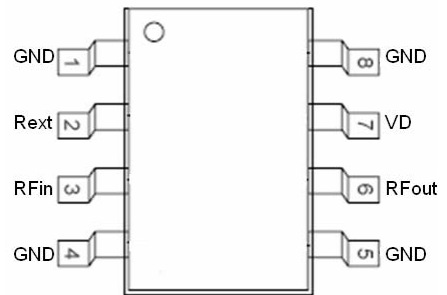


Product Features

- Operation from Single Supply (+5V~8V)
- 1.2dB Noise Figure
- +15.5dBm P1dB@ 60mA
- OIP3=30dBm
- Lead Free, RoHS Compliant
- SOIC-8 Plastic Package



Product Description

F101 is a GaAs low noise amplifier that has high dynamic scope 800 - 1000MHz . The products' low noise characteristic and stability are improved by matching the input resistance at outer circuit. Only a single 5V positive supply voltage, a bias resistor are required for operation. For the specification of low noise,high gain,high dynamic scope and low power consumption, it can be used in wireless base station.

Typical Electrical Characteristics at 25°C

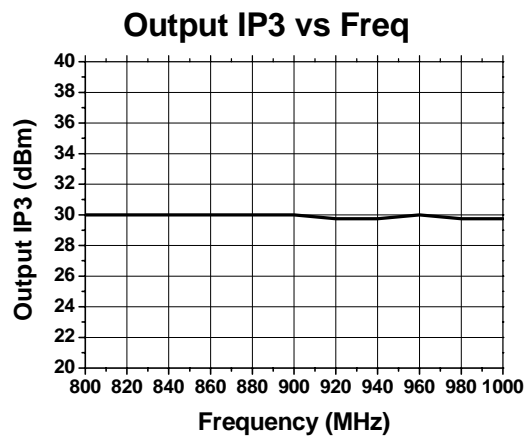
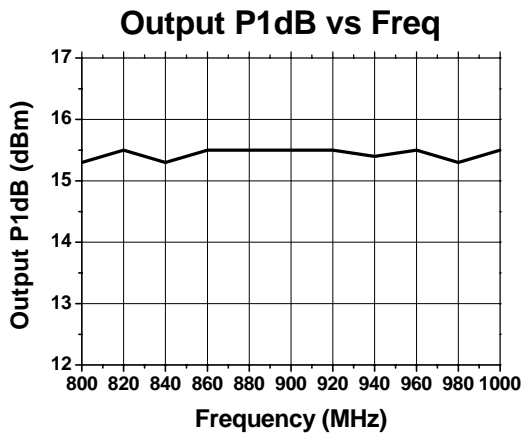
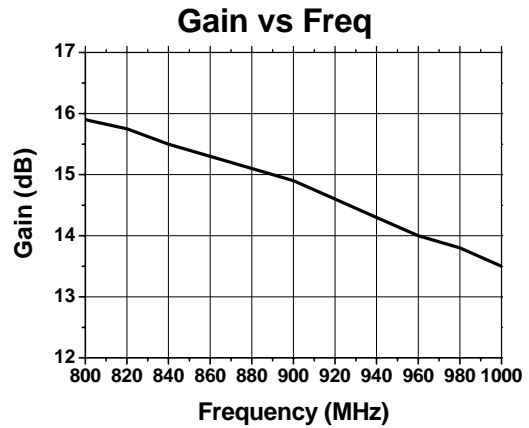
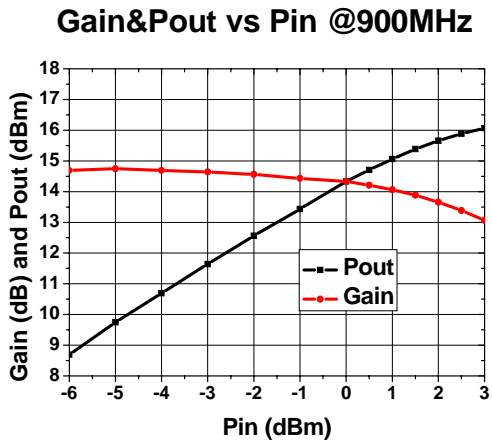
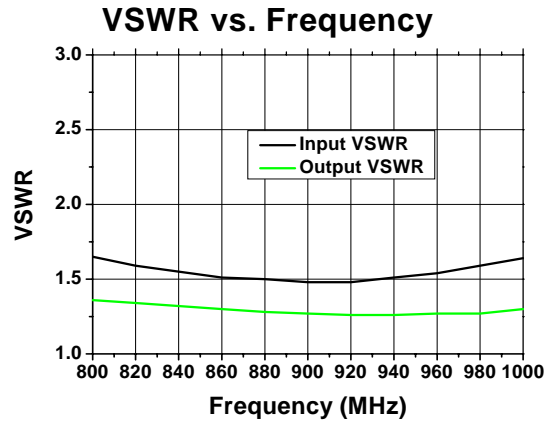
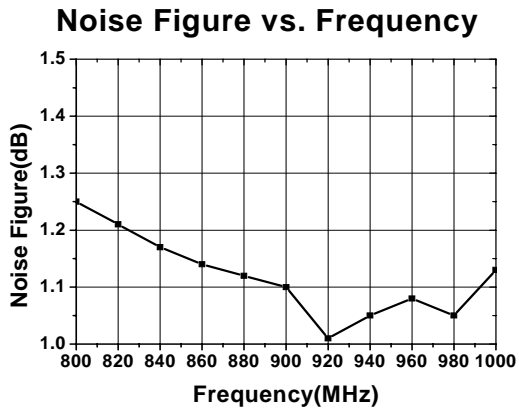
Symbol	Unit	Min.	Typ.	Max.
Gain	dB	13	14.8	
Output P _{1dB}	dBm	14	15.5	
Output IP ₃	dBm	25	30	
Input VSWR	Ratio		1.5	
Output VSWR	Ratio		1.5	
NF	dB		1.20	1.50
S12	dB		-33	

