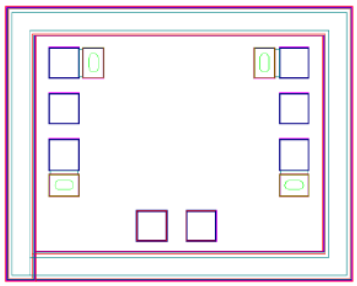
AMT1612
0 - 20GHz Digital Attenuator Chip



Key Features :

- Frequency range : 0 – 20GHz
- Insertion loss : 2dB
- Attenuation : 32dB
- Input/output standing wave : 1.4/1.4
- Control method : 0V/-5V
- Chip dimensions : 1.05mm x 0.8mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

Description :

AMT1612 is a one-bit 32dB digital control attenuator, it is designed by Gallium Arsenide (GaAs) process. This chip is designed with ground through metal vias on the back technology, it covers a frequency range of 0 ~ 20GHz, typical insertion loss is 2dB, and uses 0V/-5V control. This chip is for microwave transceiver module, to realize transceiver signal amplitude control function.

Absolute Maximum Ratings (Ta = 25°C)

Symbol	Parameter	Value	Remark
Pin	Input Power	25dBm	
Tch	Operation Temperature	-55 ~ +125°C	
Tm	Sintering Temperature	310°C	30s, N_2 protection
Tstg	Storage Temperature	-65 ~ +150°C	

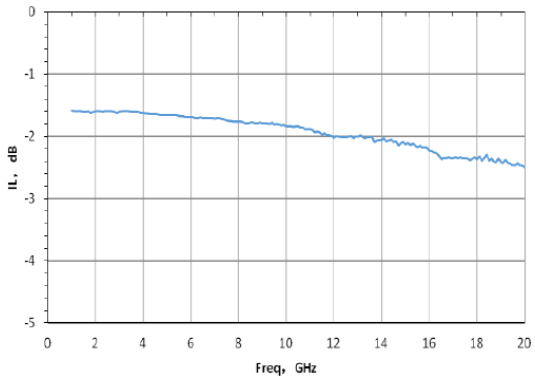
[1] Operation outside any of the Absolute Maximum Ratings may cause permanent device damage.

Electrical Characteristics (Ta = 25°C)

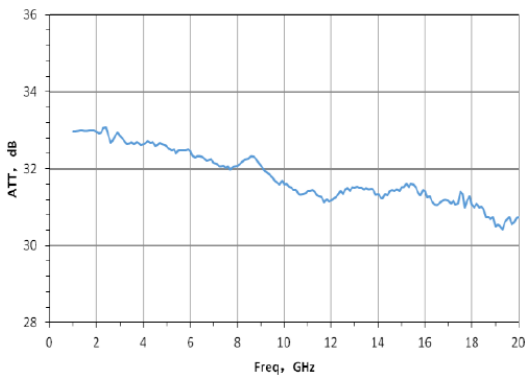
Symbol	Parameter	Test Conditions	Value			Unit
			Min	Typical	Max	
IL	Insertion Loss	F : 0 ~ 20GHz	-	2	2.3	dB
ATT	Attenuation		30.7	32	33.3	dB
VSWRin	Input Standing Wave		-	1.4	1.5	-
VSWRout	Output Standing Wave		-	1.4	1.5	-

