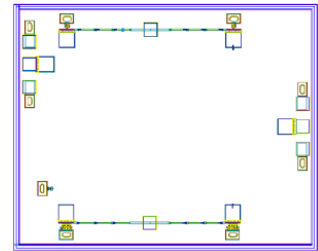


AMT1719
23.5 – 28.5GHz Predistortion Linearization Chip



Key Features :

- Frequency range : 23.5 – 28.5GHz
- Gain expansion : 0 – 20dB
- Phase expansion : -50° - 150°
- Control voltage V1, V2 range : 0V – 5VdB
- Gain flatness : 1.5dB
- Input/output standing wave : 1.2
- Power dissipation : 6mA@5V
- Chip dimensions : 2.0mm x 1.6mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

Description :

AMT1719 is a Ka band dual channel analog predistortion linearization chip. Through the control of predistortion shape of amplitude and phase, it compensates the large signal distortion of solid state power amplifier and traveling wave tube amplifier, and effectively correct the AM-AM, AM-PM non-linear distortion of power amplifier device, in a certain extent, it improves the P1dB and IIP3 target of the power amplifier, enlarges the positive linear region. 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 are 100% RF tested.

Absolute Maximum Ratings (Ta = 25°C)

Symbol	Parameter	Value	Remark
V1, V2	Control voltage	6V/6V	
Pin	Input power	20dBm	
Tm	Sintering Temperature	310°C	30s, N ₂ protection
Tstg	Storage Temperature	-65 ~ +150°C	

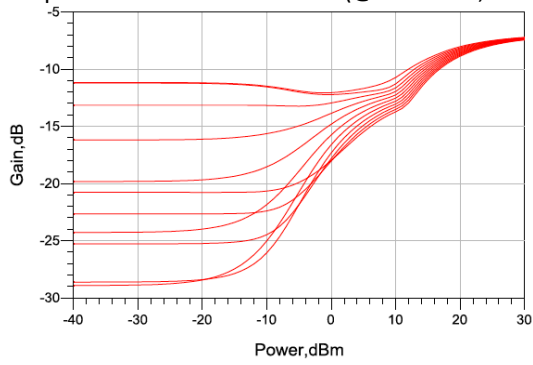
[1] Operation outside any of the Absolute Maximum Ratings may cause permanent device damage.

Electrical Characteristics (Ta = 25°C)

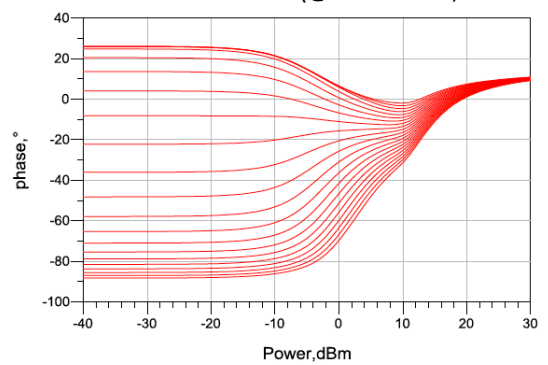
Symbol	Parameter	Value			Unit
		Min	Typical	Max	
VSWRin	Input standing wave	-	1.1	1.3	-
VSWRout	Output standing wave	-	1.1	1.3	-
IL	Insertion loss	9.5	10	11.5	dB

Typical Performance

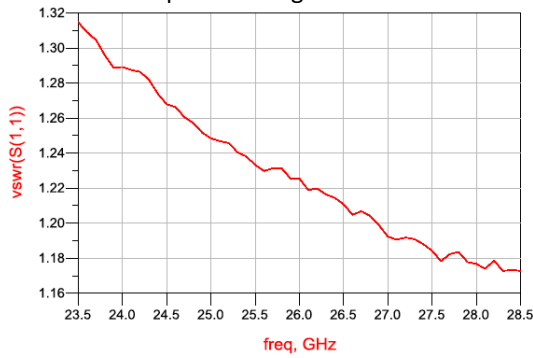
Amplitude Predistortion Curve (@V1 = 2.5V, V2 = 0 – 5V)



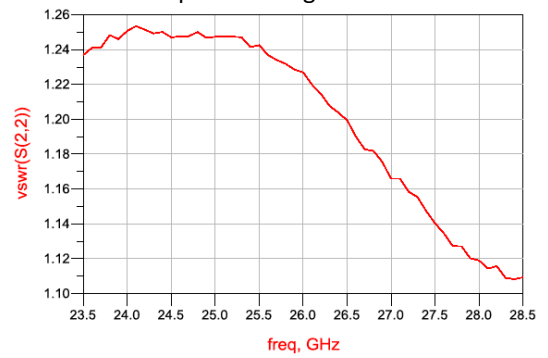
Phase Predistortion Curve (@V1 = 0 – 5V, V2 = 2.5V)



