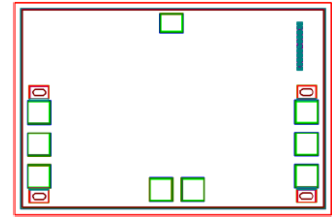


**AMT1707**  
**0 - 20GHz SPST Switch Chip**



**Key Features :**

- Frequency range : 0 – 20GHz
- Insertion loss : 1.9dB
- Isolation : 50dB
- Switch ON output standing wave : 1.3/1.3
- Switch OFF output standing wave : 1.45/1.45
- Switching time : 28ns
- Control method : 0/-5V
- Chip Dimensions : 1.5mm x 1.0mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

**Description :**

This is an absorptive type of 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 level control, typical insertion loss is 1.9dB, isolation is 50dB, input/output standing wave is 1.3.

**Absolute Maximum Ratings (Ta = 25°C)**

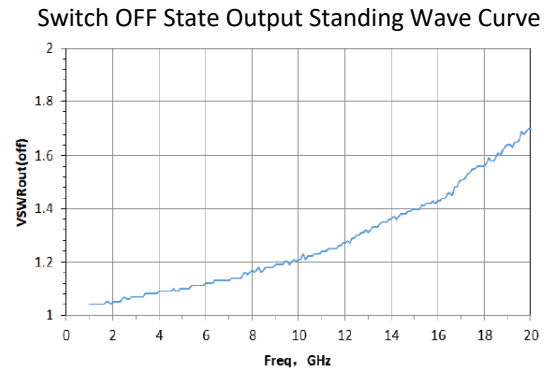
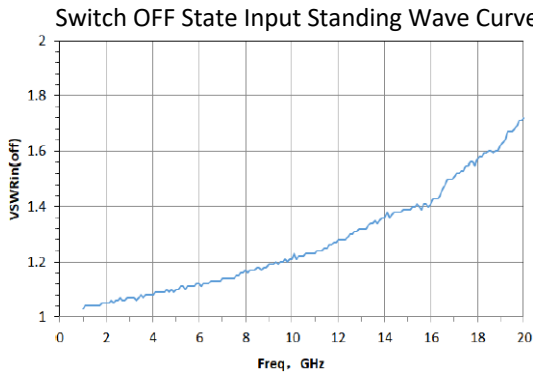
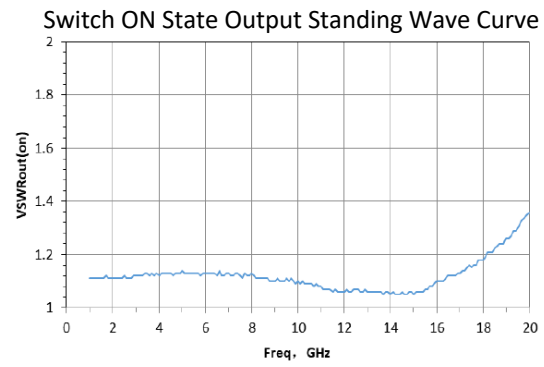
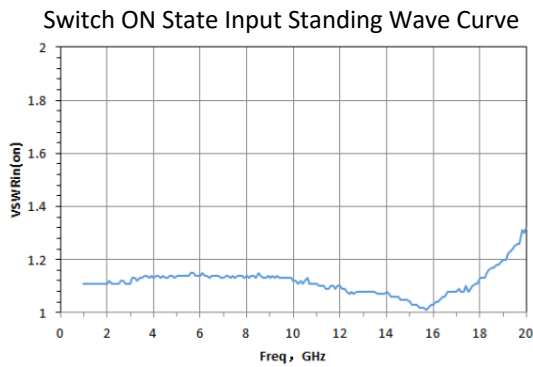
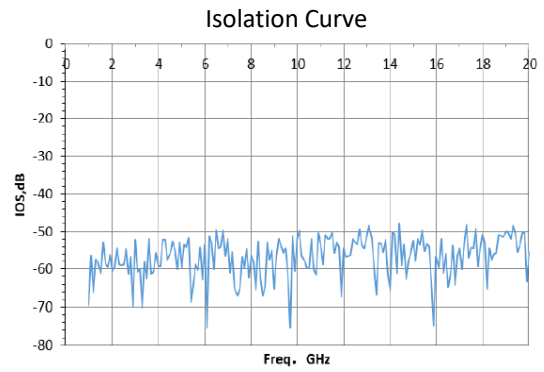
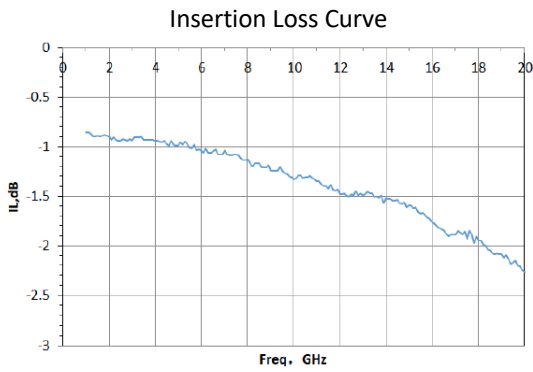
Symbol	Parameter	Value	Remark
V1, 2	Control voltage	0.6V/-8V	
Pin	Input Power	30dBm	
Tm	Sintering Temperature	310°C	30s, N <sub>2</sub> protection
Tstg	Storage Temperature	-65 ~ +150°C	

