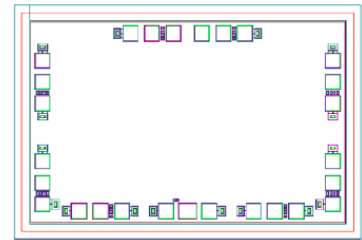


**AMT1712-04**  
**0 - 35GHz SP8T Switch Chip**



**Key Features :**

- Frequency range : 0 – 35GHz
- Insertion loss : 1.2dB@20GHz, 1.5dB@35GHz
- Isolation : 43dB@20GHz, 39dB@35GHz
- Input/output voltage standing wave : 1.3
- Switching time : 20ns
- Control method : +5V/-5V
- Chip Dimensions : 2.3mm x 1.5mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

**Description :**

AMT1712-04 is a SP8T switch chip, it is designed by PIN Diode MMIC process. This chip is designed with ground through metal vias on the back technology. All chip products p are 100% RF tested. It uses +5V, -5V level control, typical insertion loss is 1.2dB@20GHz, 1.5dB@35GHz, isolation is 43dB@20GHz, 39dB@35GHz, switching time is 20ns.

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

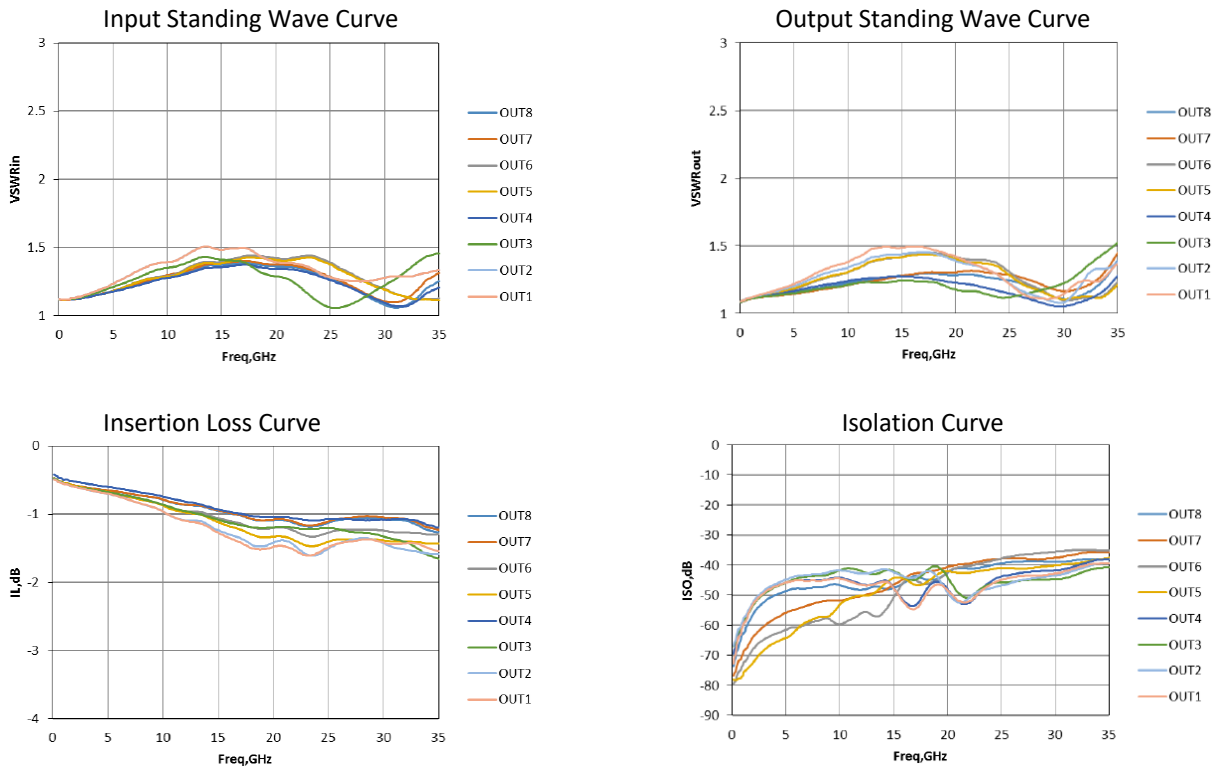
Symbol	Parameter	Value	Remark
Vin	Control voltage	25V	
Pin	Input Power	30dBm	
Tm	Sintering Temperature	310°C	30s, N <sub>2</sub> protection
Tstg	Storage Temperature	-65 ~ +150°C	

