

Features

- Frequency: 0.2GHz~0.6GHz
- Gain: 38dB
- Noise Figure: 0.8dB
- Supply Voltage: +5V@75mA
- Die Size: 1.3mm×1.25mm×0.1mm

Typical Applications

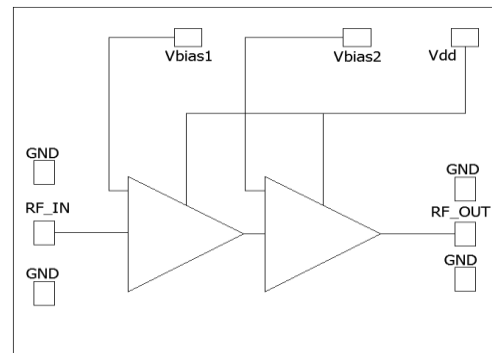
- Radar and ECM
- RF/ Microwave radio
- Military and Space
- Test and Measurement
- Fiber Optics

General Description

XT3003 is a GaAs MMIC Low Noise Amplifier die which operates between 0.2GHz~0.6GHz. The amplifier can provide 38dB gain, 17dBm Output P_{1dB} , 0.8dB noise figure from a 75mA 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



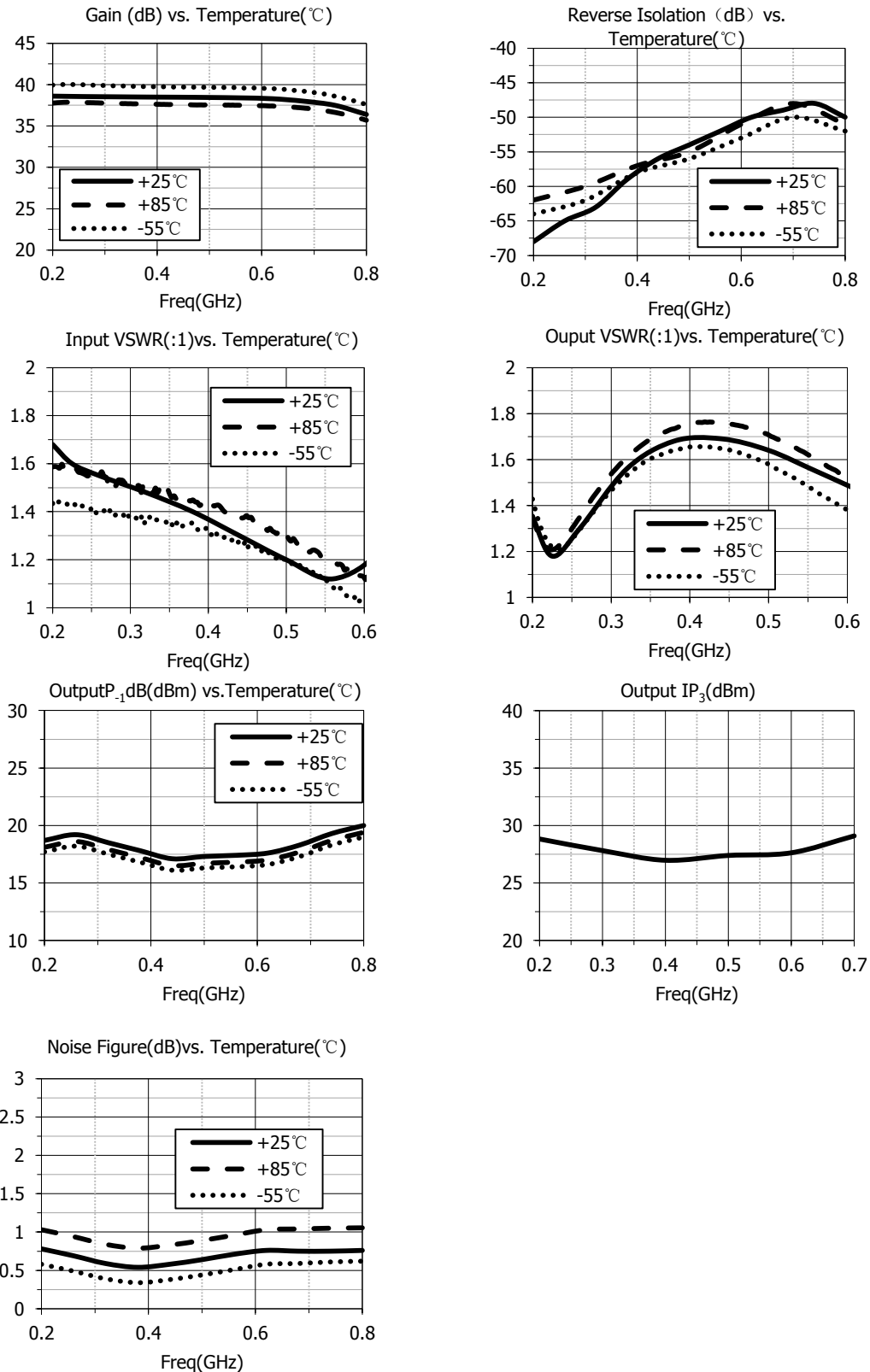
Electrical Performance ($T_A=25^{\circ}\text{C}$, $V_D=+5\text{V}$, $I_D=75\text{mA}$, $Z_0=50\Omega$)

