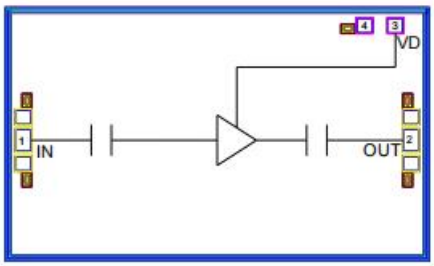
★1.Product Features

- Frequency range: 2 ~ 20 GHz
- Noise figure: 3.0 dB
- Gain: 20 dB
- Output 1 dB compression point: 15 dBm
- Input return loss: -15 dB
- Output return loss: -15 dB
- Chip size: 2.7 mm × 1.6 mm × 0.1 mm

Functional Block Diagram



★2.Product Introduction

The TFLN1027-H is a low noise amplifier chip operating in the 2 ~ 20 GHz band with a single +5 V supply. At a current of 45 mA, it delivers 20 dB gain and 15 dBm output P-1dB, with a typical noise figure of 3.0 dB.

The chip backside is metallized and is suitable for conductive adhesive bonding or eutectic bonding. The chip uses an on-chip metallized via process to ensure good grounding, so it is simple to use and requires no additional grounding measures.

★3.Electrical Characteristics

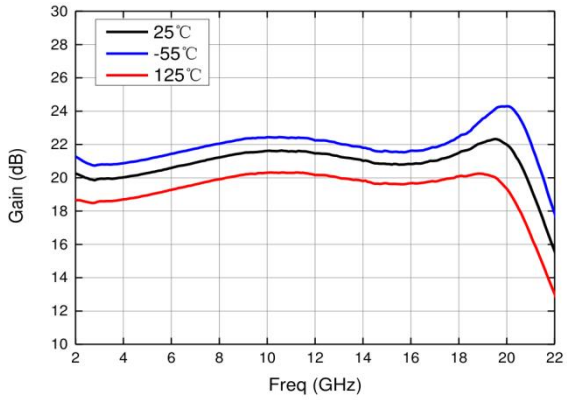
TA=+25℃, 50Ω system, VD=+5V, Idd=45mA

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	Freq	2	—	20	GHz
Gain	Gain	—	20	—	dB
Gain Flatness	δGain	—	±1.0	—	dB
Output P-1dB	OP1dB	—	15	—	dBm
Saturated Output Power	Psat	—	16	—	dBm
Input Return Loss	RL_in	—	-15	—	dB
Output Return Loss	RL_out	—	-15	—	dB
Noise Figure	NF	—	3.0	—	dB
Output IP3	OIP3	—	28	—	dBm
Quiescent Current	Idd	—	45	—	mA

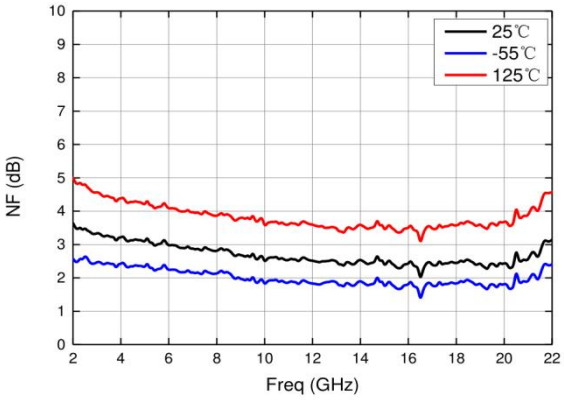
Email: ttf@ttfelectronic.com
Website:ttfelectronic.com
Address: Building 16, Area C, Entrepreneurship and R&D Park, Xi'an High-tech Industrial Development Zone, China

