Key Features :
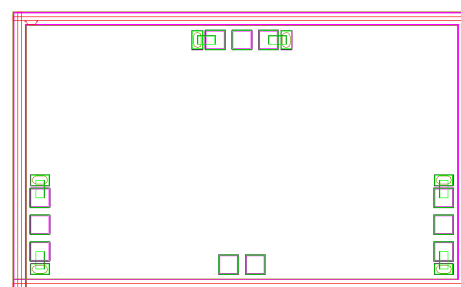
- Frequency range : 7 – 13GHz
- Insertion loss : 0.9dB
- Isolation : 40dB
- Input/output standing wave : 1.4
- Control method : 0/-40V
- Chip dimensions : 2.5mm x 1.5mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

Description :

AMT2304 chip is a voltage controlled reflection SPDT switch chip (MMIC), the design is based on Gallium Nitrate (GaN) HEMT process, with ground through metal via on the back technology. All chip products are 100% RF tested. The chip uses 0V, -40V level control, typical insertion loss 0.9dB, isolation 40dB, Input/Output VSWR 1.4.

Absolute Maximum Ratings

| Symbol	Parameter	Value	Remark
V1, V2	Control Voltage	0.6V/-50V	
Pin	Input Power	43dBm	
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)

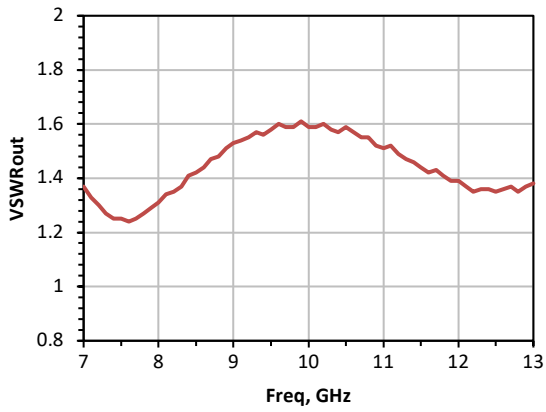| Symbol	Parameter	Value			Unit
		Min	Typical	Max	
VSWRin	Input Standing Wave	1.5	1.4	-	
VSWRout	Output Standing Wave	1.6	1.4	-	
IL	Insertion Loss	-	0.9	1	dB
ISO	Isolation	34	40	-	dB

