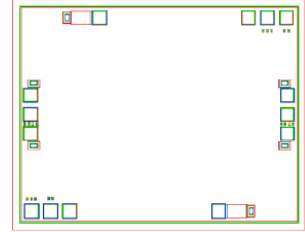


24 - 28GHz Transceiver Integrated Multi-Function Chip



Key Features :

- Frequency range : 24 – 28GHz
- Receiver/Transmitter gain : 21dB
- Receiver/Transmitter noise figure : 5.2dB
- Receiver input/output standing wave : 1.4/1.4
- Transmitter input/output standing wave : 1.4/1.4
- Receiver/Transmitter output power at P-1 : 17dBm
- Receiver/Transmitter power dissipation : 5V/100mA
- Switch control method : TTL
- Chip dimensions : 2.3mm x 1.8mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

Description :

AMT1321 is a high performance transceiver multi-function chip, frequency range is 24 – 28GHz, it integrates switch and bi-directional power amplifier, symmetrical link of transceiver, gain is 21dB, output power at P-1 is 17dBm. 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)

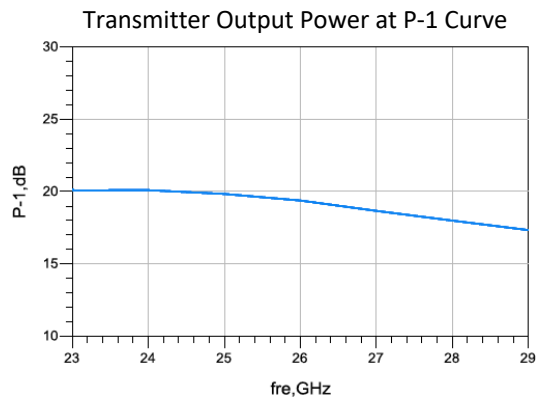
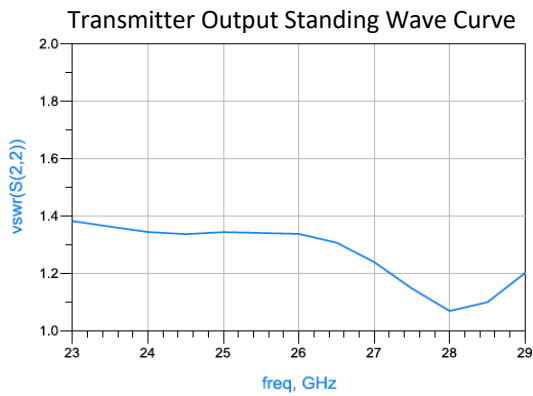
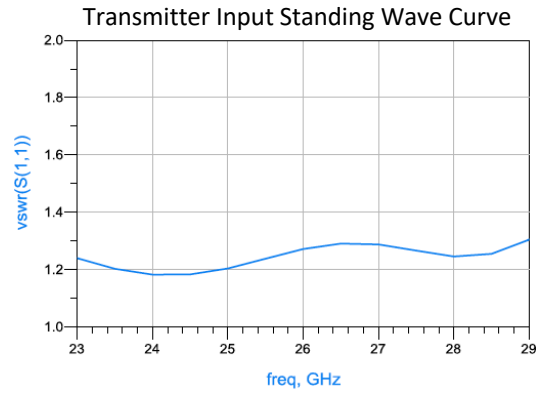
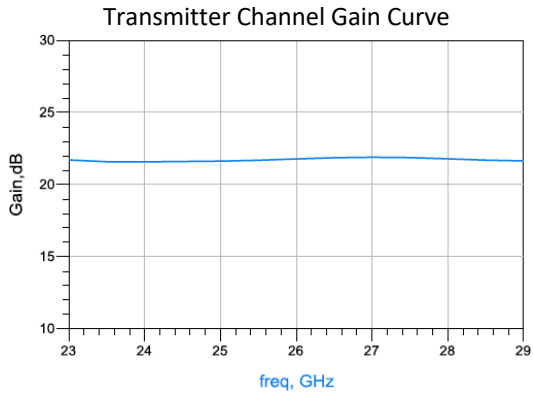
Symbol	Parameter	Value	Remark
VD	Drain voltage	+7V	
VEE	Driver supply voltage	-6V	
Pin	Max. Input Signal Power	25dBm	
Tch	Operation Temperature	150°C	
Tm	Sintering Temperature	310°C	30s, N ₂ protection
Tstg	Storage Temperature	-65 ~ +150°C	

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

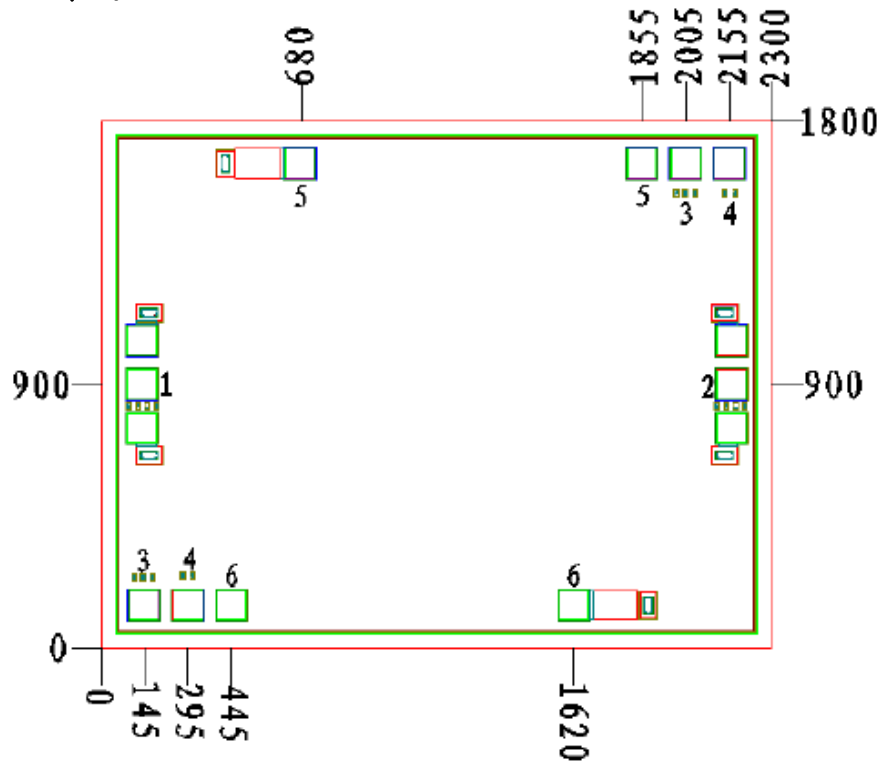
Electrical Characteristics (Ta = 25°C)