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

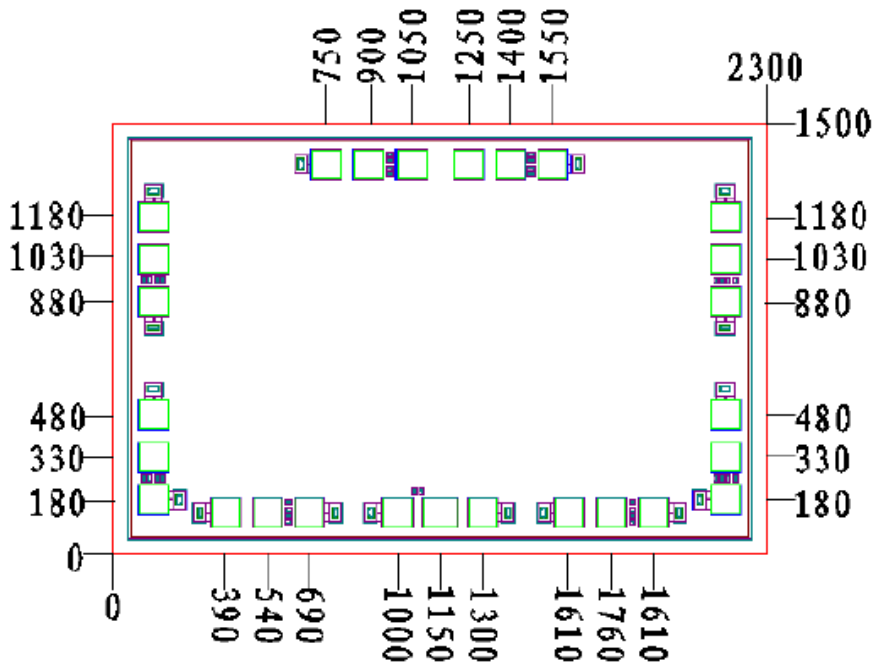
**Electrical Characteristics (Ta = 25°C)-**

Symbol	-Parameter	Value			Unit
		Min	Typical	Max	
VSWRin	Input standing wave	-	1.3	-	-
VSWRout	Output standing wave	-	1.3	-	-
IL	Insertion Loss	-	<u>1.2dB@20GHz</u> , 1.5dB@35GHz	-	dB
ISO	Isolation	-	43dB@20GHz, 39dB@35GHz	-	dB