Typical Performance
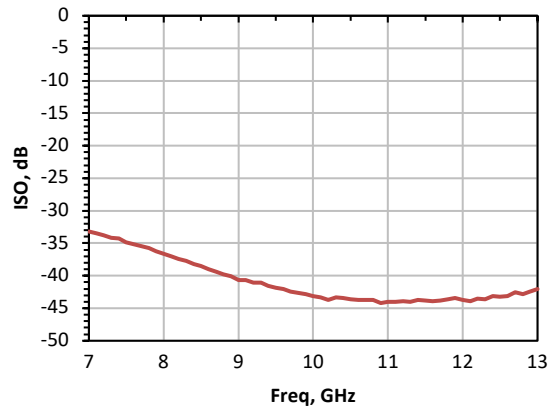
Insertion Loss Curve
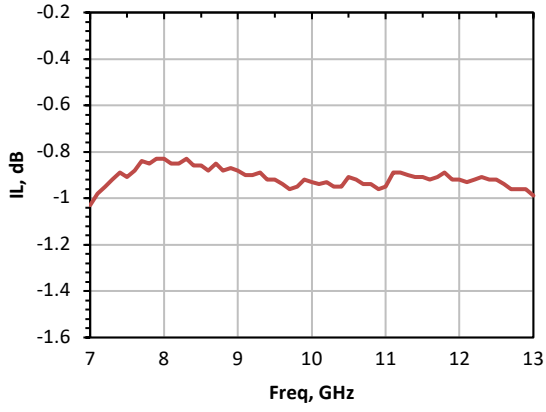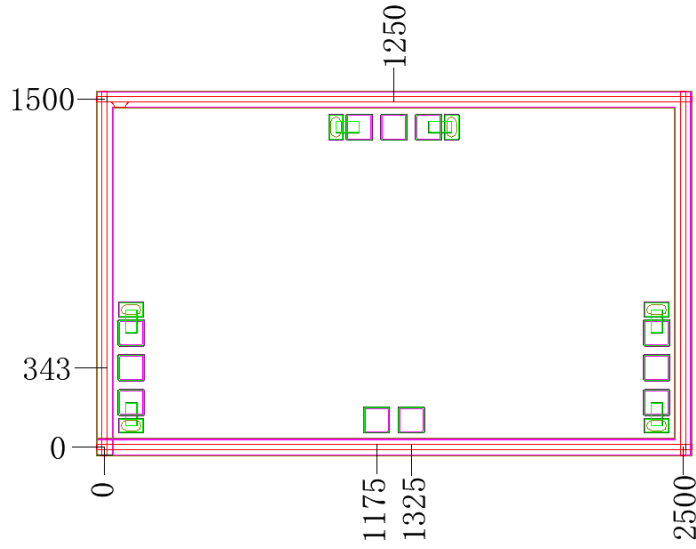
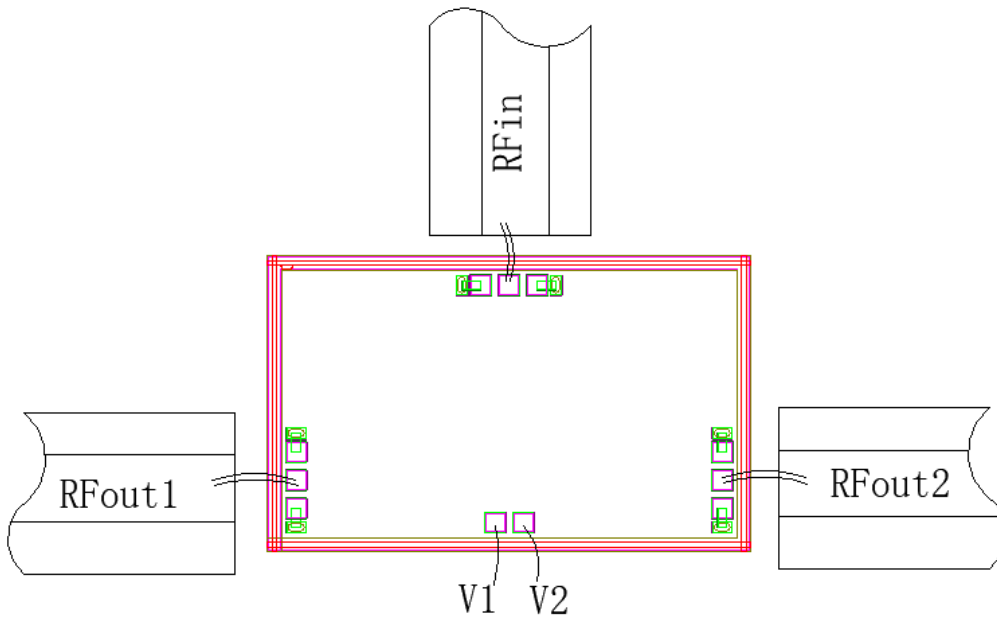

Input Standing Wave C

Output Standing Wave Curve

Isolation Curve

Chip Dimension (Unit : μm)

Chip Layout Diagram

Pad Definition

Pad No.	Symbol	Function	Dimension
1	RF_in	RF signal input port, connecting to external 50Ω system, no need to add DC blocking capacitor.	100*100μm²
2	RF_out1	RF signal output port 1, connecting to external 50Ω system, no need to add DC blocking capacitor.	100*100μm²
3	RF_out2	RF signal output port 2, connecting to external 50Ω system, no need to add DC blocking capacitor.	100*100μm²
4	V1	Supply control port, refer to the Truth Table for its control logic.	100*100μm²
5	V2	Supply control port, refer to the Truth Table for its control logic.	100*100μm²

Truth Table

	V1	V2
RF_in – RF_out1	-40V	0V
RF_in – RF_out2	0V	-40V

Please see Appendix A for details.