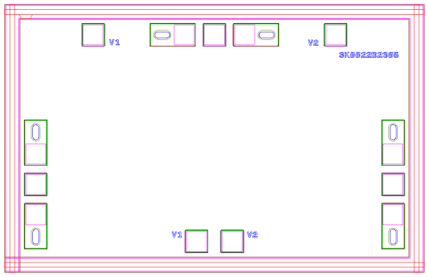
AMT2303
0.1 – 20GHz SPDT Switch Chip



Key Features :

- Frequency range : 0.1 – 20GHz
- Insertion loss : 1.5dB
- Isolation : 30dB
- Input/output standing wave : 1.6/1.4
- Input P-0.3 : 40dBm
- Switching time : 20ns
- Control method : 0/-40V
- Chip dimensions : 2.0mm x 1.25mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

Description :

AMT2303 chip is a 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 1.5dB, isolation 30dB, Input/Output VSWR 1.6/1.4.

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.

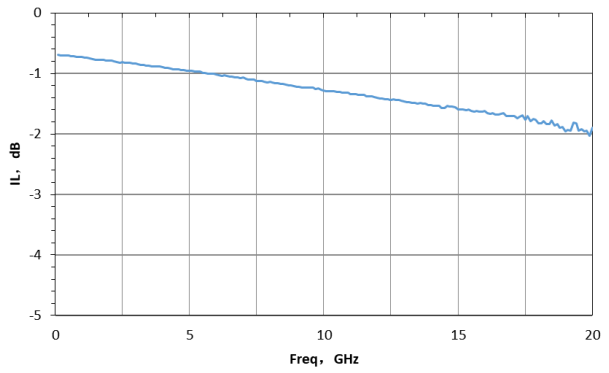
Electrical Characteristics (Ta = 25°C)

Symbol	Parameter	Value			Unit
		Min	Typical	Max	
VSWRin	Input Standing Wave	-	1.6	-	
VSWRout	Output Standing Wave	-	1.4	-	
IL	Insertion Loss	-	1.5	2.0	dB
ISO	Isolation	-	30	-	dB

