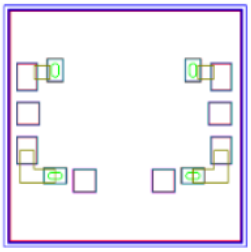
AMT1709
2 - 18GHz SPST Switch Chip



Key Features :

- Frequency range : 2 – 18GHz
- Insertion loss : 1.4dB
- Isolation : 70dB
- Switch ON input/output standing wave : 1.2/1.2
- Switch OFF input/output standing wave : 1.3/1.3
- Switching time : 49ns
- Control method : 0/-5V
- Chip dimensions : 1.05mm x 1.05mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

Description :

AMT1709 is a high performance FET SPST switch chip, 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. The chip uses 0V, -5V supply, TTL level control, typical insertion loss is 1.4dB, isolation is 70dB, input/output standing wave is 1.2.

Absolute Maximum Ratings (Ta = 25°C)

Symbol	Parameter	Value	Remark
V1, 2	Control voltage	0.6V/-8V	
Pin	Input Power	30dBm	
Tm	Sintering Temperature	310°C	30s, N_2 protection
Tstg	Storage Temperature	-65 ~ +150°C	

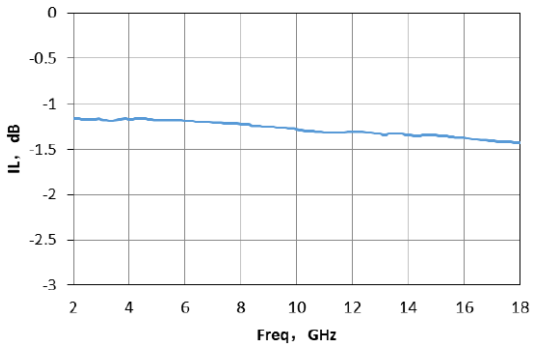
[1] Operation outside any of the Absolute Maximum Ratings may cause permanent device damage.

Electrical Characteristics (Ta = 25°C)

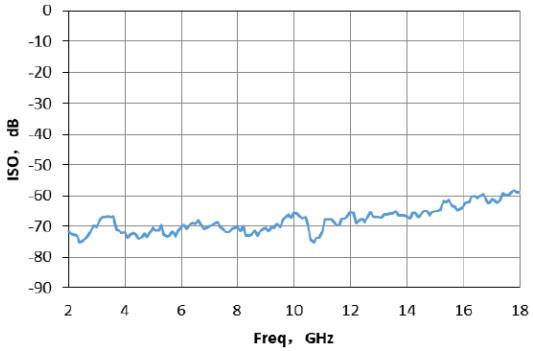
Symbol	Parameter	Test Conditions	Value			Unit
			Min	Typical	Max	
VSWRin (On)	ON state input standing wave	F : 2 ~ 18GHz	-	1.2	1.3	-
VSWRout(On)	ON state output standing wave		-	1.2	1.3	-
VSWRin(Off)	OFF state input standing wave		-	1.3	1.5	-
VSWRout(Off)	OFF state output standing wave		-	1.3	1.5	-
IL	Insertion Loss		-	1.4	1.6	dB
ISO	Isolation		53	70	-	dB

Typical Performance

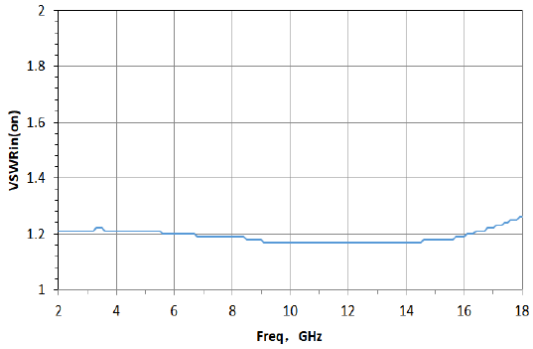
Insertion Loss Curve



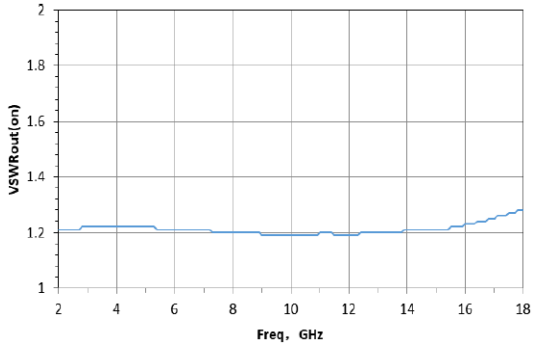
Isolation Curve



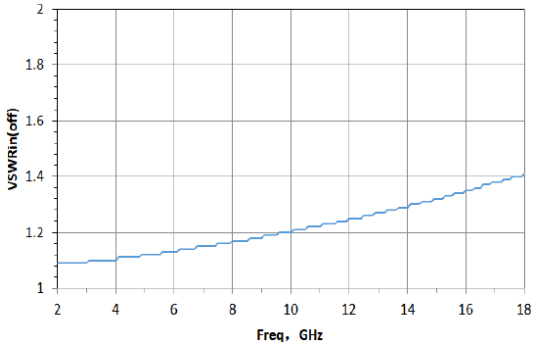
Switch ON State Input Standing Wave Curve



