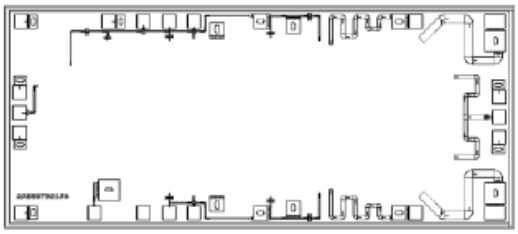
AMT1116

33 – 37GHz Power Amplifier Chip



Key Features :

- Frequency range : 33 – 37GHz
- Typical small signal gain : 28dB
- Typical output power : 29.5dBm
- Voltage bias : 5.0V, -0.5V
- Chip dimensions : 3.8mm x 1.6mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

Description :

AMT1116 chip is designed by Gallium Arsenide (GaAs) pHEMT process, a high performance power amplifier. It uses dual voltage operation, with drain voltage Vd at 5.0V, it provides 28dB linear gain, and 29.5dBm saturated output power in 33 - 37GHz frequency range. 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
Vd	Drain Voltage	+11V	
Pin	Input Signal Power	15dBm	
Tch	Operating Temperature	175°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.

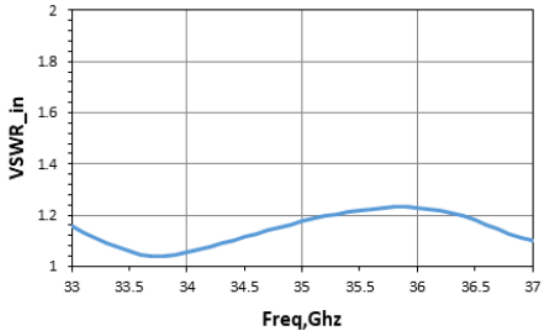
Electrical Characteristics (Ta = 25°C)

Symbol	Parameter	Test Condition	Value			Unit
			Min	Typical	Max	
G	Small Signal Gain	Vd = 5V Vg = -0.5V F : 33 ~ 37GHz	27.5	28	29	dB
Id	Operation Current		-	0.85	-	A
VSWR_in	Input SW		-	1.2	-	
VSWR_out	Output SW		-	1.6	-	
Gp	Power Gain		-	22.5	-	dB
Po(sat)	Saturated Output Power		-	29.5	-	dBm
PAE	Power Added Efficiency		-	22	-	%

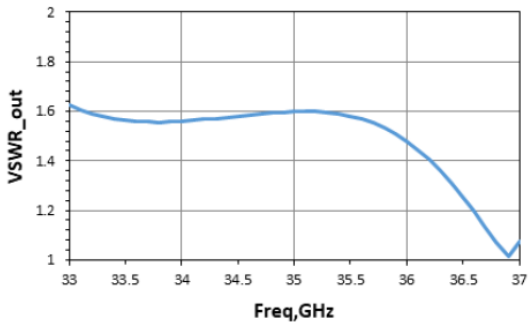
Note, no CW operation.

