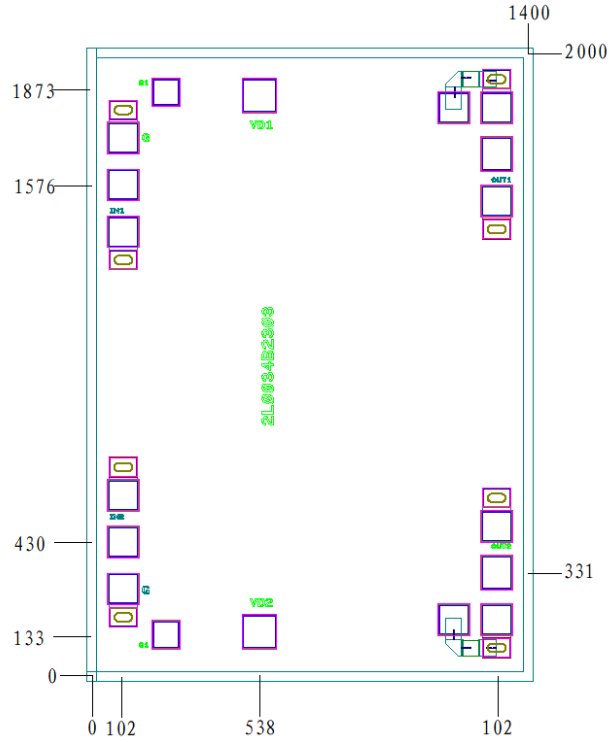
[1] Operation outside any of the Absolute Maximum Ratings may cause permanent device damage.

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

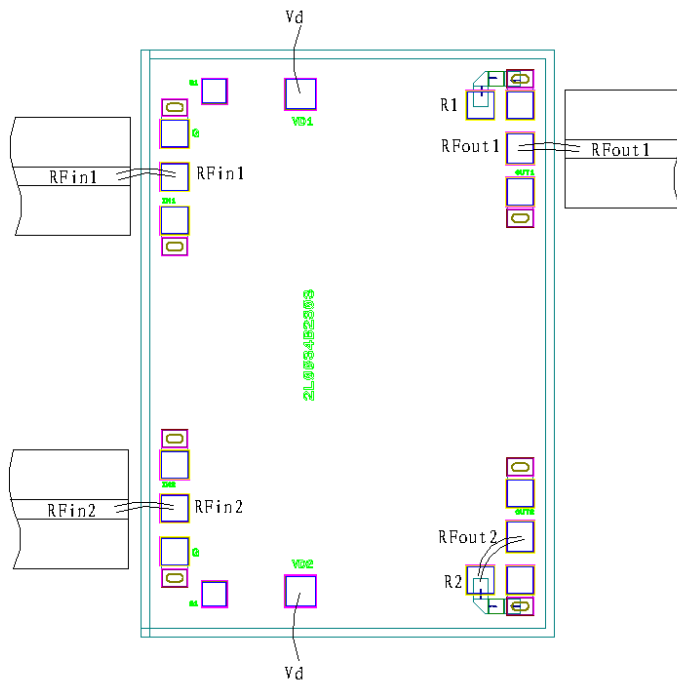
Symbol	Parameter	Test Conditions	Value			Unit
			Min	Typical	Max	
G	Gain	Vd = +5V F : 12 ~ 18GHz	-	21	-	dB
NF	Noise Figure		-	1.0	-	dB
Id	Static Current		-	35	-	mA
VSWR_in	Input Standing Wave		-	1.4	-	-
VSWR_out	Output Standing Wave		-	1.4	-	-
P-1	Output Power at 1dB point		-	11	-	dBm

**AMT1234**  
**12 – 18GHz Balanced Type Low Noise Amplifier Chip**

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



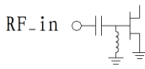
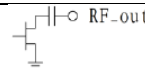

**Chip Layout Diagram**



Note : R1, R2 are built-in 50 $\Omega$  load resistors, this chip can be mirror used.

## 12 – 18GHz Balanced Type Low Noise Amplifier Chip

## 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	
R	Built in 50Ω load resistance, connect to respective RFout pad.	100μm*100μm	-

Please see Appendix A for details.