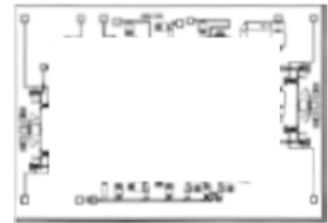


34 - 36GHz Transceiver Integrated Multi-Function Chip



Key Features :

- Receiver frequency range : 34 – 36GHz
- Receiver gain : 26dB
- Receiver noise figure : 3.5dB
- Receiver input/output standing wave : 1.4
- Transmitter frequency range : 34 – 36GHz
- Transmitter small signal gain : 23dB
- Transmitter output power at P-1 : 22dBm
- Transmitter input/output standing wave : 1.8
- Chip dimensions : 4.0mm x 3.0mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

Description :

AMT1323 is a high performance transceiver multi-function chip, frequency range is 34 – 36GHz, receiver channel gain is 26dB, noise figure is 3.5dB, transmitter channel gain is 23dB, and transmitter output power at P-1 is 22dBm. 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)

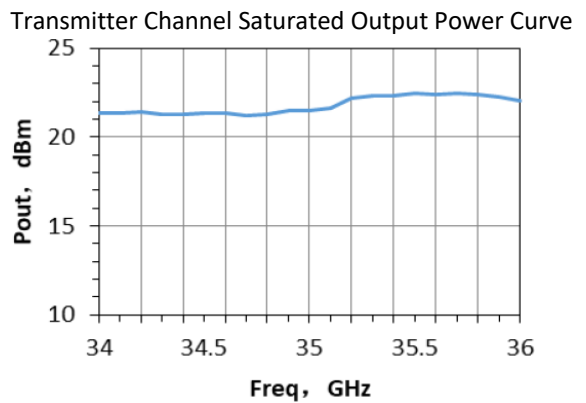
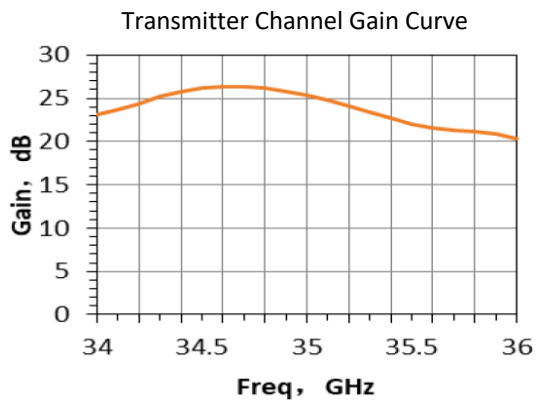
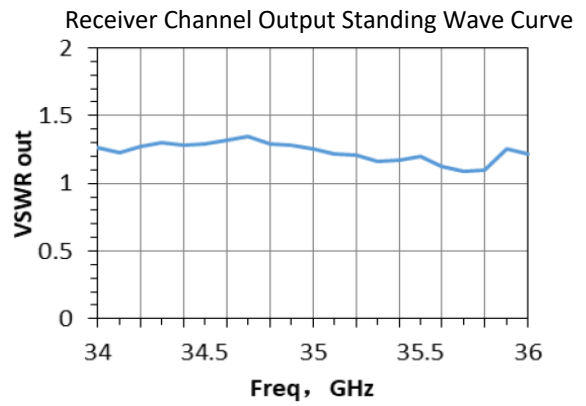
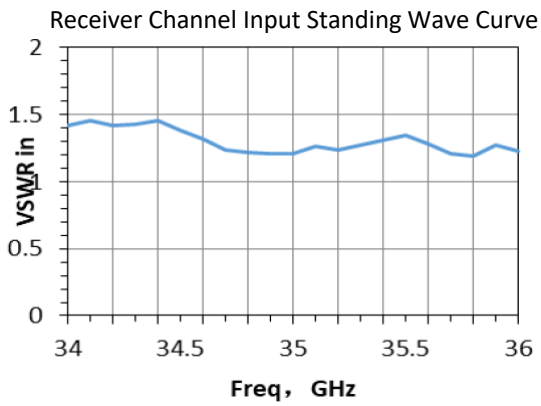
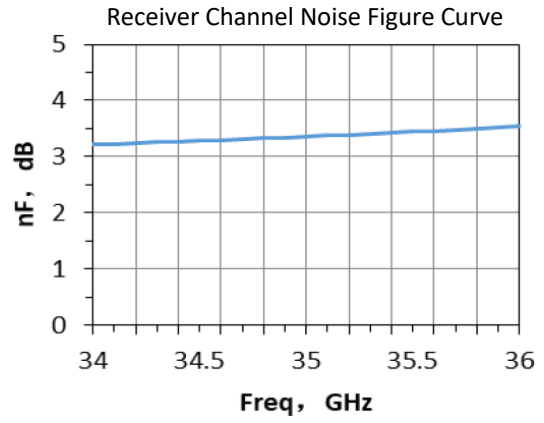
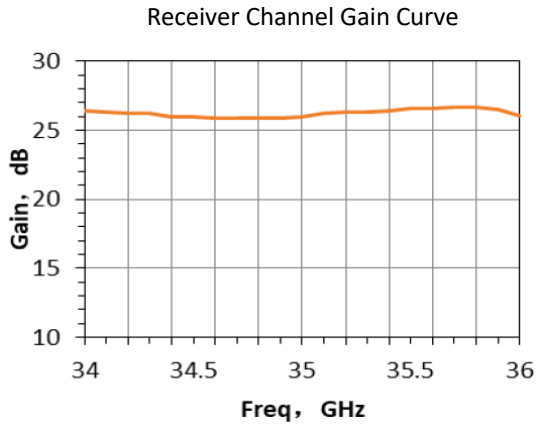
Symbol	Parameter	Value	Remark
Vd	Drain voltage	+7V	
Pin	Max. Input Signal Power	12dBm	
Tch	Operation Temperature	150°C	
Tm	Sintering Temperature	310°C	30s, N ₂ protection
Tstg	Storage Temperature	-65 ~ +150°C	

