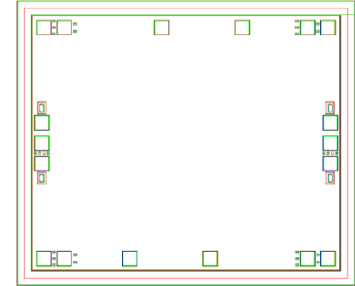


AMT1319
6 - 18GHz Transceiver Integrated Multi-Function Chip



Key Features :

- Frequency range : 6 – 18GHz
- Transceiver gain : 21dB
- Receive input/output standing wave : 1.5/2
- Transmit input/output standing wave : 1.5/2
- Transceiver output power at P-1 : 18dBm
- Transceiver power dissipation : 5V/80mA
- Switch control method : TTL
- Chip dimensions : 2.4mm x 2.0mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

Description :

AMT1319 is a high performance transceiver multi-function chip, frequency range is 6 – 18GHz, integrated switch and bi-directional power amplifier, symmetrical link of receiver and transmitter, with transceiver gain at 21dB, and output power at P-1 is 18dBm. It is designed by Gallium Arsenide (GaAs) 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)

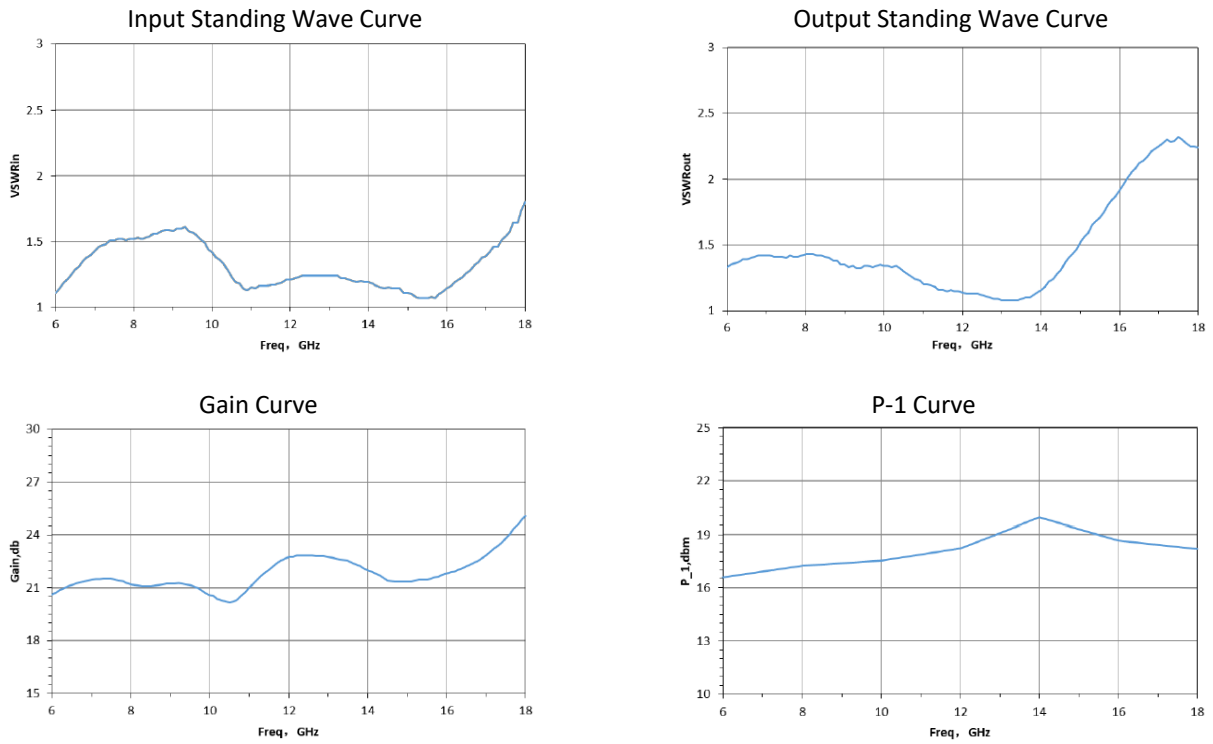
Symbol	Parameter	Value	Remark
VD	Drain voltage	+7V	
VEE	Drive supply voltage	-6V	
Pin	Max. Input Signal Power	20dBm	
Tch	Operation Temperature	150°C	
Tm	Sintering Temperature	310°C	30s, N ₂ protection
Tstg	Storage Temperature	-65 ~ +150°C	