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

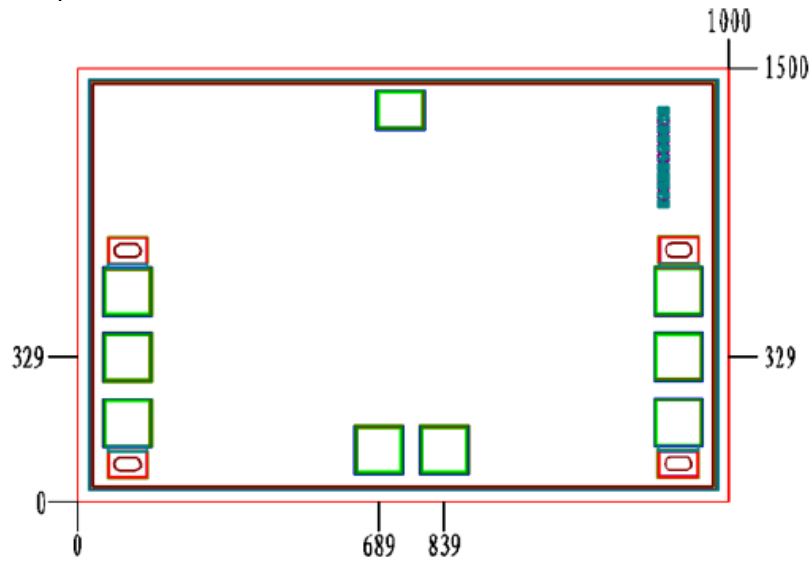
**Electrical Characteristics (Ta = 25°C)**

Symbol	Parameter	Value			Unit
		Min	Typical	Max	
VSWRin(On)	ON state input standing wave	-	1.3	1.5	-
VSWRout(On)	ON state output standing wave	-	1.3	1.5	-
VSWRin(Off)	OFF state input standing wave	-	1.45	1.85	-
VSWRout(Off)	OFF state output standing wave	-	1.45	1.85	-
IL	Insertion Loss	-	1.9	2.6	dB
ISO	Isolation	41	50	-	dB

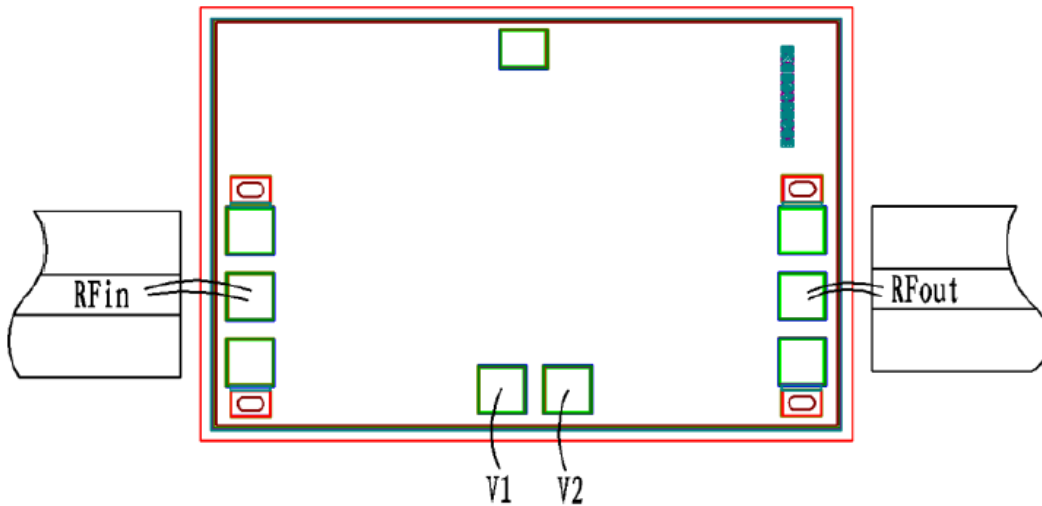
## Typical Performance



**Chip Dimensions (Unit :  $\mu\text{m}$ )**



**Chip Layout Diagram**



**Pad Definition**

No.	Symbol	Function Description	Dimension
1	RFin	RF signal input port, external connect to $50\Omega$ system, no need DC blocking capacitor	$100\mu\text{m} * 100\mu\text{m}$
2	RFout	RF signal output port 1, external connect to $50\Omega$ system, no need 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 - RFout
0V	-5V	ON
-5V	0V	OFF

Please see Appendix A for details.