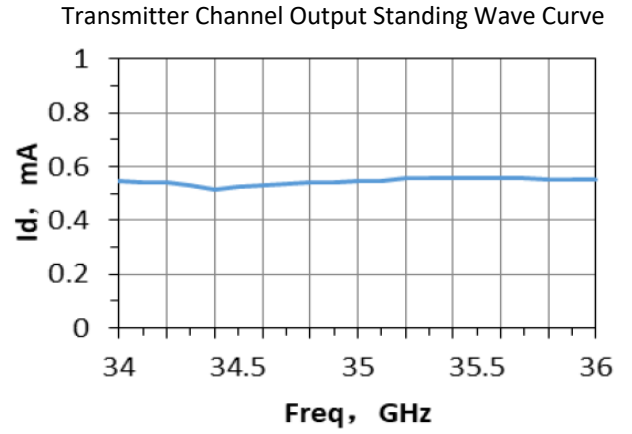
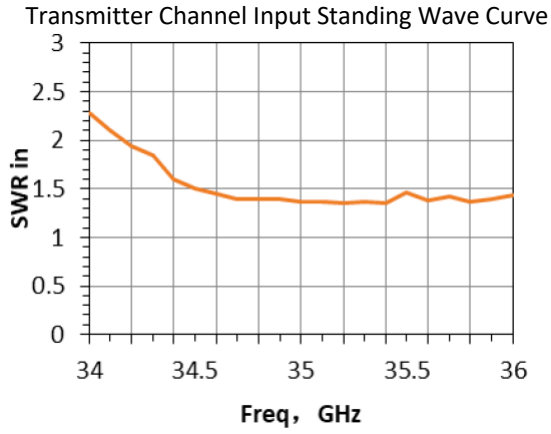
[1] Operation outside any of the Absolute Maximum Ratings may cause permanent device damage.

