AMT1713
6 - 18GHz SPDT Switch Chip

Key Features :

- Frequency range : 6 – 18GHz
- Insertion loss : 0.6dB
- Isolation : 40dB
- Input/output standing wave : 1.3
- Static operation current : 30mA
- Input power P-1 : 24dBm
- Control method : +5V/-5V
- Chip Dimensions : 1.8mm x 0.97mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

Description :

AMT1713 is a high performance GaAs PIN switch chip, it is designed by PIN 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 0.6dB, isolation is 40dB, input/output standing wave 1.3.

Absolute Maximum Ratings (Ta = 25°C)

Symbol	Parameter	Value	Remark
V1, V2	Control voltage	6V/-6V	
Pin	Input Power	30dBm	
Tm	Sintering Temperature	310°C	30s, N_2 protection
Tstg	Storage Temperature	-65 ~ +150°C	

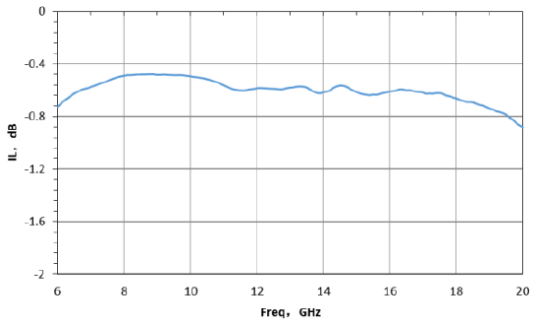
[1] Operation outside any of the Absolute Maximum Ratings may cause permanent device damage.

Electrical Characteristics (Ta = 25°C)

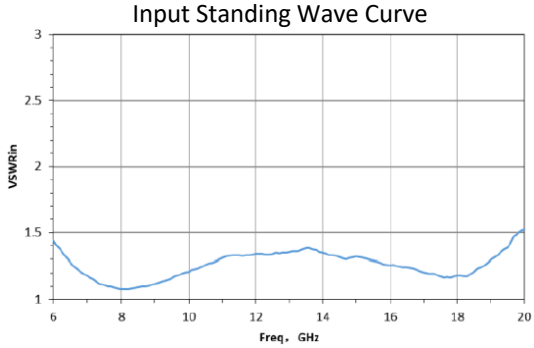
Symbol	Parameter	Test Conditions	Value			Unit
			Min	Typical	Max	
VSWRin	Input standing wave	F : 6 ~ 18GHz Refer to Truth Table for V1/V2 control logic	-	1.3	1.4	-
VSWRout	Output standing wave		-	1.3	1.4	-
IL	Insertion Loss		-	0.6	0.8	dB
ISO	Isolation		30	40	-	dB
I	Static operating current		-	30	-	mA
P-1	Input power at P-1		-	24	-	dBm

