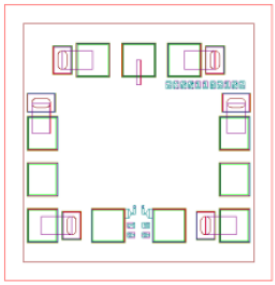
AMT1708
0 - 40GHz Switch Chip



Key Features :

- Frequency range : 0 – 40GHz
- Insertion loss : 1dB@20GHz
- Isolation : 35dB@20GHz
- Input/output standing wave : 1.3
- Switching time : 30ns
- Control method : 0/-5V
- Chip dimensions : 0.875mm x 0.9mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

Description :

This is an absorptive type of SPDT switch MMIC, it is designed by Gallium Arsenide (GaAs) pHEMT process. This chip is designed with ground through metal vias on the back technology. All chip products p are 100% RF tested. It uses 0V, -5V level control, typical insertion loss is 1dB@20GHz, isolation is 35dB@20GHz, input/output standing wave is 1.3.

Absolute Maximum Ratings (Ta = 25°C)

Symbol	Parameter	Value	Remark
V1, 2	Control voltage	0.6V/-6V	
Pin	Input Power	30dBm	
Tm	Sintering Temperature	310°C	30s, N_2 protection
Tstg	Storage Temperature	-65 ~ +150°C	

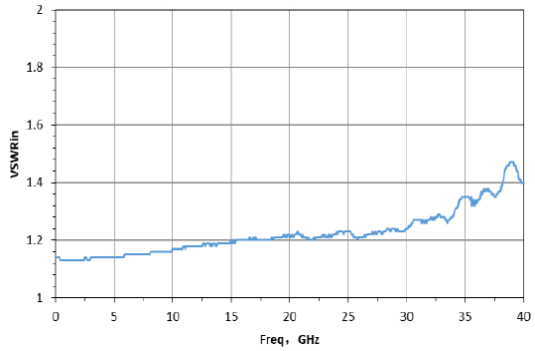
[1] Operation outside any of the Absolute Maximum Ratings may cause permanent device damage.

Electrical Characteristics (Ta = 25°C)

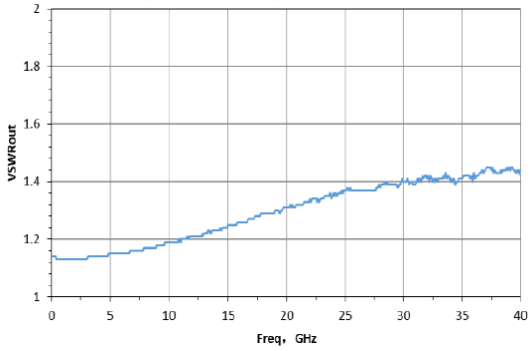
Symbol	Parameter	Test Conditions	Value			Unit
			Min	Typical	Max	
VSWRin	Input standing wave	F : 0 ~ 40GHz	-	1.3	1.6	-
VSWRout	Output standing wave		-	1.3	1.5	-
IL	Insertion Loss		-	1	1.6	dB
ISO	Isolation		28	35	-	dB