Parameter	Min.	Typ.	Max.	Units
Frequency Range	0.2~0.6			GHz
Gain	—	38	—	dB
Gain Flatness	—	0.3	—	dB
Reverse Isolation	—	-55	—	dB
Input/Output VSWR	—	1.6	—	:1
Noise Figure	—	0.8	—	dB
Output Power for 1 dB Compression (OP_{1dB})	—	17	—	dBm
Output Third Order Intercept (OIP_3)	—	28	—	dBm
Supply Current(I_D)	—	75	—	mA

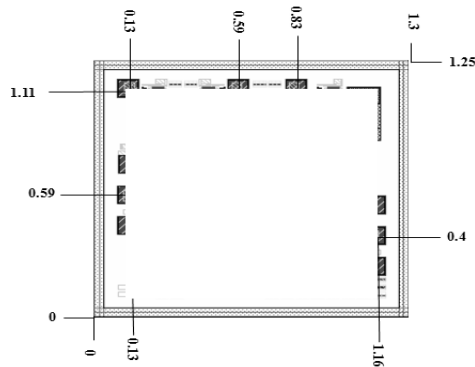
Absolute Maximum Ratings

Maximum Input Power	+18dBm	Operating Temperature	-55°C~+85°C
Channel Temperature	+150°C	Storage Temperature	-65°C~+150°C

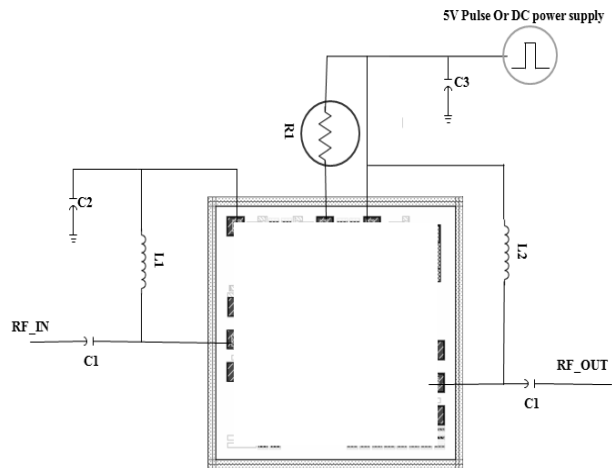
Typical Performance Curve



Die Outline (all dimensions in mm)



Assembly Diagram



Components List

Reference Des.	Value	Part Number	Manuf.	Size
C1	51pF	GRM1555C1H510JZ01D	MURATA	0402
C2	300pF	GRM1555C1H301JA01D	MURATA	0402
C3	10nF	GRM155R71H103KA88D	MURATA	0402
C4	15pF	GRM1555C1H150JZ01D	MURATA	0402
L1	68nH	0402CS-68NXGE	COILCRAFT	0402
L2	68nH	0402CS-68NXGE	COILCRAFT	0402
R1	0Ω	—	—	0402

Attention:

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