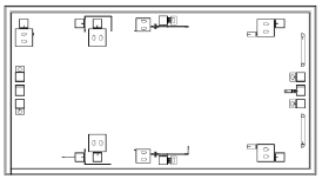
**AMT1113**

**9 – 19GHz Power Amplifier Chip**



**Key Features :**

- Frequency range : 9 – 19GHz
- Typical small signal gain : 26dB
- Typical output power : 35dBm
- Voltage bias : Vd = 8V, Vg = -0.7V
- Chip dimensions : 3.6mm x 1.9mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

**Description :**

AMT1113 chip is designed by Gallium Arsenide (GaAs) pHEMT process, a high performance 9 - 19GHz power amplifier, it uses dual voltage operation, with drain voltage Vd at 8.0V, it offers around 26dB linear gain, and 35dBm saturated output power. 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 | -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.

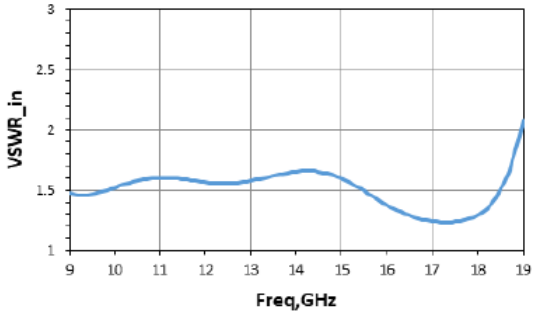
**Electrical Characteristics (Ta = 25°C)**

| Symbol | Parameter | Test Condition | Value | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min | Typical | Max | |
| G | Small Signal Gain | Vd = 8V<br>Vg = -0.7V<br>F : 9 ~ 19GHz | 25.5 | 26 | 27.5 | dB |
| Id | Operating Current | | - | 1.15 | - | A |
| VSWR_in | Input SW | | - | 1.6 | - | |
| VSWR_out | Output SW | | - | 2.3 | - | |
| Gp | Power Gain | | - | 23.5 | - | dB |
| Po(sat) | Saturated Output Power | | - | 35 | - | dBm |
| PAE | Efficiency | | - | 38 | - | % |

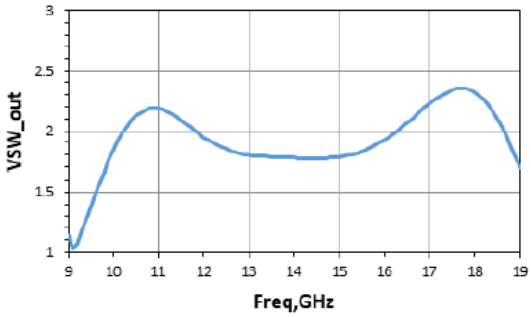
Note, no CW operation.