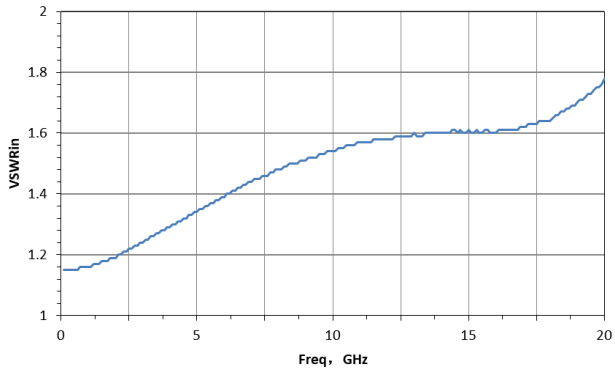
AMT2303
0.1 – 20GHz SPDT Switch Chip

Typical Performance

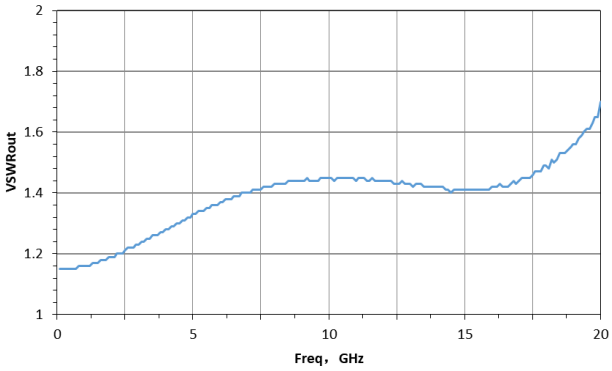
Insertion Loss Curve



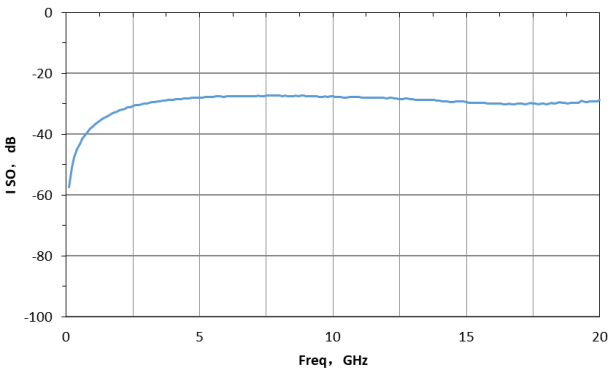
Input Standing Wave C



Output Standing Wave Curve

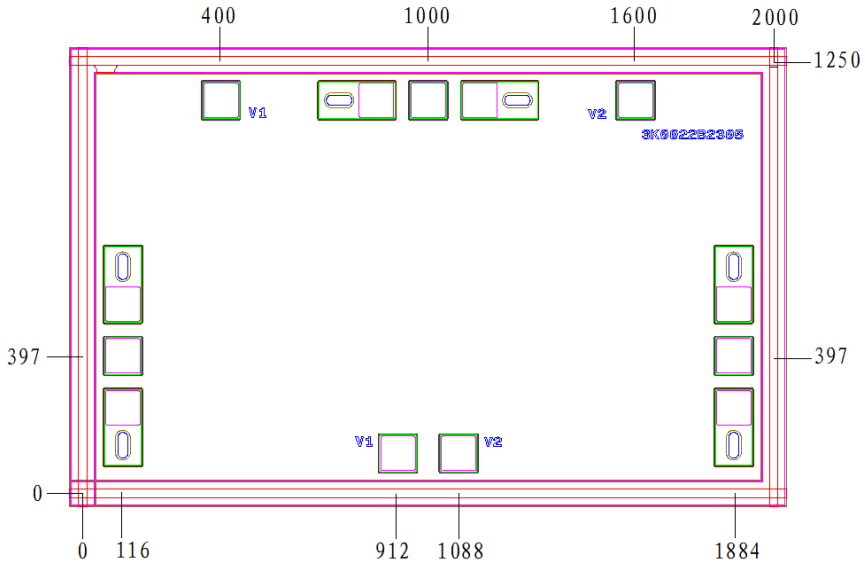


Isolation Curve

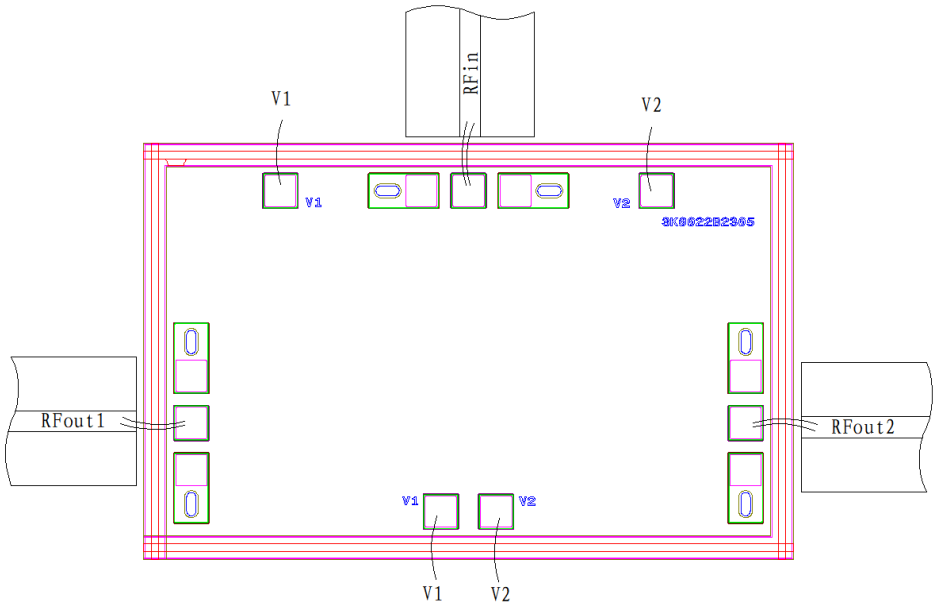


AMT2303
0.1 – 20GHz SPDT Switch Chip

Chip Dimension (Unit : μm)



Chip Layout Diagram



AMT2303
0.1 – 20GHz SPDT Switch Chip

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*100μm^2
2	RF_out1	RF signal output port 1, connecting to external 50Ω system, no need to add DC blocking capacitor.	100*100μm^2
3	RF_out2	RF signal output port 2, connecting to external 50Ω system, no need to add DC blocking capacitor.	100*100μm^2
4	V1	Supply control port, refer to the Truth Table for its control logic.	100*100μm^2
5	V2	Supply control port, refer to the Truth Table for its control logic.	100*100μm^2

Truth Table

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

Please see Appendix A for details.