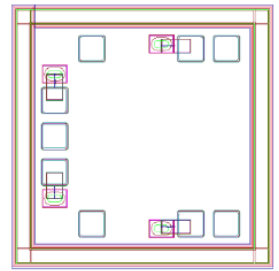


AMT2301 1 – 20GHz SPDT Switch Chip



Key Features :

- Frequency range : 1 – 20GHz
- Insertion loss : 1.4dB
- Isolation : 30dB
- Input/output standing wave : 1.3
- Switching time : 10ns
- Control method : 0/-40V
- Chip dimensions : 1.0mm x 1.0mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

Description :

AMT2301 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 1.4dB, isolation 30dB, In/Out VSWR 1.3, and switching time is 10ns.

Absolute Maximum Ratings

Symbol	Parameter	Value	Remark
Vr, Vt	Control Voltage	0.6V/-50V	
Pin	Input Power	38dBm	
Tm	Sintering Temperature	310 °C	30s, N ₂ protection
Tstg	Storage Temperature	-65 ~ +150 °C	

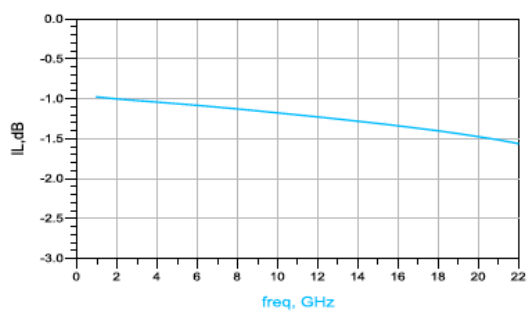
[1] Operation outside any of the Absolute Maximum Ratings may cause permanent device damage.

Electrical Characteristics (Ta = 25°C)

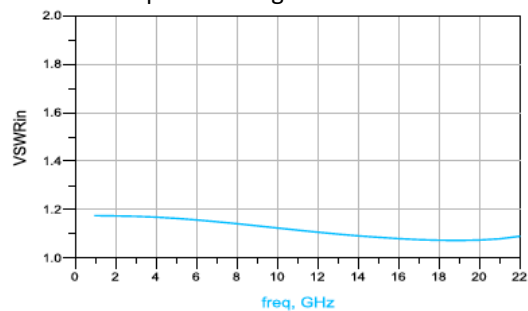
Symbol	Parameter	Value			Unit
		Min	Typical	Max	
VSWRin	Input Standing Wave	-	1.2	-	
VSWRout	Output Standing Wave	-	1.2	-	
IL	Insertion Loss	-	1.3	1.6	dB
ISO	Isolation	-	30	-	dB

Typical Performance

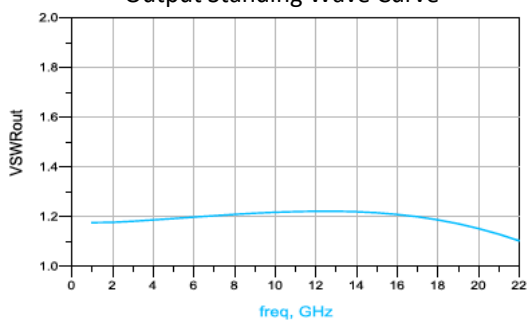
Insertion Loss Curve



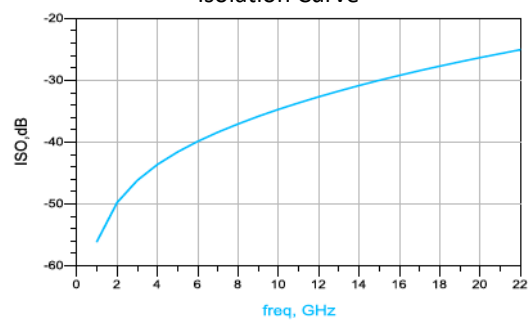
Input Standing Wave Curve



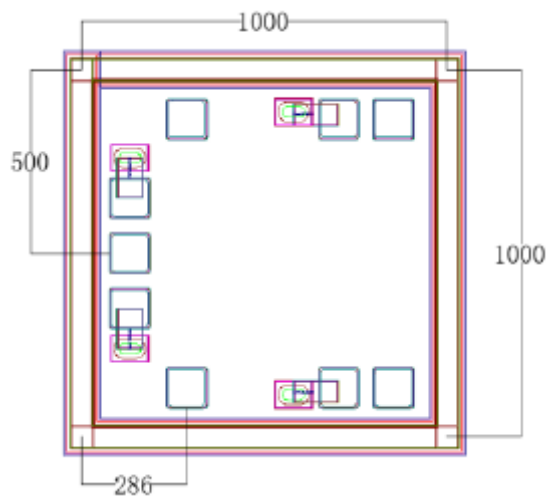
Output Standing Wave Curve



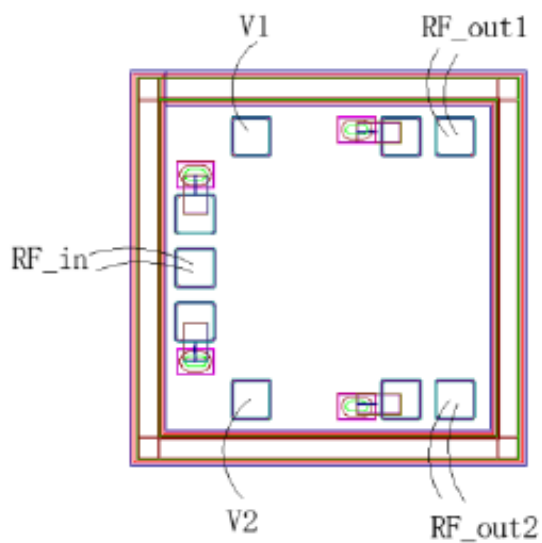
Isolation Curve



Chip Dimension (Unit : μm)



Chip Layout Diagram



Truth Table

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

Please see Appendix A for details.