Typical Performance

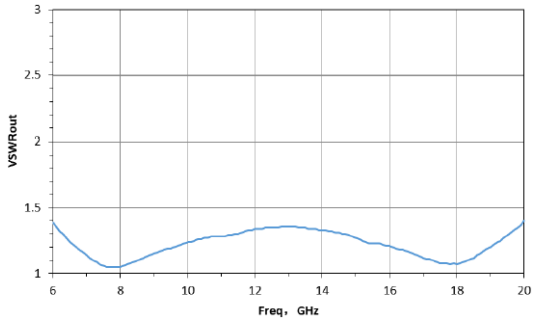
Insertion Loss Curve



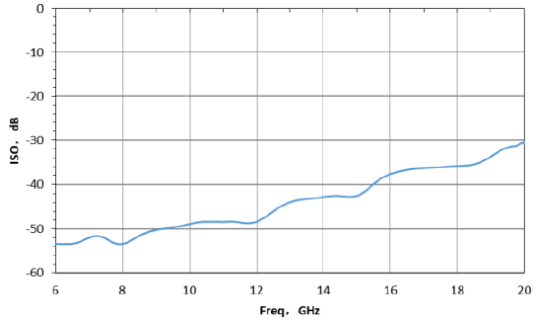
Input Standing Wave Curve



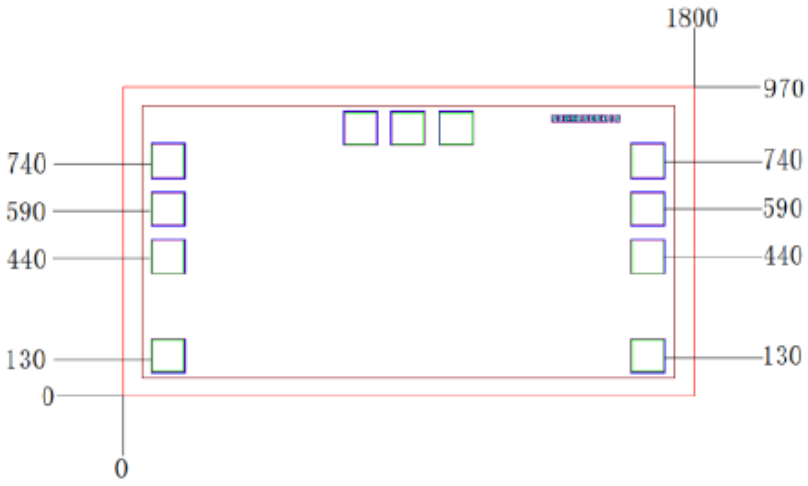
Output Standing Wave Curve



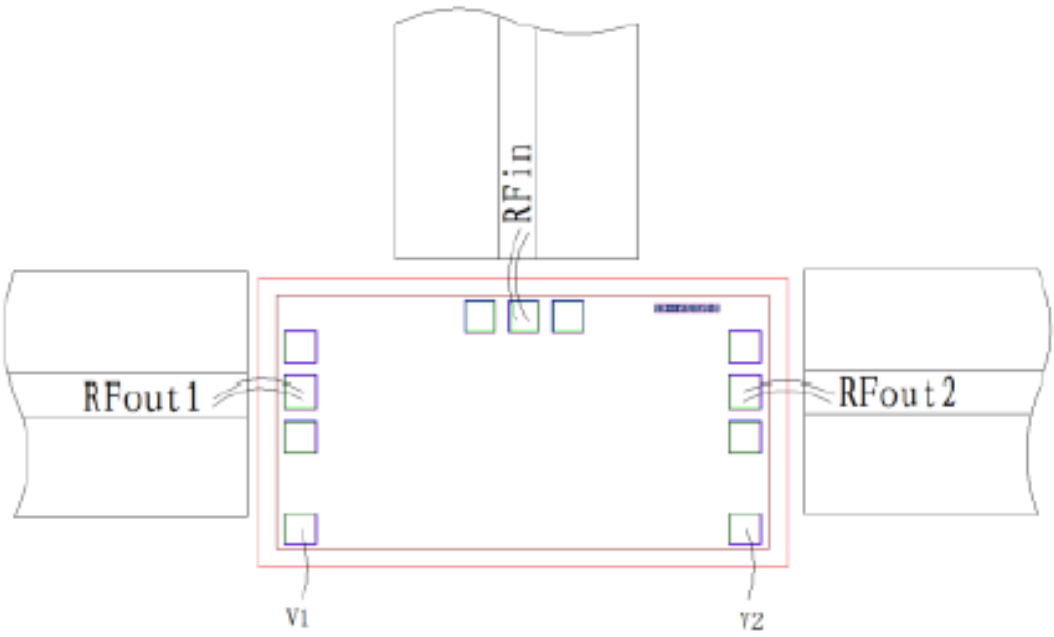
Isolation



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, internal built in DC blocking capacitor	100μm*100μm
2	RFout1	RF signal output port 1, external connect to 50Ω system, internal built in DC blocking capacitor	100μm*100μm
3	RFout2	RF signal output port 2, external connect to 50Ω system, internal built in 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	-5V	+5V
RFin – RFout2	+5V	-5V
Off	+5V	+5V

Please see Appendix A for details.