Typical Performance

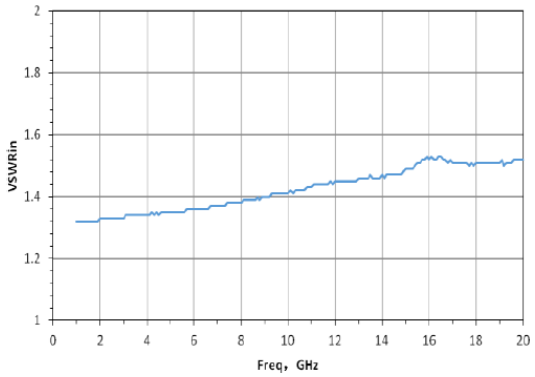
Insertion Loss Curve



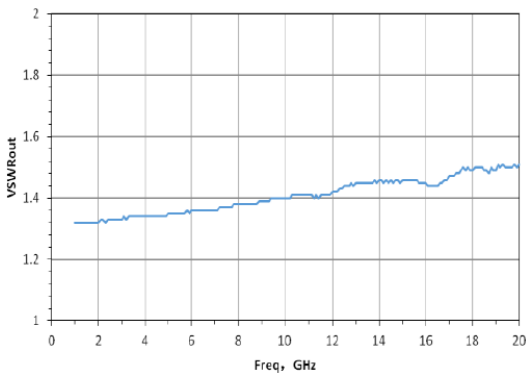
Attenuation Curve



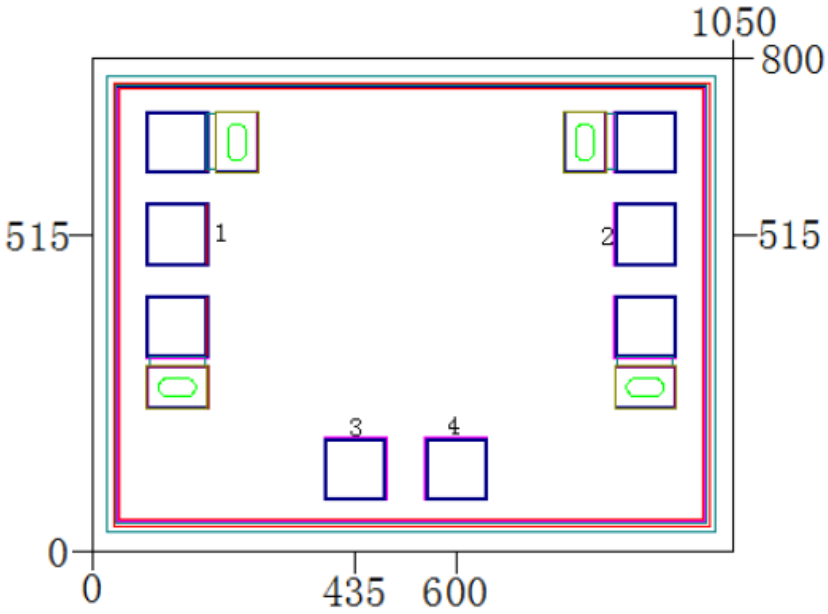
Input Standing Wave



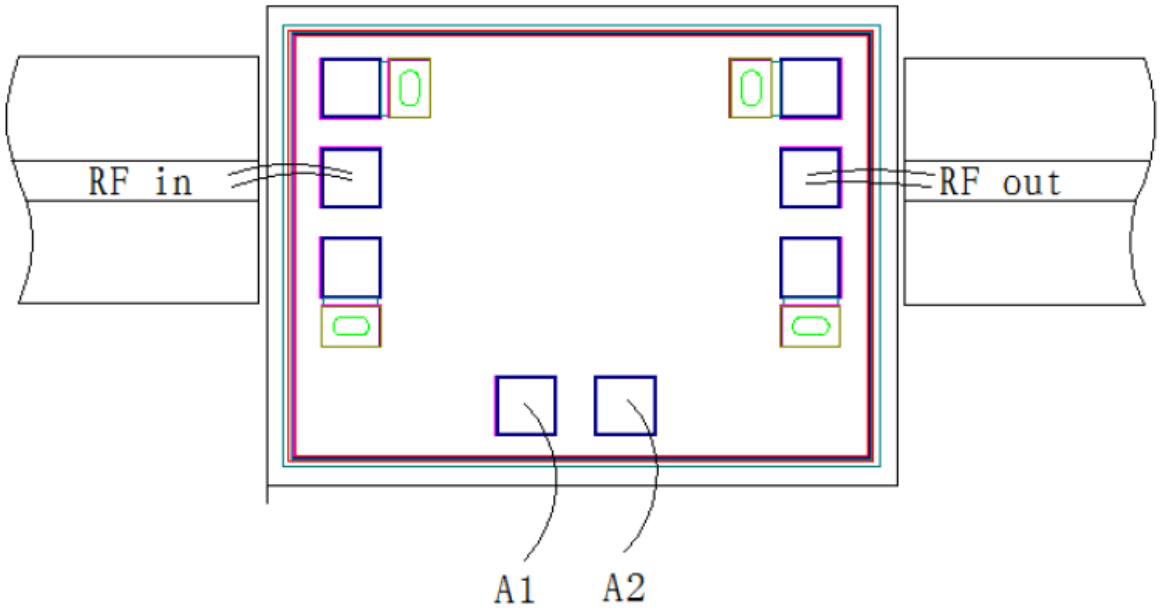
Output Standing Wave



Chip Dimensions (Unit : μm)



Chip Layout Diagram



Pad Definition

Symbol	Function	Dimension
RFin	RF signal input port, external connect to 50Ω system, no DC blocking capacitor	100μm*100μm
RFout	RF signal output port, external connect to 50Ω system, no DC blocking capacitor	100μm*100μm
A1	Input 0V/-5V separately to A1, A2, attenuator at initial state	100μm*100μm
A2	Input -5V/0V separately to A1, A2, attenuator at attenuating state	100μm*100μm