XT3008B

GaAs MMIC Low Noise Amplifier
0.4～6GHz

Rev 1.0

Features

- Frequency：0.4～6GHz
- Gain：18dB
- Output P_{-1}dB：17.5dBm
- Supply Voltage：+5V@58mA
- Die Size：1.24mm×1.21mm×0.1mm

Typical Applications

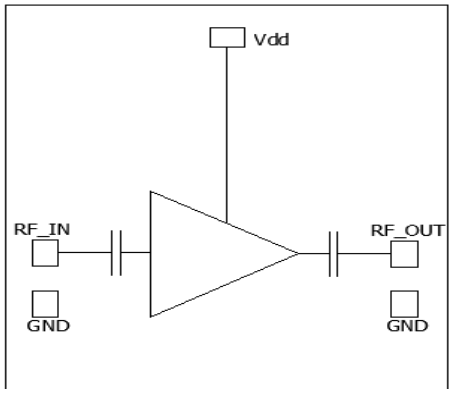
- Microwave radio including point to point communication
- Telecommunication
- Weather radar
- Optical communication
- Test instrumentation
- SatCom
- VSAT
- Military and Aerospce

General Description

The XT3008B is a GaAs MMIC Low Noise Amplifier die which operates between 0.4GHz～6GHz. The amplifier can provide 18dB gain, 17.5dBm OutputP_{-1}dB,1.2dB noise figure from a 58 mA supply current.

The chip offers full passivation for increased reliability and moisture protection. This amplifier is the perfect alternative to higher cost hybrid amplifiers.

Functional Diagram



Electrical Performance (T_A=25℃,V_D=+5V,I_D=58mA,Z_0=50Ω)

Parameter	Min.	Typ.	Max.	Units
Frequency Range		0.4～6		GHz
Gain	16	18	—	dB
Gain Flatness	—	±1	±2	dB
Reverse Isolation	—	-25	—	dB
Input/Output VSWR	—	1.5	1.7	:1
Noise Figure	—	1.2	1.8	dB
Output Power for 1 dB Compression (OP-1dB)	16	17.5	—	dBm
Output Third Order Intercept (OIP3)	25	30	—	dBm
Supply Current(ID)	—	58	—	mA

Absolute Maximum Ratings

Maximum Input Power	+15dBm	Operating Temperature	-55℃～+85℃
Channel Temperature	+150℃	Storage Temperature	-65℃～+150℃

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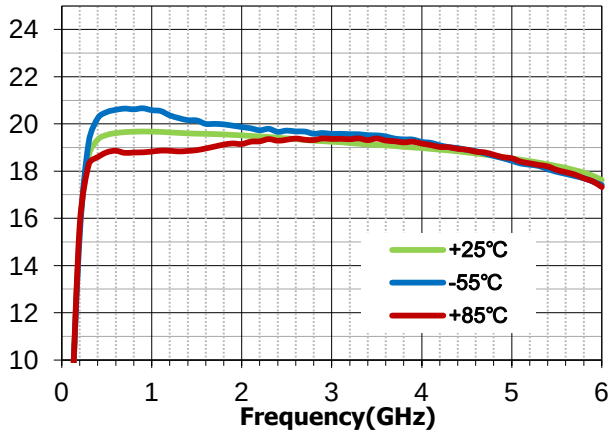
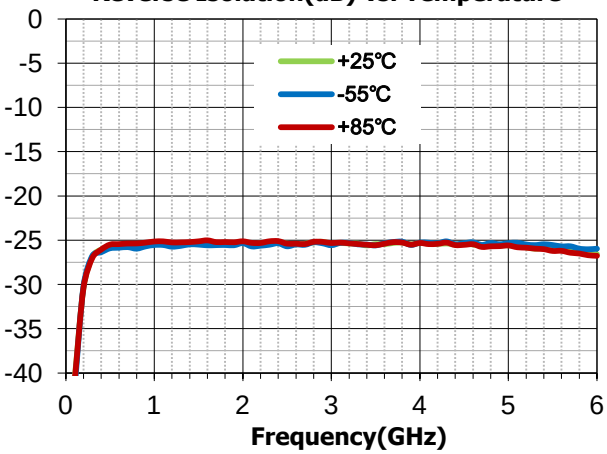
Typical Performance Curve

