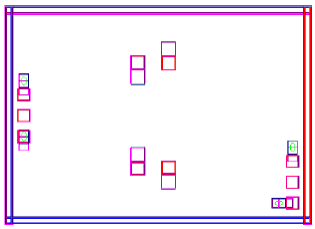
AMT1702
28-38GHz Vector Modulation Chip



Key Features :

- Frequency Range : 28 – 38GHz
- Type : double balanced
- Phase modulation range : 360°
- Amplitude modulation range : -30dB ~ -10dB
- Input/output standing wave : 1.4
- Voltage bias : -1.8V ~ 0V
- Chip dimensions : 2.15mm x 1.5mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

Description :

AMT1702 chip is a millimeter wave double balanced analog modulation device, it realizes signal amplitude and phase joint modulation. It is designed by 0.25μm 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.

Absolute Maximum Ratings (Ta = 25°C)

Symbol	Parameter	Value	Remark
Vi, Vq	Control Voltage	0.6V/-5V	
Pin	Input Power	20dBm	
Tm	Sintering Temperature	310°C	30s, N_2 protection
Tstg	Storage Temperature	-65 ~ +150°C	

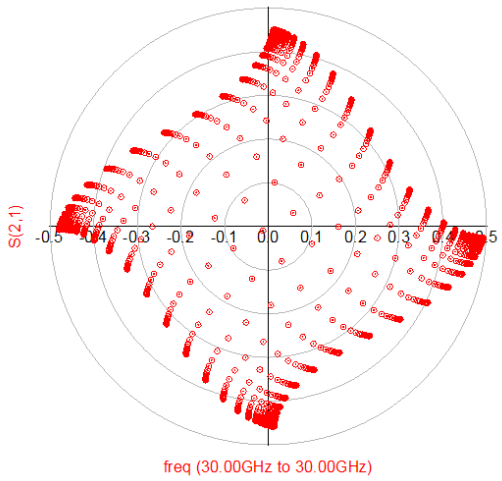
[1] Operation outside any of the Absolute Maximum Ratings may cause permanent device damage.

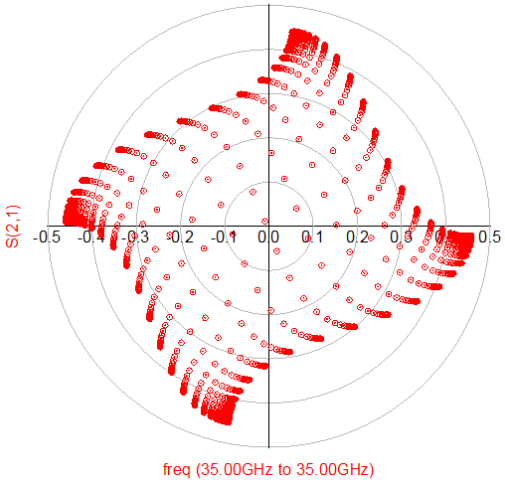
Electrical Characteristics (Ta = 25°C)

Symbol	Parameter	Value			Unit
		Min	Typical	Max	
VSWRin	Input Standing Wave	-	1.4	1.5	
VSWRout	Output Standing Wave	-	1.4	1.5	
IL	Insertion Loss	-	7	8	dB

