

Features

- Frequency Range : 2.0 ~ 4.0GHz
- Gain : 25.5dB
- OP₁dB : 16dBm
- Supply Voltage : +5V@80mA
- Die Size : 2.5mm×2.1mm×0.1mm

Typical Applications

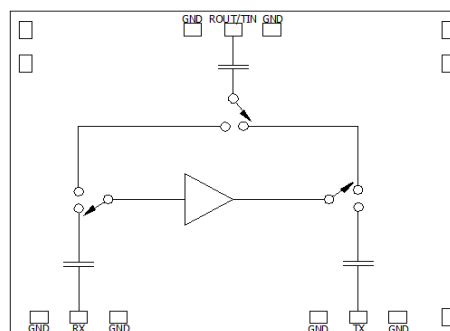
- EW
- Military Radar and Weather Radar
- SATCOM
- Beamforming
- Phase Shift

General Description

XT3608 is a bi-directional MMIC amplifier which operates between 2GHz to 4GHz. It is fabricated by GaAs process. It has bi-directional amplification function, and can be switched between forward/reverse amplification by external digital control signal. It provides 25.5dB gain and 16dBm OutputP₁dB by consuming just 80mA current.

The chip is back-metalized to ensure better grounding. It can be die-mounted with AuSn eutectic preform or with electrically conductive epoxy.

Functional Diagram



Electrical Performance (T_A=+25°C , V_D=+5V , I_D=80mA , Z₀=50Ω)

Parameter	Min.	Typ.	Max.	Units
Frequency	2.0~4.0			GHz
Receive Gain	—	25.5	—	dB
Transmit Gain	—	25.5	—	dB
Receive Input VSWR	—	1.2	—	:1
Receive Output VSWR	—	1.5	—	:1
Transmit Input VSWR	—	1.6	—	:1
Transmit Output VSWR	—	1.6	—	:1
Output Power for 1 dB Compression	—	16	—	dBm
I _D	—	80	—	mA