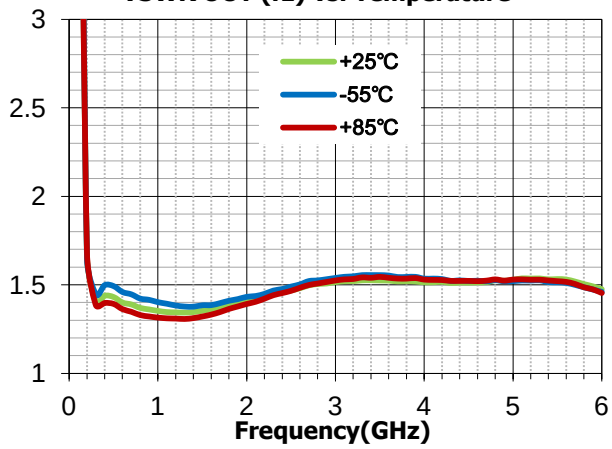
Gain(dB) vs. Temperature



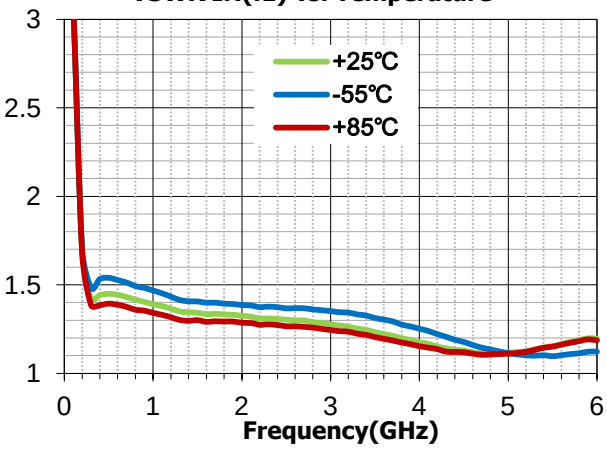
Reverse Isolation(dB) vs. Temperature



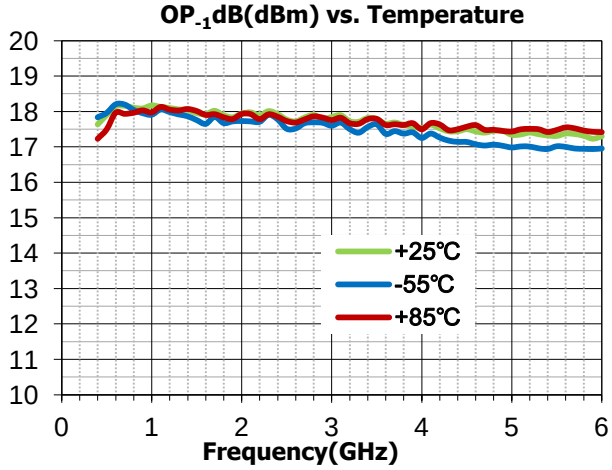
VSWR OUT (:1) vs. Temperature



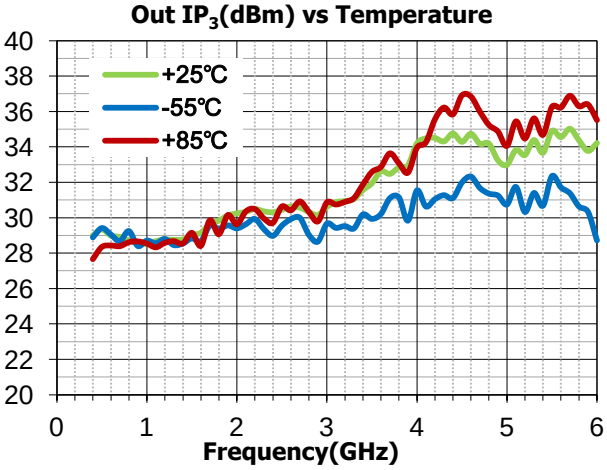
VSWR IN(:1) vs. Temperature

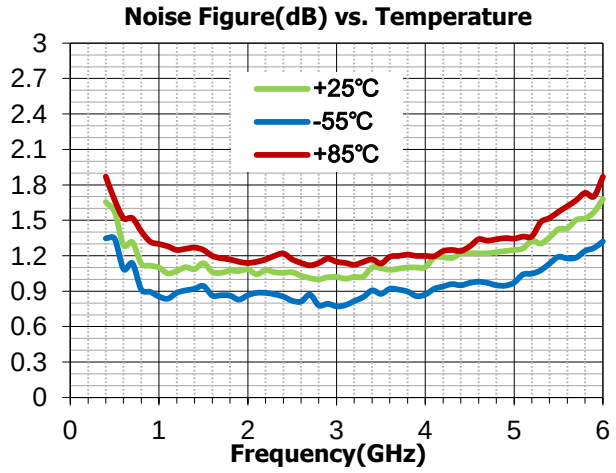


OP$_{-1}$dB(dBm) vs. Temperature