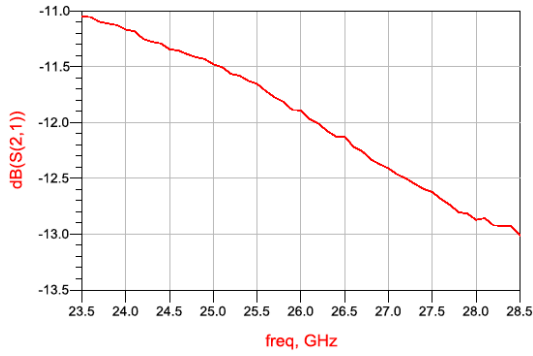
Input Standing Wave Curve



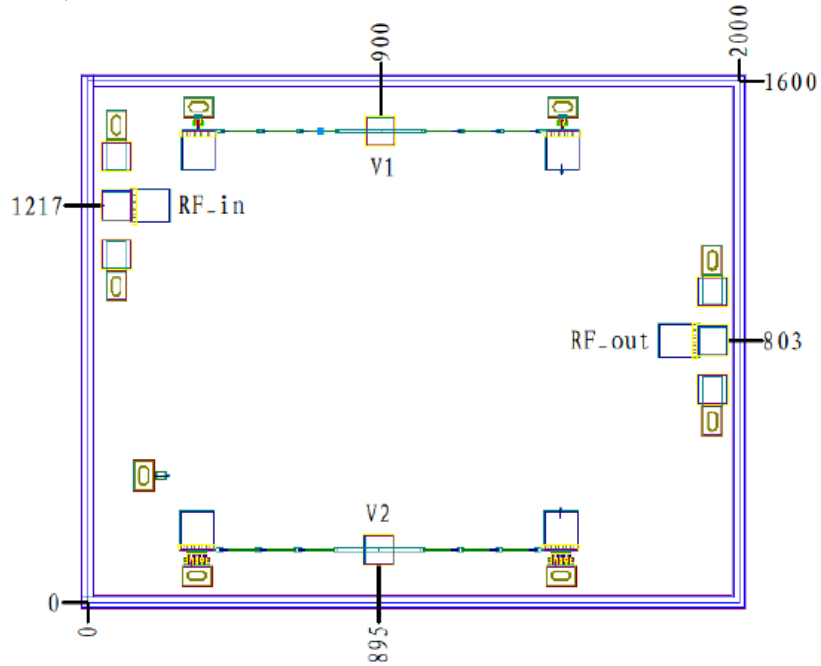
Output Standing Wave Curve



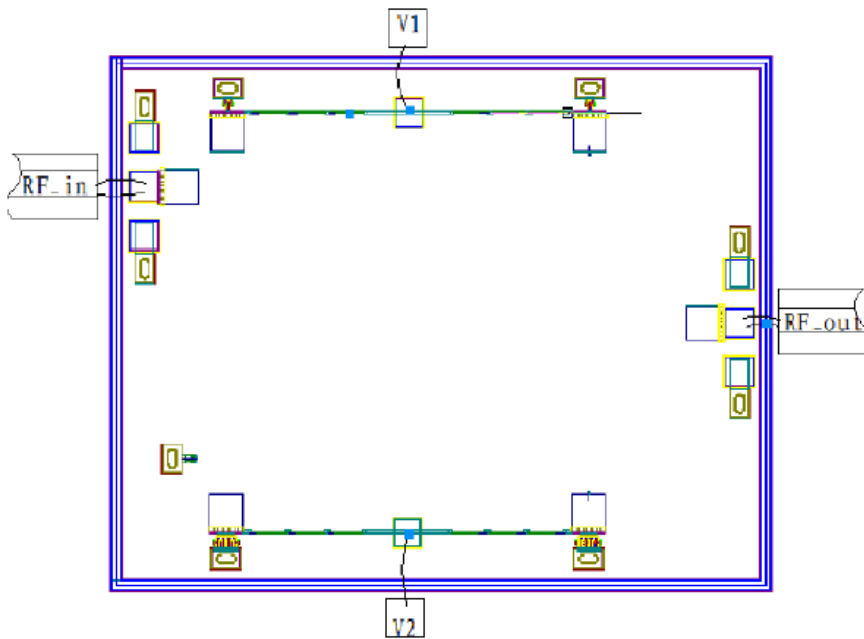
Gain Flatness Curve (@V1 = 2.5V, V2 = 2.5V)



Chip Dimensions (Unit : μm)



Chip Layout Diagram



Pad Definition

No.	Symbol	Function	Dimension	Description
1	RFin	Input pad	$90\mu\text{m} \times 90\mu\text{m}$	external connect to 50Ω system
2	RfOut	Output pad	$90\mu\text{m} \times 90\mu\text{m}$	external connect to 50Ω system
3	V1	Control pad	$100\mu\text{m} \times 100\mu\text{m}$	Recommend operation voltage $0\text{V} - 5\text{V}$
4	V2	Control pad	$100\mu\text{m} \times 100\mu\text{m}$	Recommend operation voltage $0\text{V} - 5\text{V}$

Please see Appendix A for details.