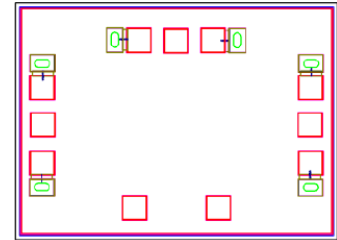


AMT1710
2 - 18GHz SPDT Switch Chip



Key Features :

- Frequency range : 2 – 18GHz
- Insertion loss : 1.7dB
- Isolation : 40dB
- Input standing wave : 1.5
- ON/OFF state output standing wave : 1.2/1.3
- Switching time : 48ns
- Control method : 0/-5V
- Chip dimensions : 1.3mm x 0.95mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

Description :

AMT1710 is a high performance GaAs FET SPDT 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 are 100% RF tested. The chip uses 0V, -5V supply, typical insertion loss is 1.7dB, isolation is 40dB, input/output standing wave is 1.5.

Absolute Maximum Ratings (Ta = 25°C)

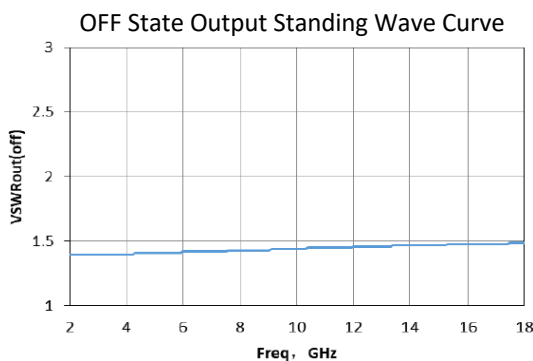
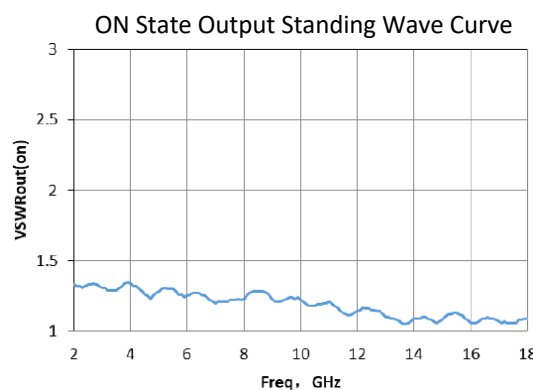
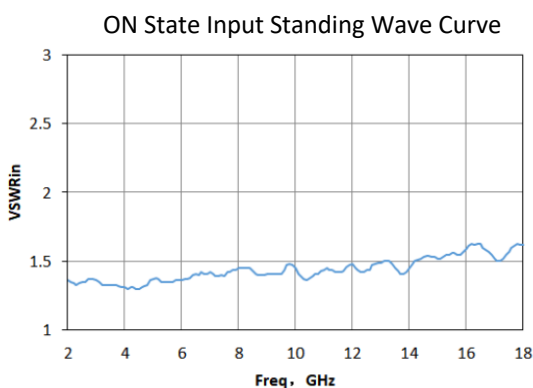
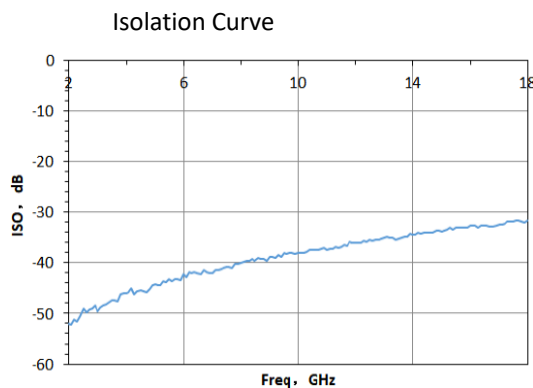
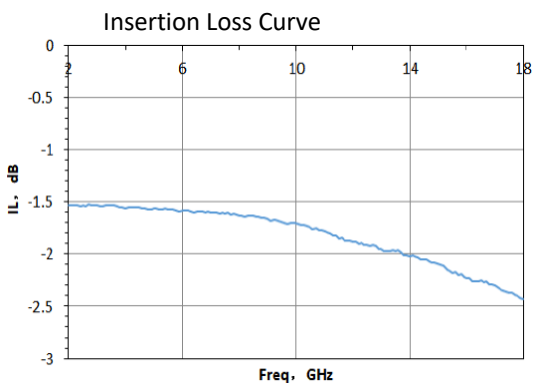
Symbol	Parameter	Value	Remark
V1, 2	Control voltage	0.6V/-8V	
Pin	Input Power	30dBm	
Tm	Sintering Temperature	310°C	30s, N ₂ protection
Tstg	Storage Temperature	-65 ~ +150°C	