Typical Performance

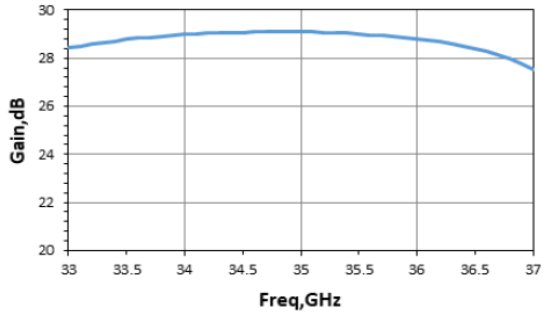
Input Standing Wave Curve



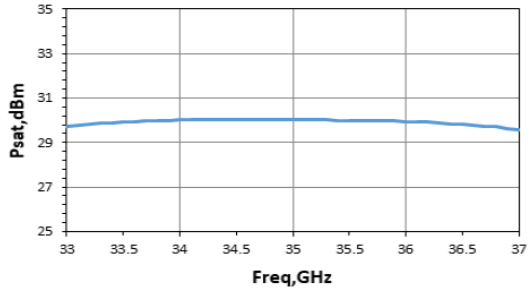
Output Standing Wave Curve



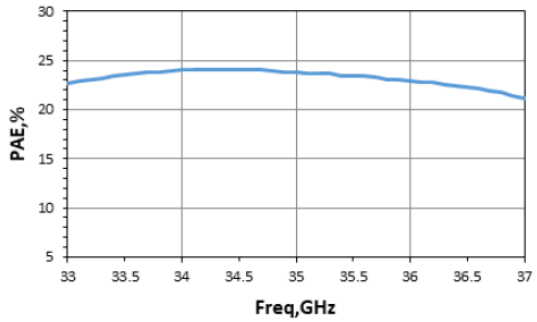
Gain Curve



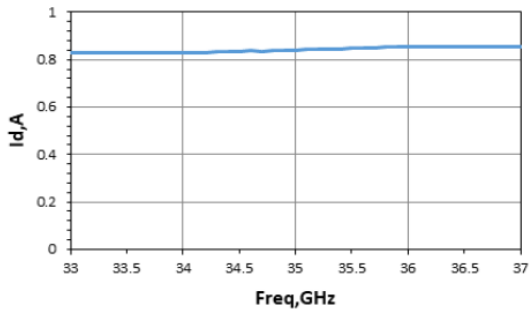
Output Power Curve



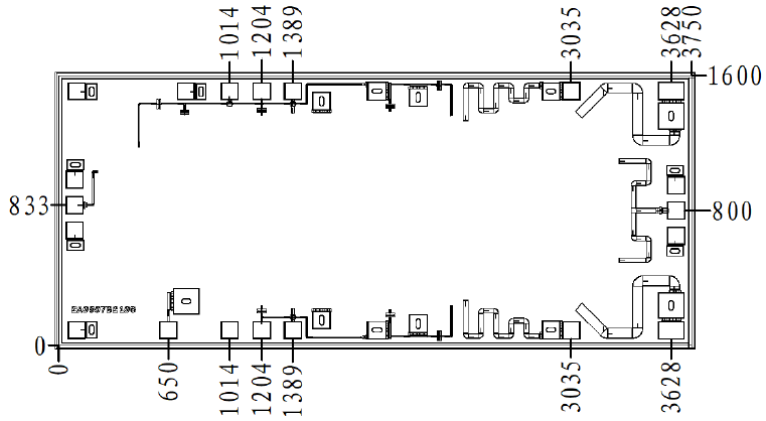
Efficiency Curve



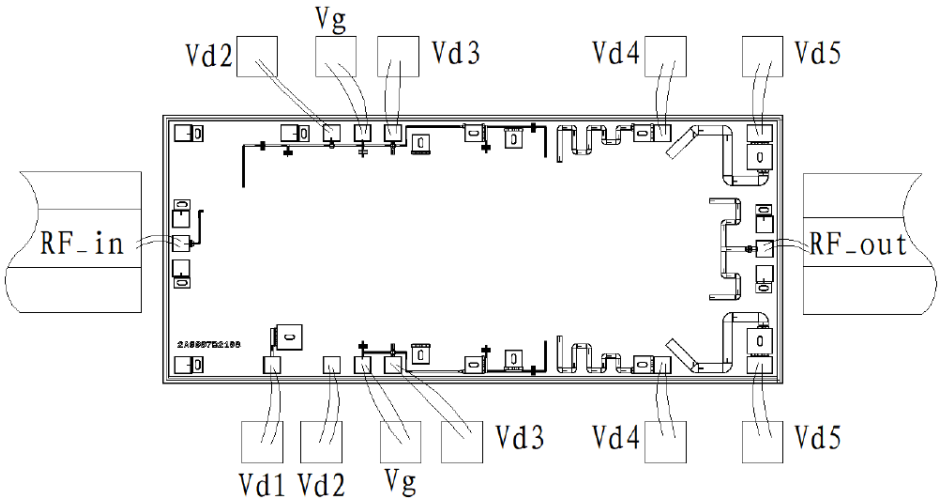
Current Curve



Chip Dimensions (Unit : μm)



Chip Layout Diagram



Please see Appendix A for details.