Electrical Characteristics (Ta = 25°C)

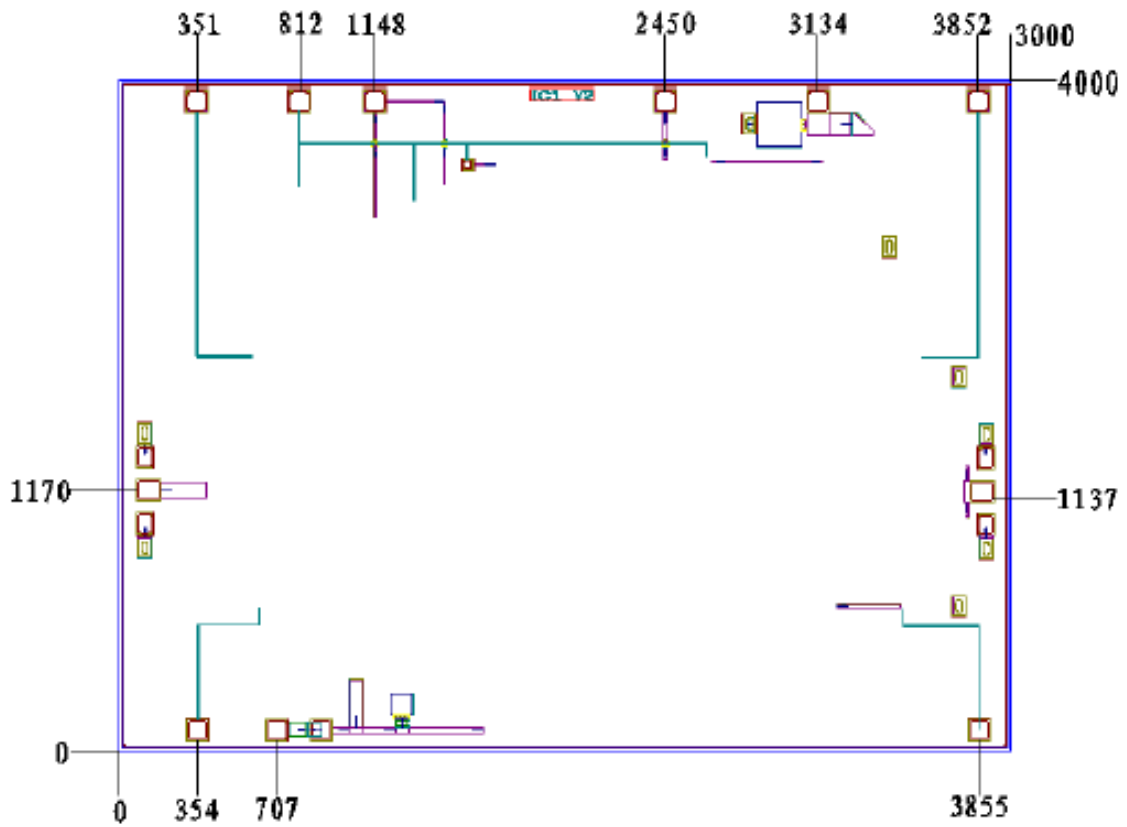
Symbol	Parameter	Test Conditions	Value			Unit
			Min	Typical	Max	
G _R	Receiver gain	Vd2 = +5V F : 34 ~ 36GHz SW1 = 0V SW2 = -5V	-	26	-	dB
NF	Receiver noise figure		-	3.5	-	dB
VSWR _{RX}	Receiver input standing wave		-	1.4	-	-
VSWR _{RX}	Receiver output standing wave		-	1.4	-	-
P _{R-1dB}	Receiver output power at P-1 point		-	2.5	-	dBm
I	Receiver current		-	40	-	mA
G _T	Transmitter power gain	Vd1 = +3V Vg = -0.5V F : 34 ~ 36GHz SW1 = -5V SW2 = 0V	-	23	-	dB
VSWR _{TX}	Transmitter input standing wave		-	1.8	-	-
VSWR _{TX}	Transmitter output standing wave		-	2	-	-
P _{T-1dB}	Transmitter output power at P-1 point		-	22	-	dBm
I	Transmitter static current		-	0.5	-	A