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

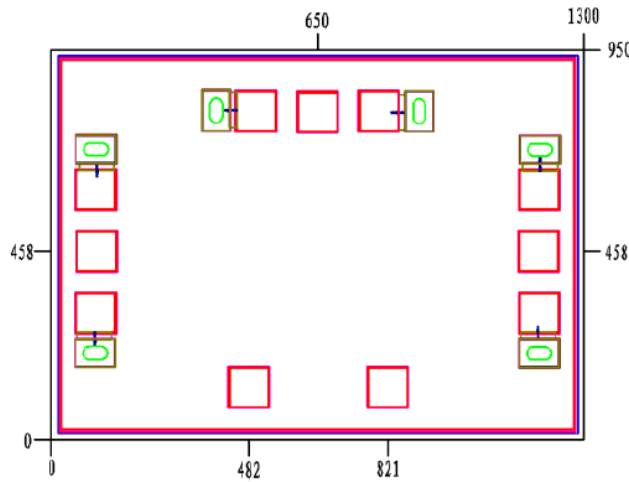
Electrical Characteristics (Ta = 25°C)

Symbol	Parameter	Test Conditions	Value			Unit
			Min	Typical	Max	
VSWRin	ON state input standing wave	F : 2 ~ 18GHz	-	1.5	1.8	-
VSWRout(On)	ON state output standing wave		-	1.2	1.4	-
VSWRout(Off)	OFF state output standing wave		-	1.3	1.4	-
IL	Insertion Loss		-	1.7	2.5	dB
ISO	Isolation		30	40	-	dB

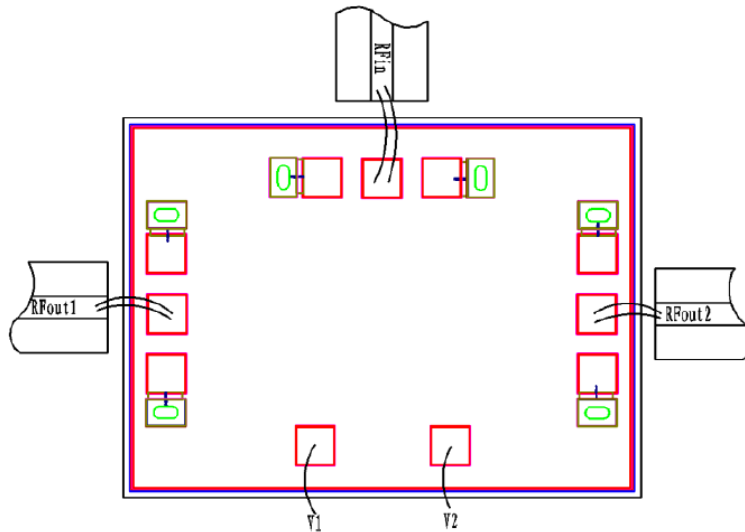
Typical Performance



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	$100\mu\text{m} * 100\mu\text{m}$
2	RFout1	RF signal output port 1, external connect to 50Ω system, no DC blocking capacitor	$100\mu\text{m} * 100\mu\text{m}$
3	RFout2	RF signal output port 2, external connect to 50Ω system, no DC blocking capacitor	$100\mu\text{m} * 100\mu\text{m}$
4	V1	Supply voltage control port, see Truth Table for control logic	$100\mu\text{m} * 100\mu\text{m}$
5	V2	Supply voltage control port, see Truth Table for control logic	$100\mu\text{m} * 100\mu\text{m}$

Truth Table

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

Please see Appendix A for details.