Symbol	Parameter	Test Conditions	Value			Unit
			Min	Typical	Max	
G _R	Receiver gain	F : 24 ~ 28GHz	-	21	-	dB
VSWR _{RX}	Receiver input standing wave	VD1 = 0V	-	1.4	-	-
VSWR _{RX}	Receiver output standing wave	VD2 = +5V	-	1.4	-	-
P _{R-1dB}	Receiver output power at P-1 point	VEE = -5V SW = 0V	-	17	-	dBm
G _T	Transmitter gain	F : 24 ~ 28GHz	-	21	-	dB
VSWR _{TX}	Transmitter input standing wave	VD1 = +5V	-	1.4	-	-
VSWR _{TX}	Transmitter output standing wave	VD2 = 0V	-	1.4	-	-
P _{T-1dB}	Transmitter output power at P-1 point	VEE = -5V SW = +5V	-	17	-	dBm

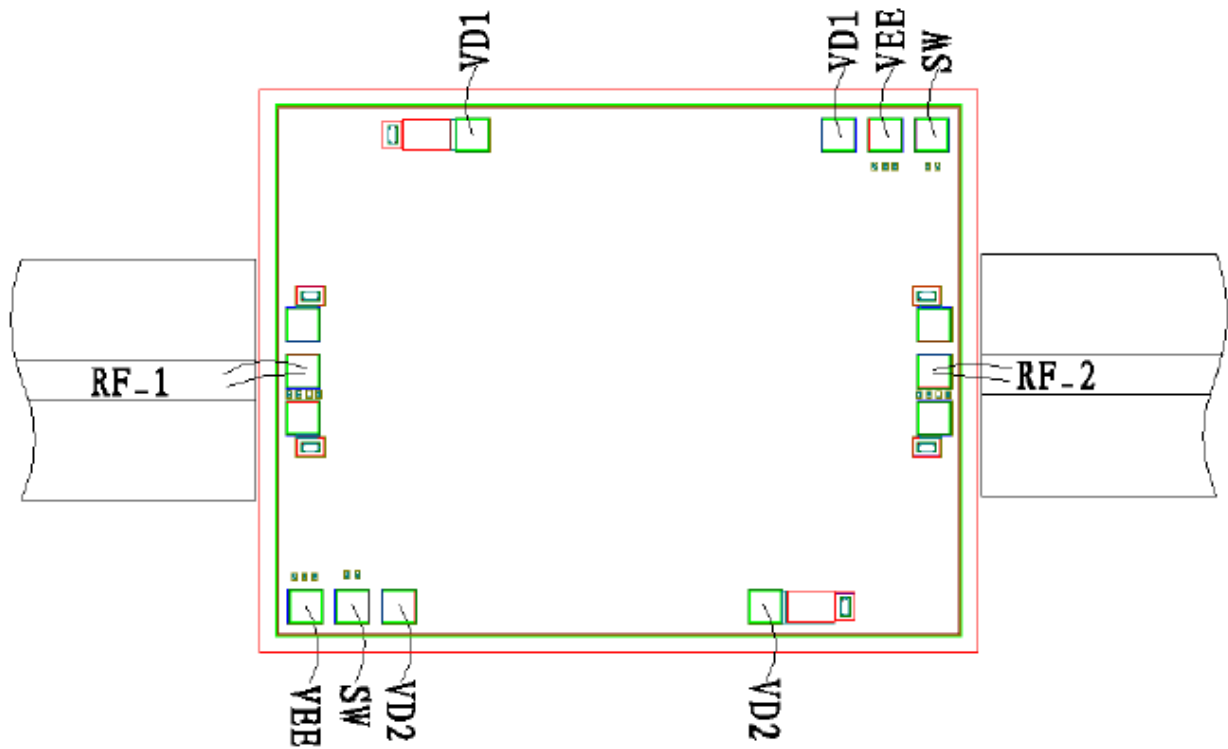
Typical Performance



Chip Dimensions (Unit : μm)



Chip Layout Diagram



Usage Description

Symbol	Function Description	Dimensions
RF_1	Transmitter RF signal input port/Receiver RF signal output port, external connecting to 50Ω system.	100μm * 100μm
RF_2	Receiver RF signal input port/Transmitter RF signal output port, external connecting to 50Ω system.	100μm * 100μm
VEE	0V/-5V voltage control	100μm * 100μm
SW	0V/-5V voltage control	100μm * 100μm
VD1	Transmitter channel voltage bias	100μm * 100μm
VD2	Receiver channel voltage bias	100μm * 100μm

Please see appendix A for details.