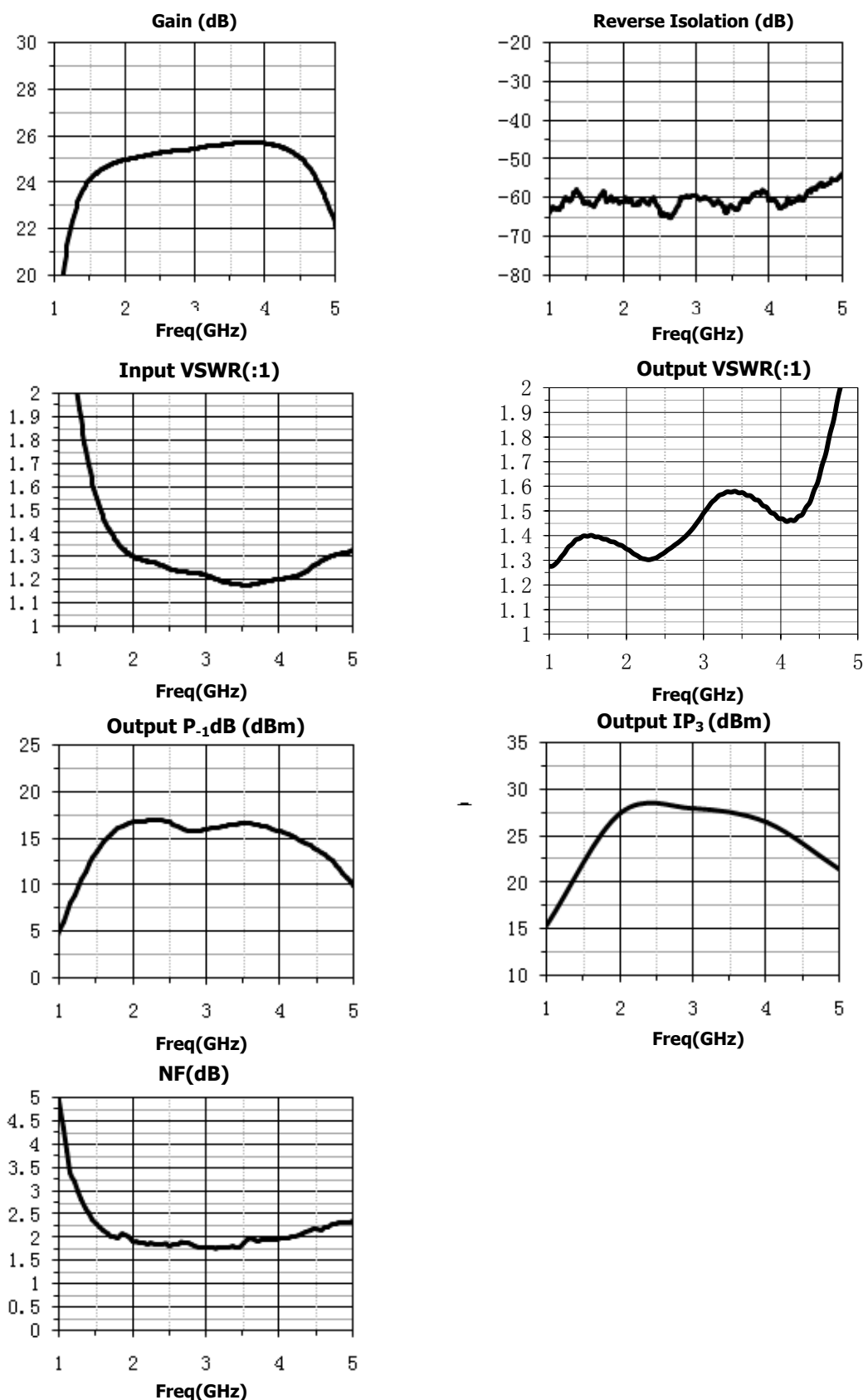
Absolute Maximum Ratings

Input Power	18dBm	Operating Temperature	-55°C~+85°C
Control Voltage Range	-0.5~5.5V	Storage Temperature	-65°C~+150°C
Channel temperature	150°C	ESD (HBM)	Class 1A

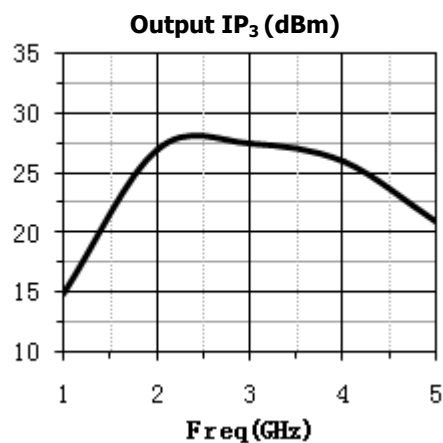
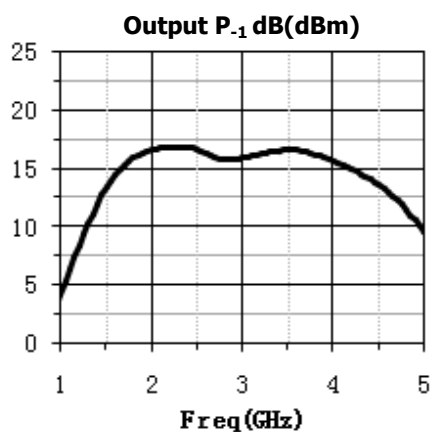
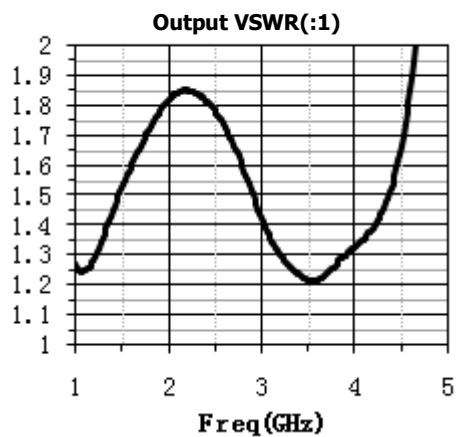
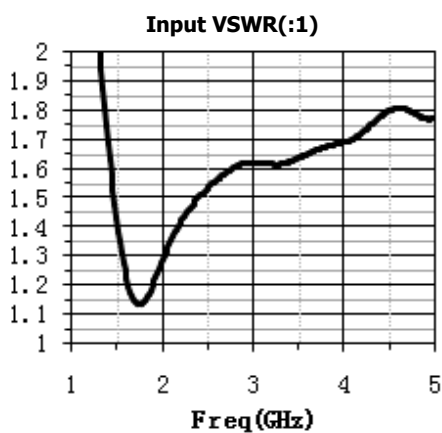
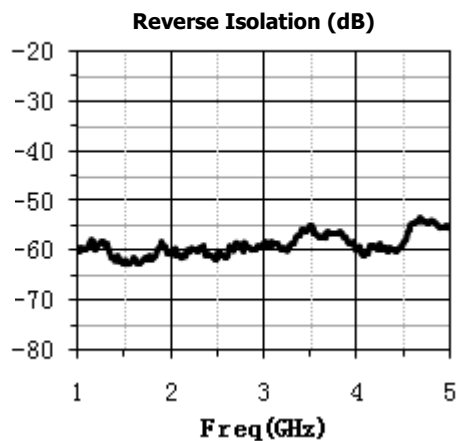
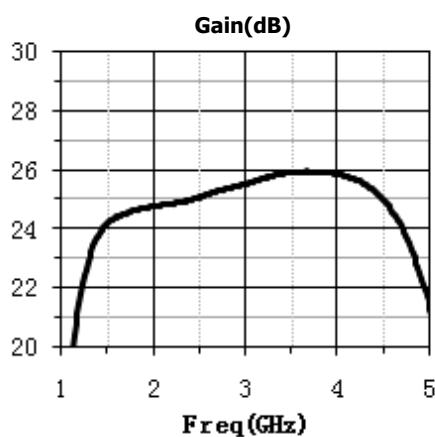
Truth Table