Test Condition : V_D = +5V I_D = 60mA Typ F=900MHz , P_{in}=-30dBm OIP₃ Tone Spacing=1MHz, Pout per ton=0 dBm R_{BIAS}=15 Ohms T_L=25°C Z_S=Z_L=50 Ohms

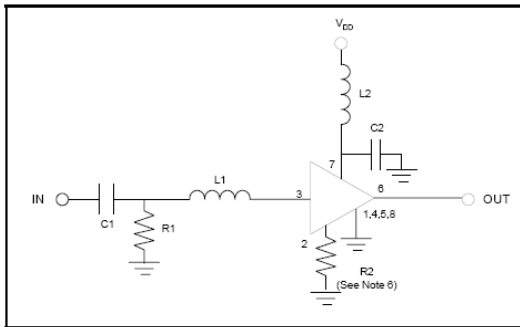
1.All tests are finished under 50Ωsystems unless special explanation.

Typical Electrical Characteristics

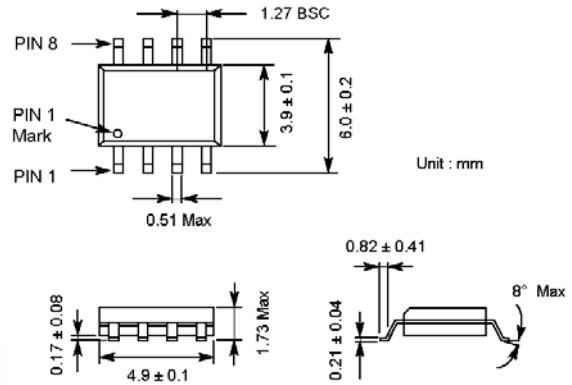
Test condition: $V_D=5V$, $R_{\text{bias}}=15\ \Omega$, $I_d=60mA$, $Temp=+25^\circ C$



Test Circuit Diagram



SOIC – 8 Package Outline



Part	Value	Case Size	Manufacturer	Purpose
C1	47 pF	0603	Murata	DC Block
C2	470 pF	0603	Murata	By-Pass
L1	12 nH	0603	Coilcraft	Tuning
L2	12 nH	0603	Coilcraft	RF Choke
R1	5.1K Ohms	0603	Panasonic	DC Return
R2	See Note	0603	Panasonic	Optional current control

1. Inductance L1 will make a great effect to noise figure. It needs to choose high Q value apparatus.
2. Measurement for this data sheet is made on 0.5 mm thick PCB board with 3.5 dielectric constant. At 900MHz, it has about 0.1dB during input and output.
3. The noise figure will be improved by cancel R. The circuit working condition almost keeps the same.
4. R2 decides operation current. Recommended R2=15 Ohm, operation current=60mA.

Absolute Maximum Ratings

Parameters	Absolute Limit
Max. Device Current (I_D)	150 mA
Max. Device Voltage (V_D)	10V
Max. RF Input Power	+17 dBm
Operating Temp. range (T_L)	-30°C ~ +100°C
Max. Storage Temp.	-65°C ~ +120°C