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

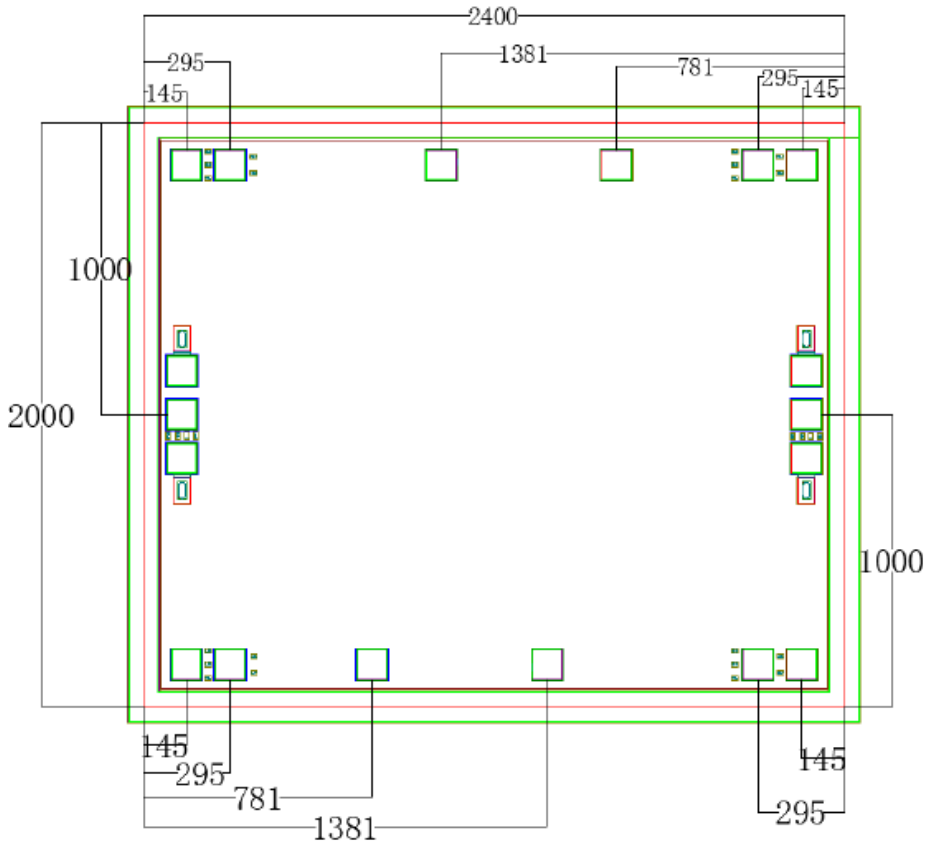
Electrical Characteristics (Ta = 25°C)

Symbol	Parameter	Test Conditions	Value			Unit
			Min	Typical	Max	
G _R	Receive gain	F : 6~18GHz	20	21	25	dB
VSWR _{RX}	Receive input standing wave	VD1=+5V, VD2=0V, VEE=-5V, SW=0V	-	1.5	1.8	-
VSWR _{RX}	Receive output standing wave		-	2	2.5	-
P _{R-1dB}	Receive output at P-1 point		16.5	18	20	dBm
G _T	Transmit gain	F : 6~18GHz	20	21	25	dB
VSWR _{TX}	Transmit input standing wave	VD1=+5V, VD2=0V, VEE=-5V, SW=+5V	-	1.5	1.8	-
VSWR _{TX}	Transmit output standing wave		-	2	2.5	-
P _{T-1dB}	Transmit output at P-1 point		16.5	18	20	dBm

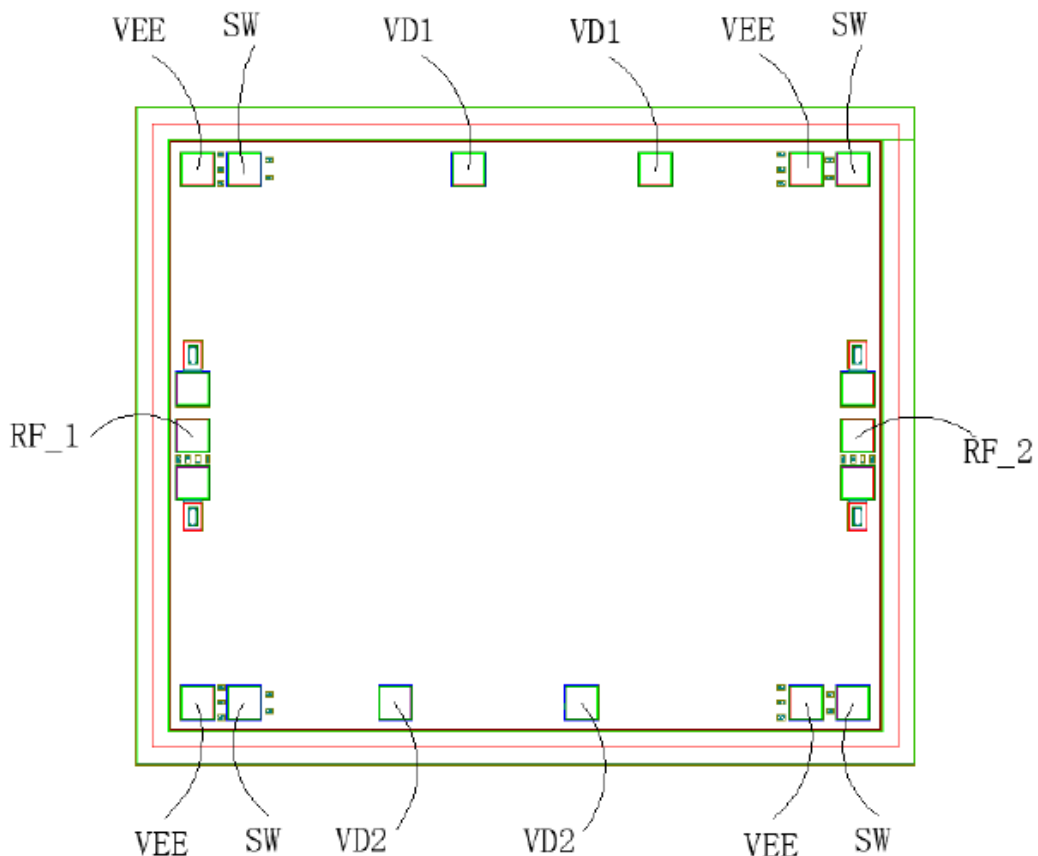
Typical Performance



Chip Dimensions (Unit : μm)



Chip Layout Diagram



Usage Description

Operate State	Receive State (RF_2 Input)	Transmit State (RF_1 Input)
Voltage bias	VD1=0V, VD2=+5V	VD1=+5V, VD2=0V
	VEE=-5V, SW=0V	VEE=-5V, SW=+5V

Note, either VD1 or VD2 solder pads can be used; any one of the four sets of VEE/SW can be used.

Please see appendix A for details.