Typical Performance

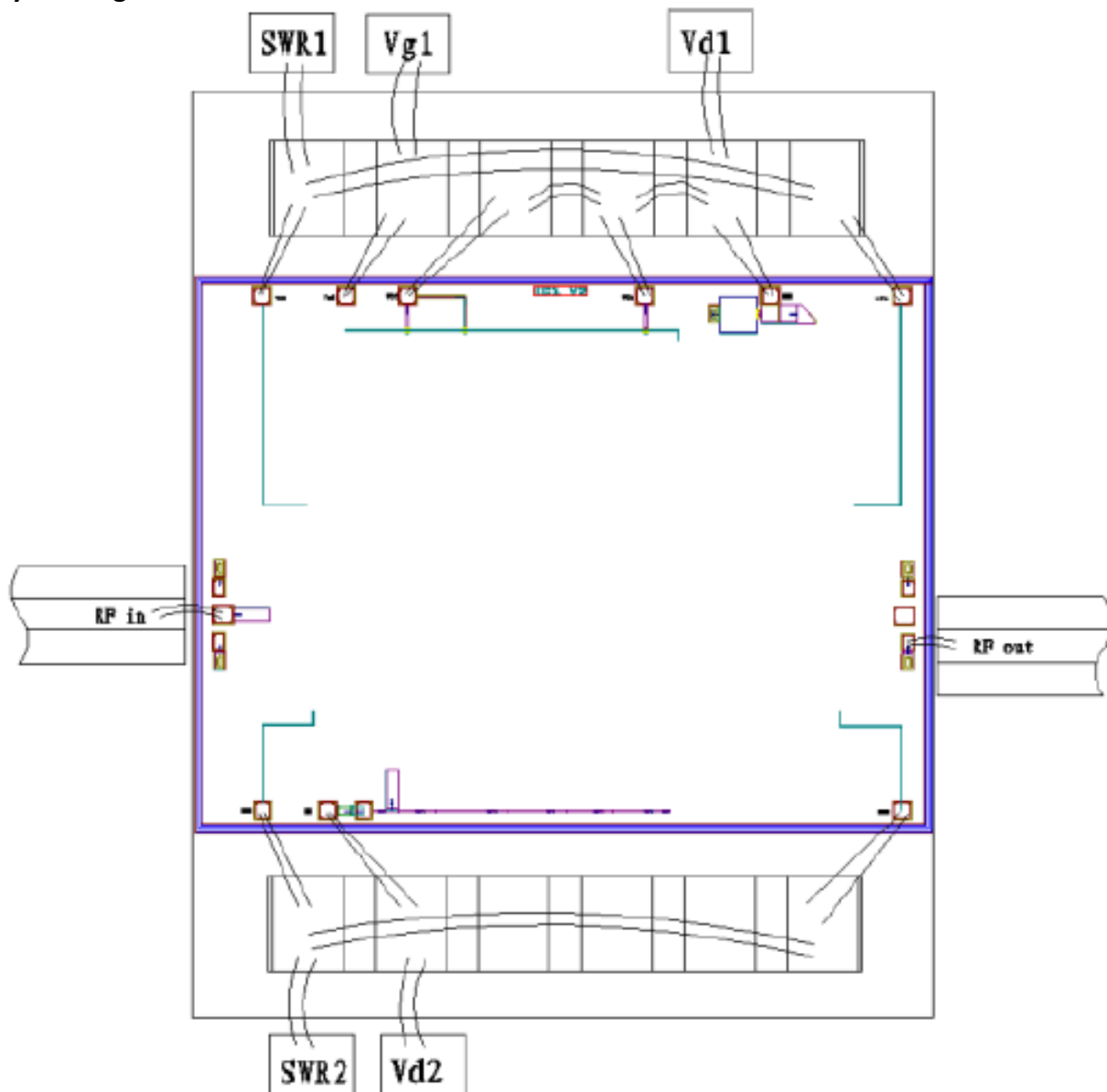




Chip Dimensions (Unit : μm)



Chip Layout Diagram



Usage Description

Operation State	Receive State	Transmit State
Voltage bias	Vd1 = 0V, Vg = 0V, Vd2 = 5V SW1 = 0V, SW2 = -5V	Vd1 = 3V, Vg = -0.5V, Vd2 = 0V SW1 = -5V, SW2 = 0V

Please see appendix A for details.