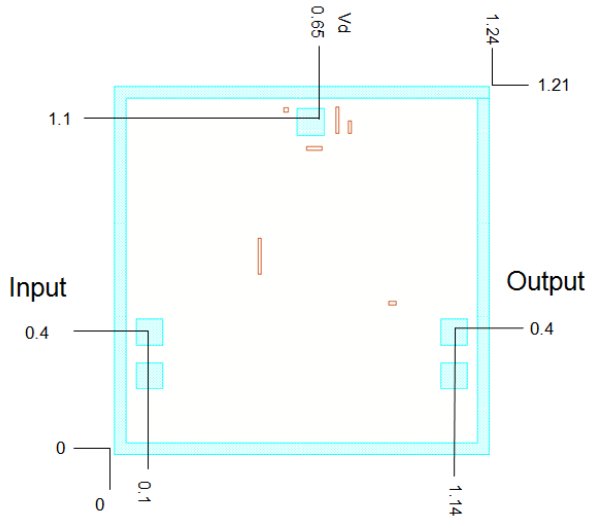


Out IP$_3$(dBm) vs Temperature

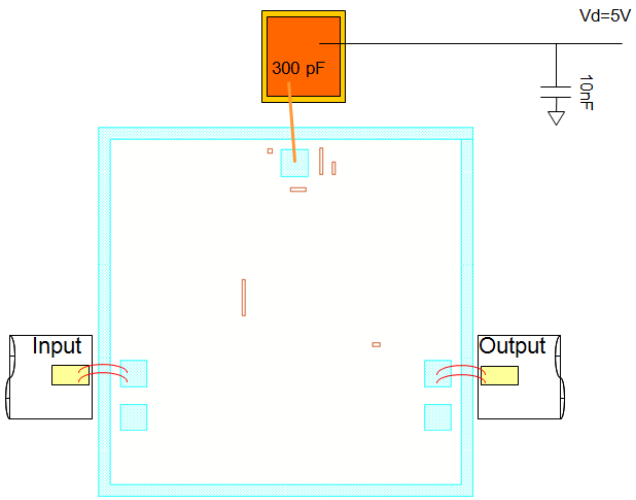




Die Outline
(all dimensions in mm)



Assembly Diagram



Components List

Reference Des.	Value	Part Number	Manuf.	Size
C1	300pF	CHIP CAPACITOR	RADVISTA	—
C2	10nF	GRM155R71H103KA88D	MURATA	0402

Attention:

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