	V2	V1
Receive	-5	0
Transmit	0	-5

Typical Test Curve(Rx State)



Typical Test Curve (Tx State)

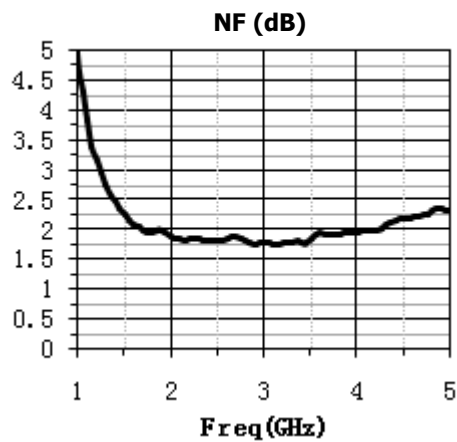


XT3608



GaAs MI Bilateral Amplifier
2.0~4.0GHz

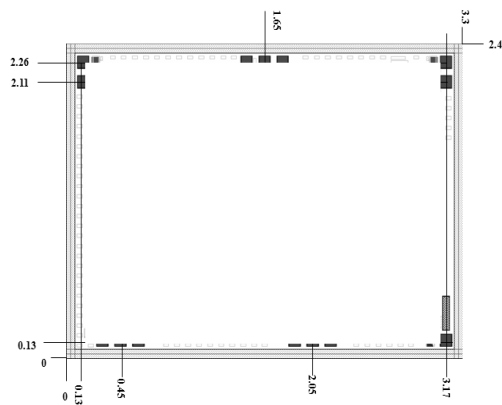
Rev 2.0



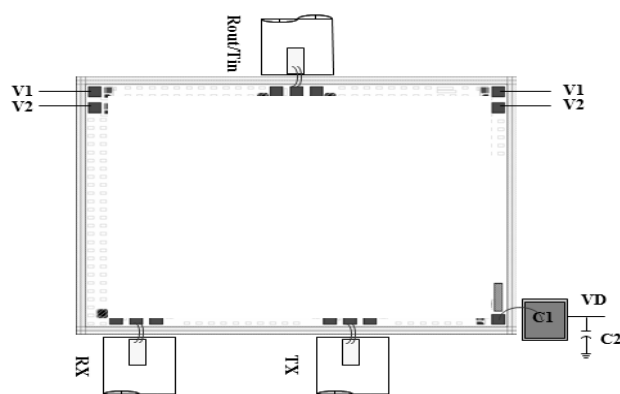
Components List

Reference Des.	Value	Part Number	Manuf.	Size
C1	100pF	—	RADVISTA	Chip
C2	10nF	GRM1857U1A103JA44	MURATA	0603

Die Outline (all dimensions in mm)



Assembly Diagram



Attention:

GaAs MMIC devices are susceptible to damage from Electrostatic Discharge. Proper precautions should be observed during handling, assembly and test.