

### Features

- Frequency : 7GHz~13GHz
- Gain: 20dB
- Noise Figure: 1.35dB
- Output P<sub>1dB</sub>: 14dBm
- Die Size: 1.56mm×1.26mm×0.1mm

### Typical Applications

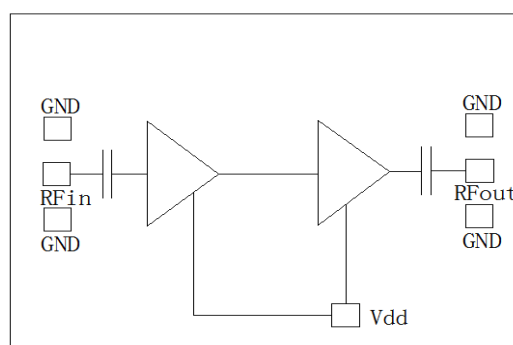
- Radar and ECM
- RF/ Microwave radio
- Military and Space
- Test and Measurement
- Fiber Optics

### General Description

The XT3039 is a GaAs MMIC Low Noise Amplifier die which operates between 7GHz~13GHz. The amplifier can provide 20dB gain, 14dBm Output P<sub>1dB</sub>, with 1.35dB noise figure from a 35mA 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



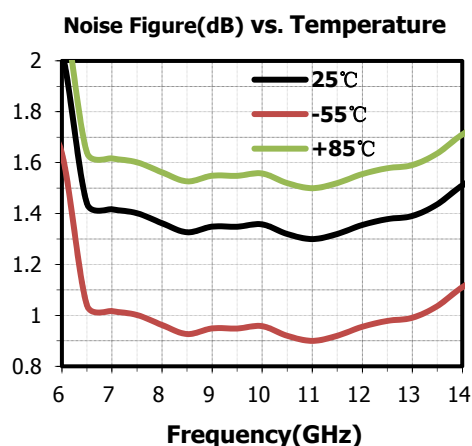
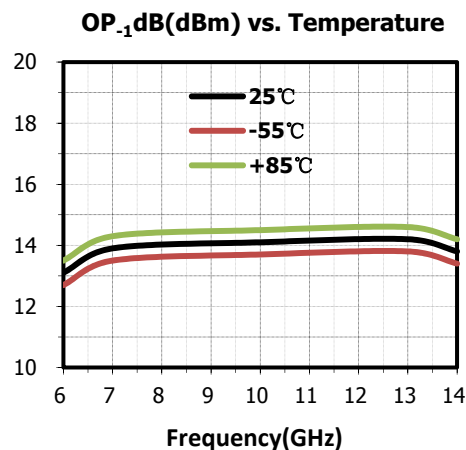
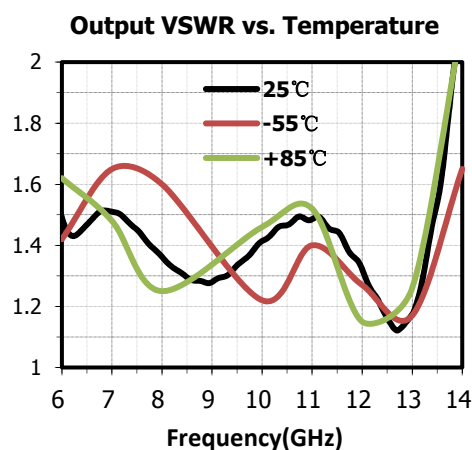
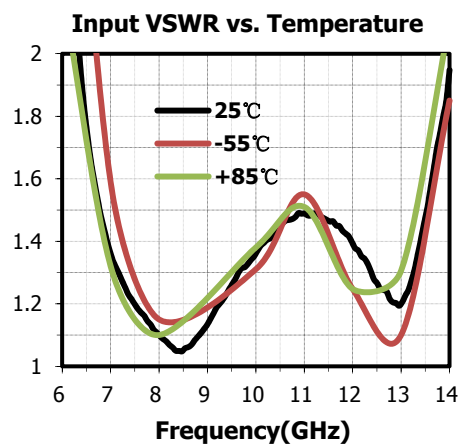
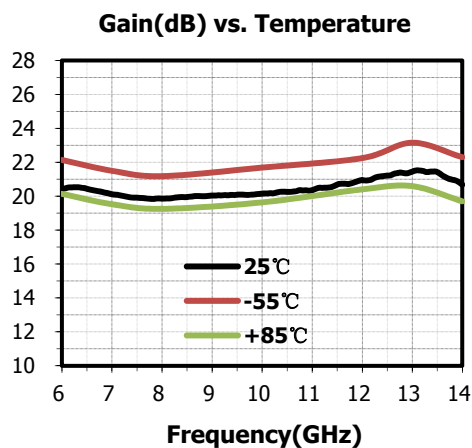
### Electrical Performance ( T<sub>A</sub>=25°C, V<sub>D</sub>= +5V, I<sub>D</sub>=35mA, Z<sub>0</sub>=50Ω )

| Parameter                       | Min. | Typ. | Max. | Units |
|---------------------------------|------|------|------|-------|
| Small signal gain               | —    | 20   | —    | dB    |
| Gain Flatness                   | —    | 1.6  | —    | dB    |
| Input VSWR                      | —    | 1.4  | —    | :1    |
| Output VSWR                     | —    | 1.4  | —    | :1    |
| Noise Figure                    | —    | 1.35 | —    | dB    |
| Output P <sub>1dB</sub>         | —    | 14   | —    | dBm   |
| Supply Current(I <sub>D</sub> ) | —    | 35   | —    | mA    |

### Absolute Maximum Ratings

|                     |        |                       |              |
|---------------------|--------|-----------------------|--------------|
| Maximum Input Power | +10dBm | Operating Temperature | -55°C~+85°C  |
| Channel Temperature | +150°C | Storage Temperature   | -65°C~+150°C |
| Supply Voltage      | 5.5V   | Supply Current        | 100mA        |

### Typical Performance Curve



# XT3039

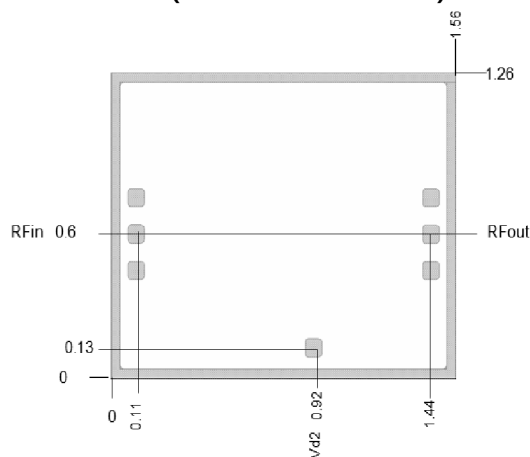


## GaAs MMIC Low Noise Amplifier

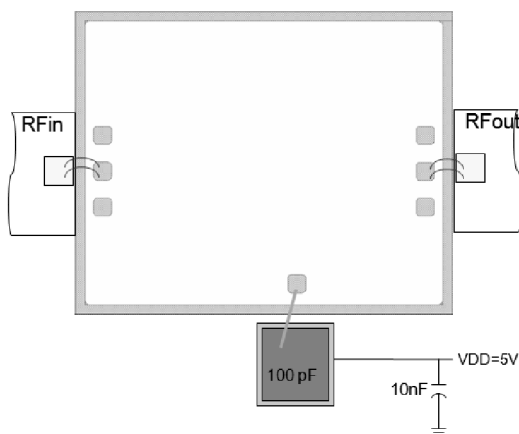
7GHz~13GHz

Rev 1.0

**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.



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