## Typical Performance

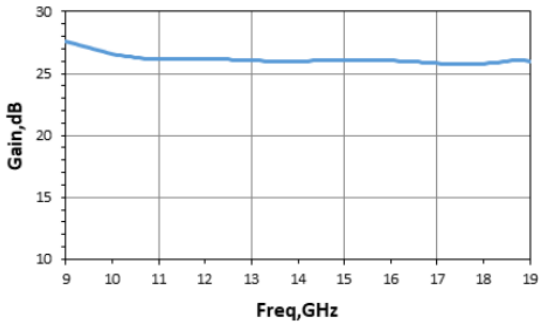
Input Standing Wave Curve



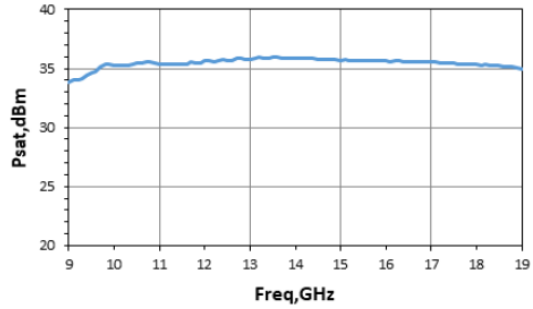

Output Standing Wave Curve



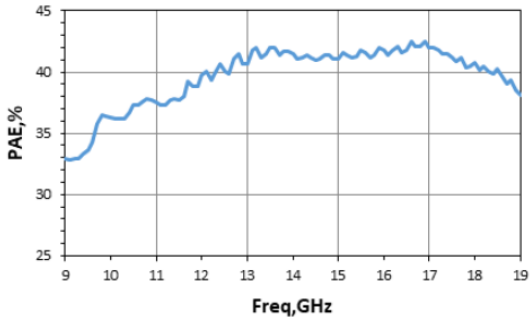

Gain Curve



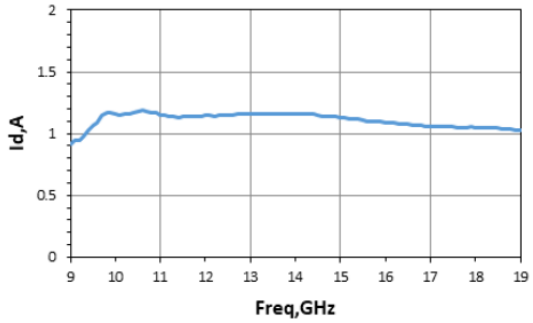

Output Power Curve



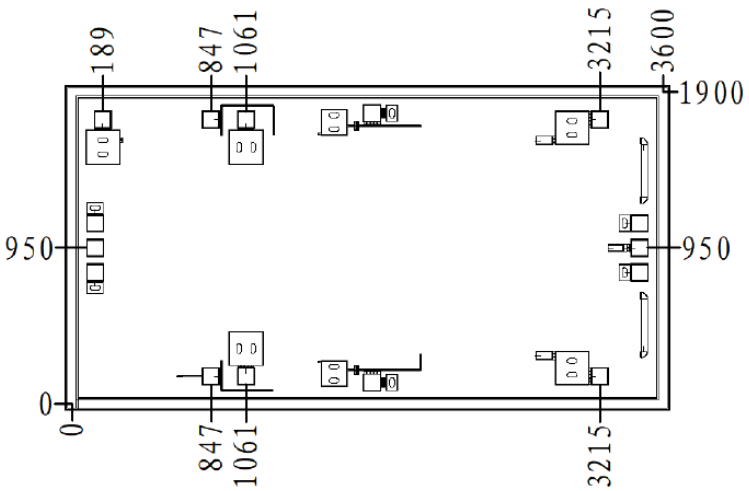

Efficiency Curve



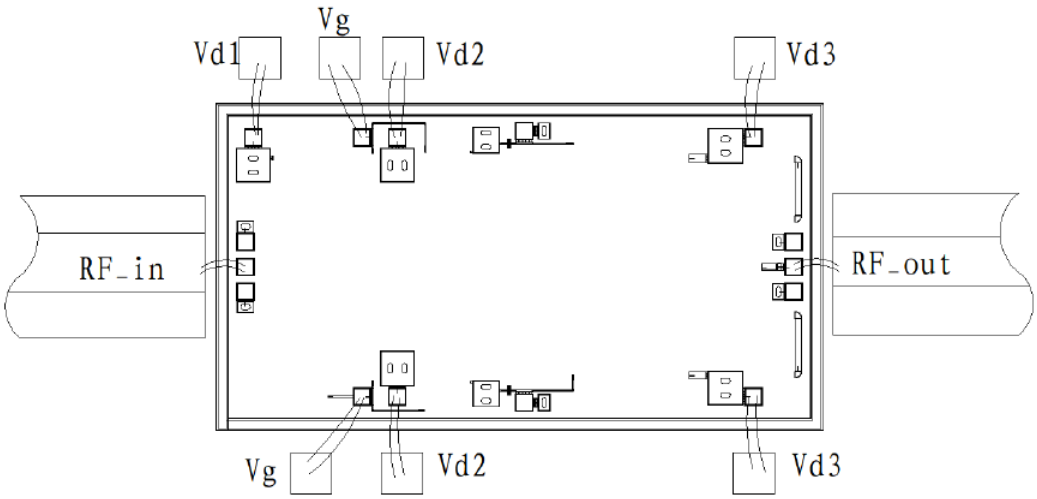

Current Curve



## Chip Dimensions (Unit : μm)




## Chip Layout Diagram




Please see Appendix A for details.