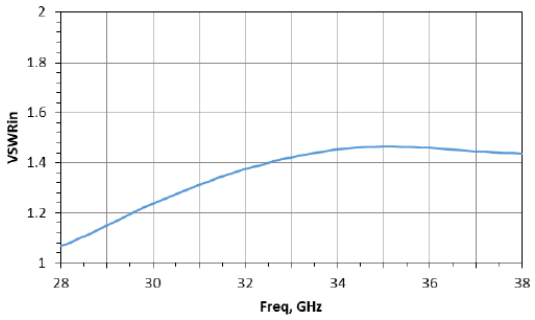
Typical Performance

Amplitude Phase Modulation Curve

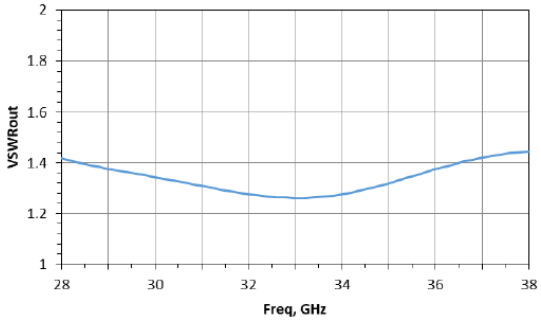




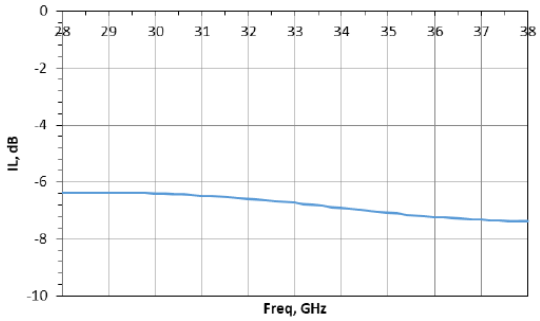
Input Standing Wave Curve



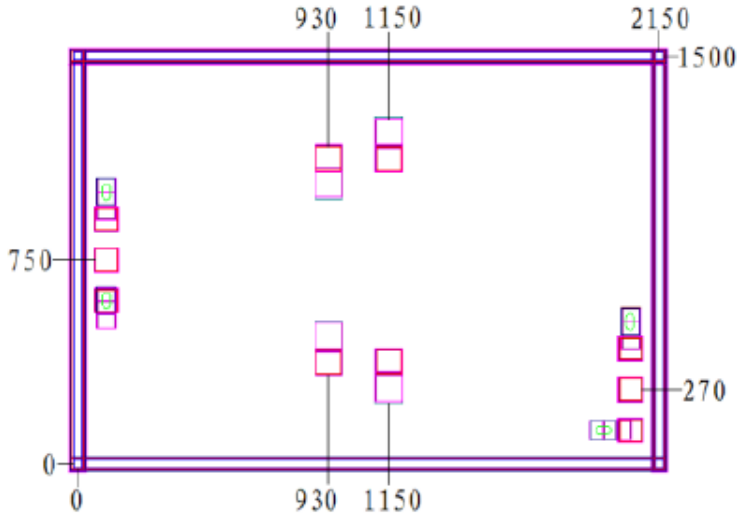
Output Standing Wave Curve



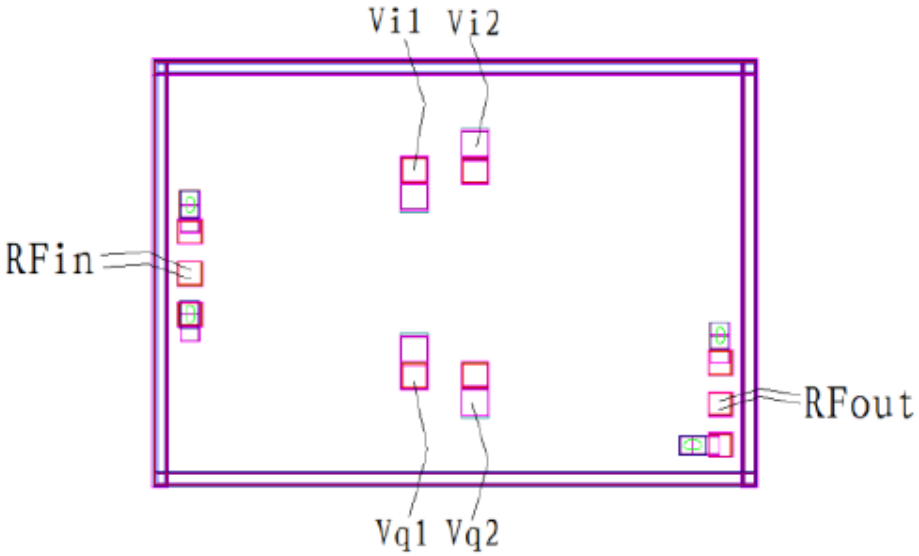
Insertion Loss Curve



Chip Dimensions (Unit : μm)



Chip Layout Diagram



Pad Definition

No.	Symbol	Function	PAD dimension	Comment
1	RFin	Input point	90*90μm^2	External connect to 50 Ω system
2	RFout	Output point	90*90μm^2	External connect to 50 Ω system
3	Vi1/2	Control point	100*100μm^2	Recommend operation voltage -1.8V ~ 0V
4	Vq1/2	Control point	100*100μm^2	Recommend operation voltage -1.8V ~ 0V

Please see Appendix A for details.