Typical Performance

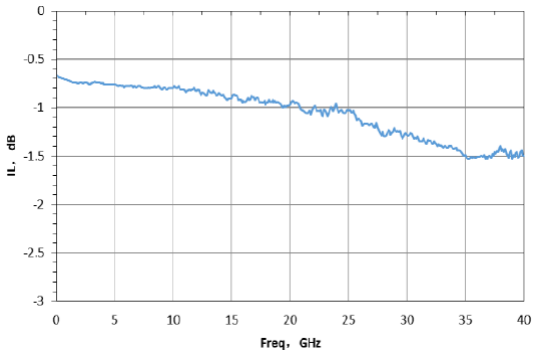
Input Standing Wave Curve



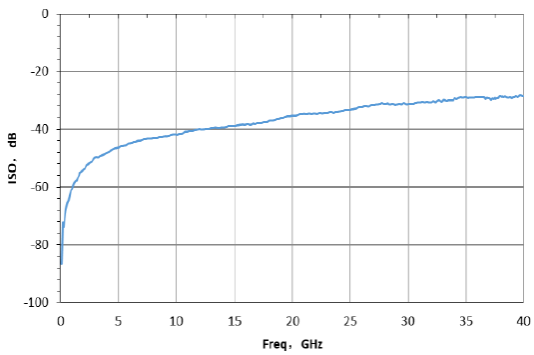
Output Standing Wave Curve



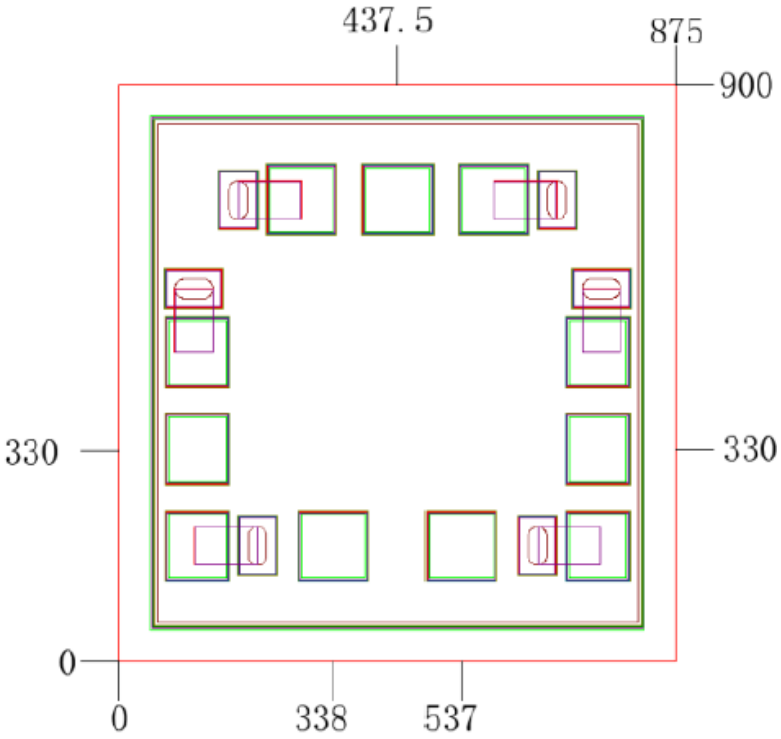
Insertion Loss Curve



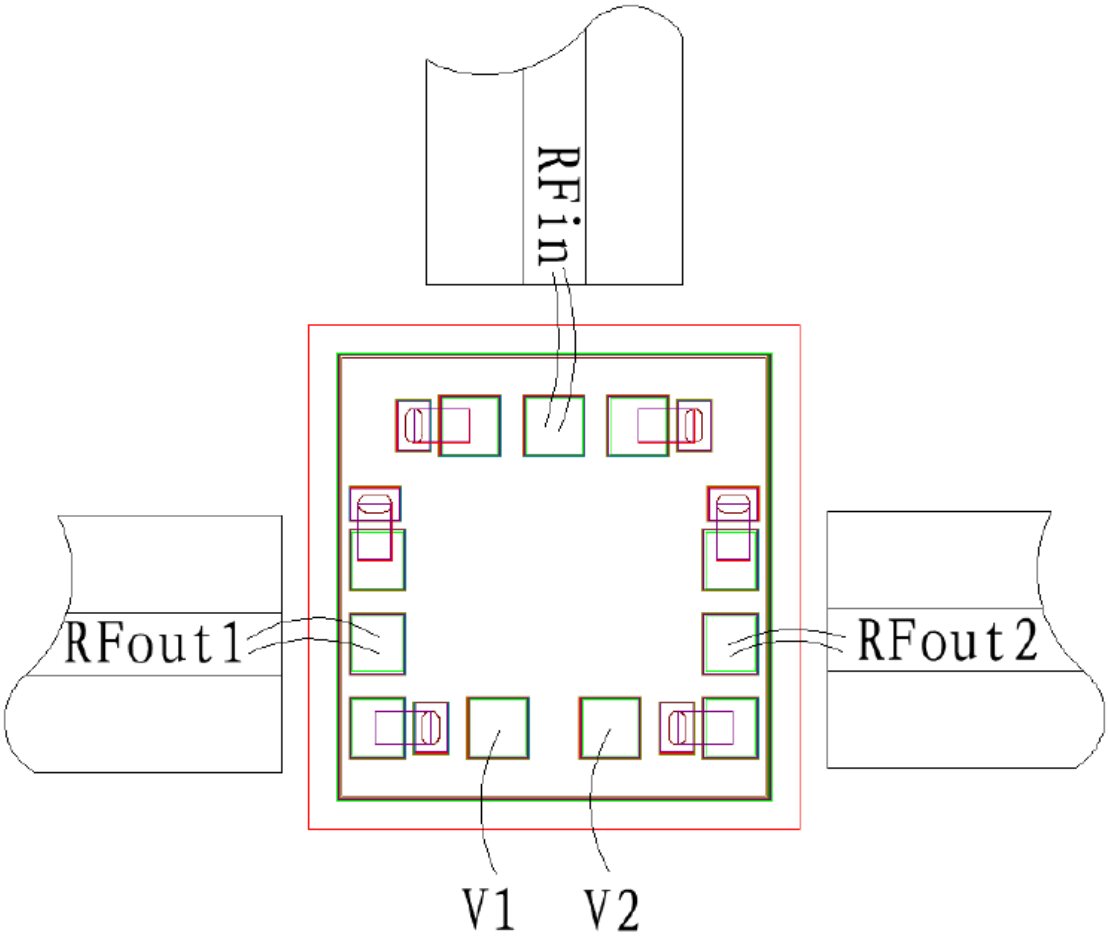
Isolation Curve



Chip Dimensions (Unit : μm)



Chip Layout Diagram



Pad Definition

No.	Symbol	Function Description	Dimension
1	RFin	RF signal input port, external connect to 50Ω system, no need DC blocking capacitor	100μm*100μm
2	RFout1	RF signal output port 1, external connect to 50Ω system, no need DC blocking capacitor	100μm*100μm
3	RFout2	RF signal output port 2, external connect to 50Ω system, no need DC blocking capacitor	100μm*100μm
4	V1	Supply voltage control port, see Truth Table for control logic	100μm*100μm
5	V2	Supply voltage control port, see Truth Table for control logic	100μm*100μm

Truth Table

	V1	V2
RFin – RFout1	0V	-5V
RFin – RFout2	-5V	0V
OFF	-5V	-5V

Please see Appendix A for details.