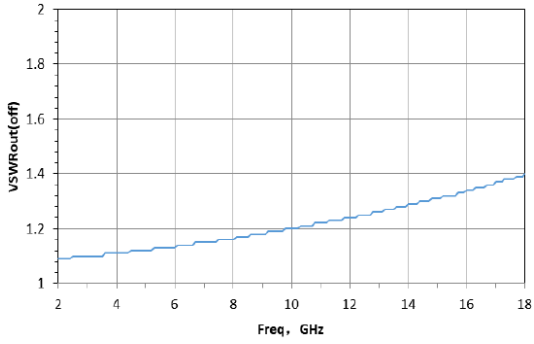
Switch ON State Output Standing Wave Curve



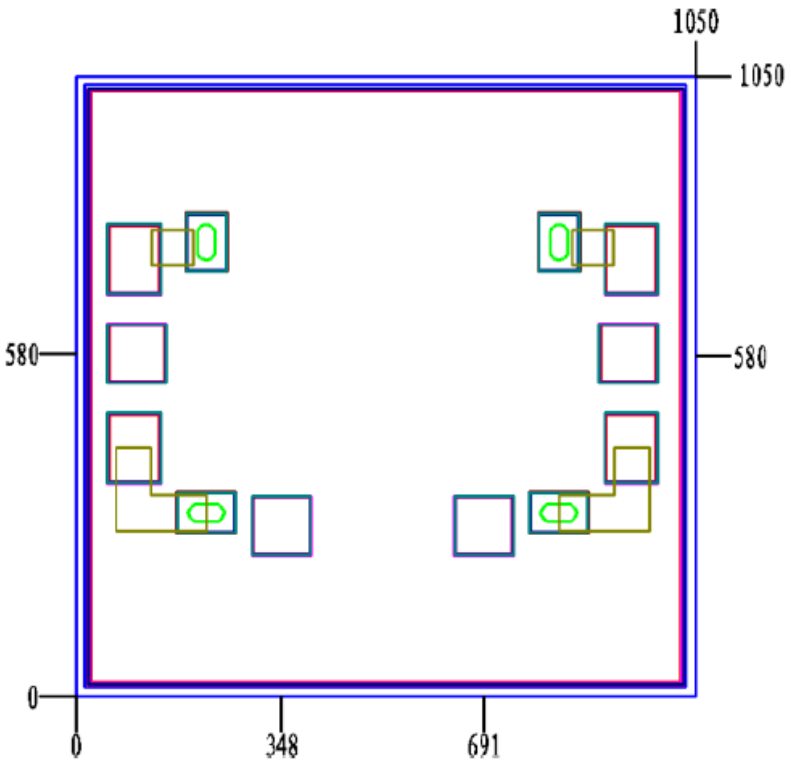
Switch OFF State Input Standing Wave Curve



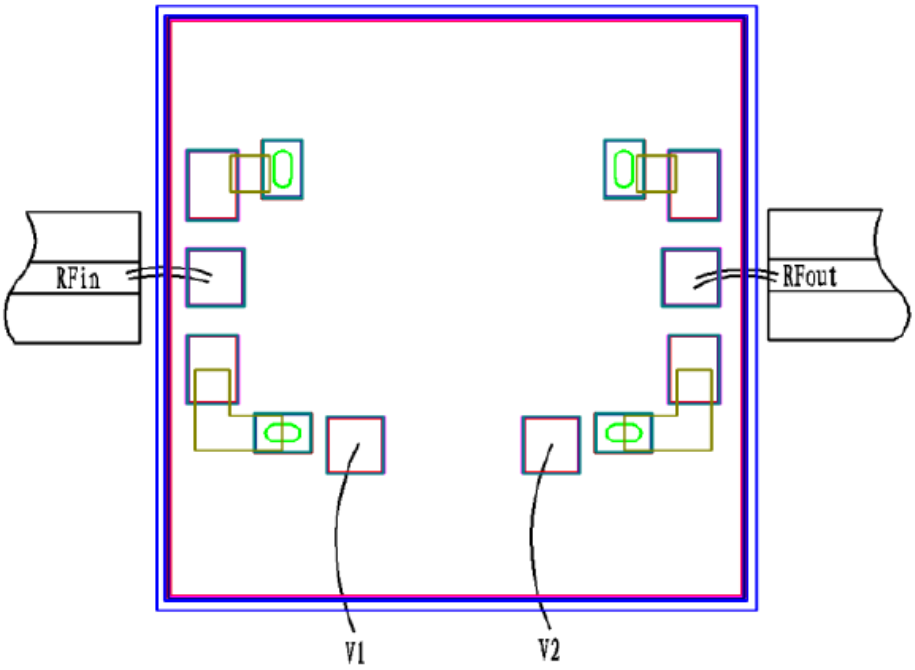
Switch OFF State Output Standing Wave Curve



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 DC blocking capacitor	100μm*100μm
2	RFout	RF signal output port, external connect to 50Ω system, no DC blocking capacitor	100μm*100μm
3	V1	Supply voltage control port, see Truth Table for control logic	100μm*100μm
4	V2	Supply voltage control port, see Truth Table for control logic	100μm*100μm

Truth Table

V1	V2	RFin – RFout
0V	-5V	ON
-5V	0V	OFF

Please see Appendix A for details.