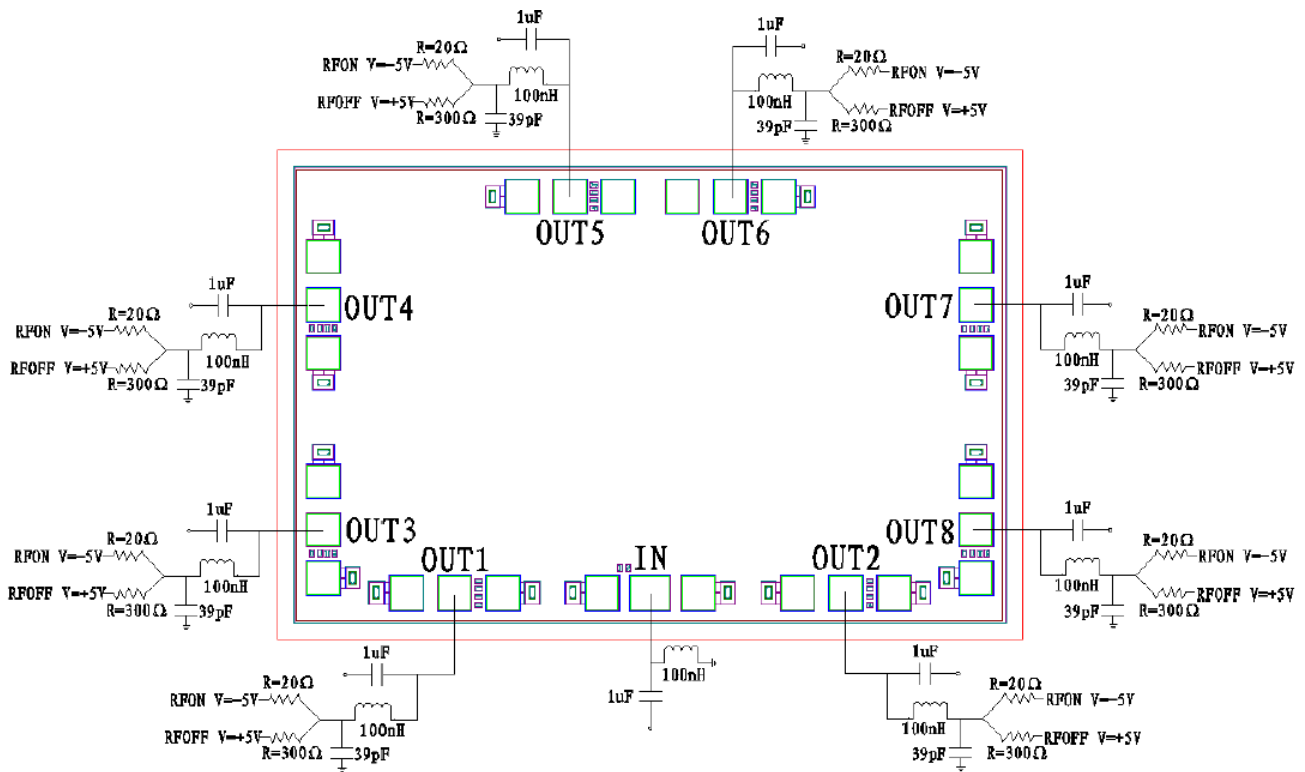
### Typical Performance



### Chip Dimensions (Unit : μm)



### Chip Layout Diagram



### Pad Definition

Symbol	Function Description	Dimension
IN	RF signal input port	100μm*100μm
OUT1, OUT2, OUT3, OUT4, OUT5, OUT6, OUT7, OUT8	RF signal output port	100μm*100μm

### Truth Table

Control Port (mA)								Output Conducting Status							
OUT1	OUT2	OUT3	OUT4	OUT5	OUT6	OUT7	OUT8	OUT1-IN	OUT2-IN	OUT3-IN	OUT4-IN	OUT5-IN	OUT6-IN	OUT7-IN	OUT8-IN
-47	13	13	13	13	13	13	13	Conduct	Isolate	Isolate	Isolate	Isolate	Isolate	Isolate	Isolate
13	-47	13	13	13	13	13	13	Isolate	Conduct	Isolate	Isolate	Isolate	Isolate	Isolate	Isolate
13	13	-47	13	13	13	13	13	Isolate	Isolate	Conduct	Isolate	Isolate	Isolate	Isolate	Isolate
13	13	13	-47	13	13	13	13	Isolate	Isolate	Isolate	Conduct	Isolate	Isolate	Isolate	Isolate
13	13	13	13	-47	13	13	13	Isolate	Isolate	Isolate	Isolate	Conduct	Isolate	Isolate	Isolate
13	13	13	13	13	-47	13	13	Isolate	Isolate	Isolate	Isolate	Isolate	Conduct	Isolate	Isolate
13	13	13	13	13	13	-47	13	Isolate	Isolate	Isolate	Isolate	Isolate	Isolate	Conduct	Isolate
13	13	13	13	13	13	13	-47	Isolate	Isolate	Isolate	Isolate	Isolate	Isolate	Isolate	Conduct

Different resistor is needed in serial with +5V and -5V. +5V is serial with 380Ω resistor; -5V is serial with 24Ω resistor;

Please see Appendix A for details.