★4.Typical Test Curve

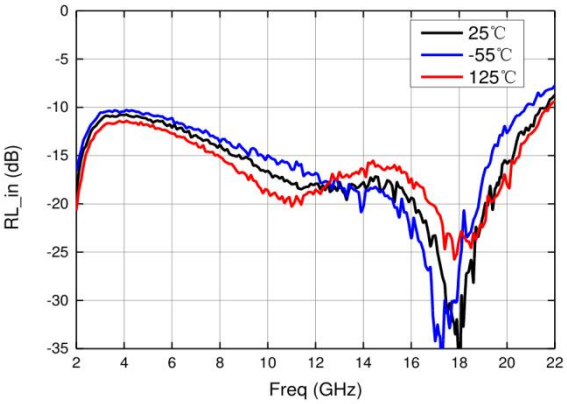
Gain vs. Frequency



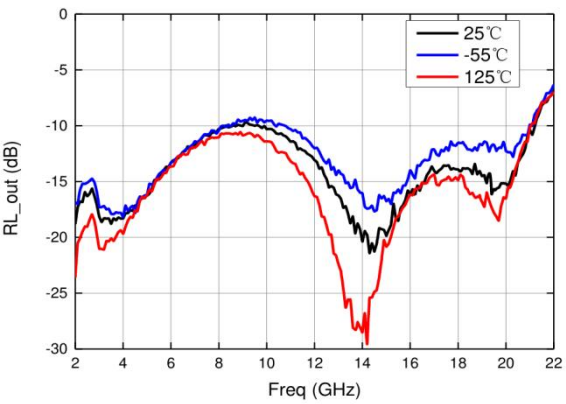
Noise Figure vs. Frequency



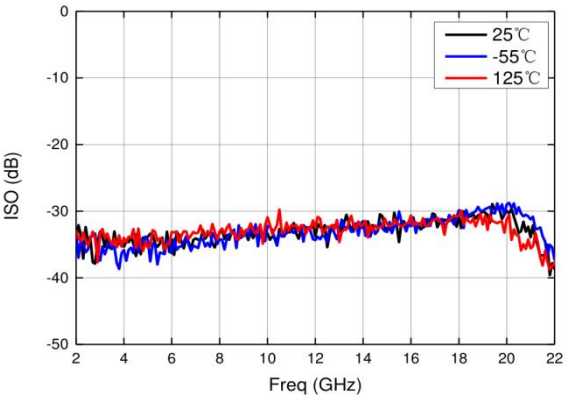
Input Return Loss vs. Frequency



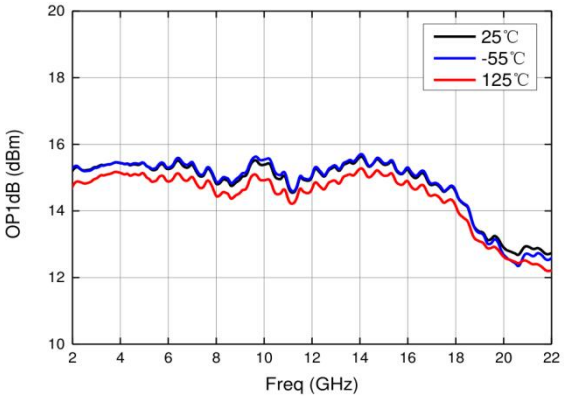
Output Return Loss vs. Frequency



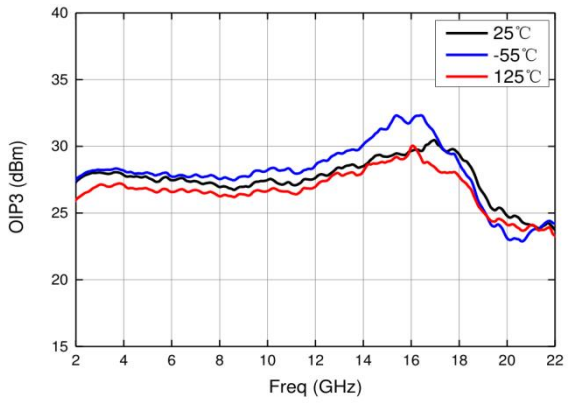
Reverse Isolation vs. Frequency



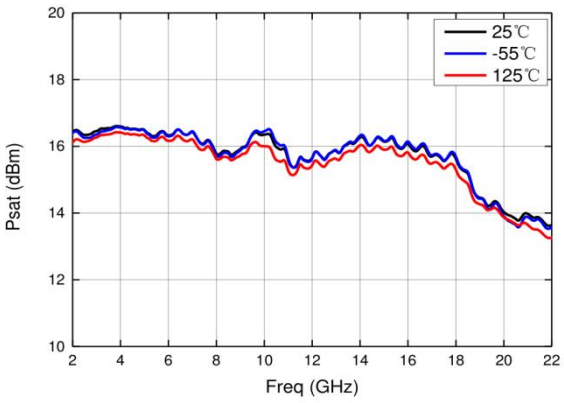
Output P-1dB vs. Frequency



Output IP3 vs. Frequency



Saturated Output Power vs. Frequency



★5.Outline Dimensions

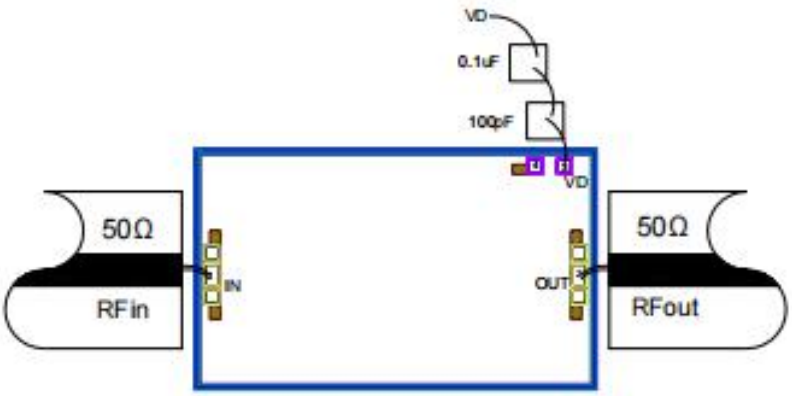


Notes:
1. Unit: μm
2. The chip backside is gold plated and grounded
3. I/O pad size: 150 μm × 100 μm
4. GND pad size: 100 μm × 100 μm
5. Outline dimension tolerance: ±50 μm

★6.Bonding Pressure Point Definition

Pressure Point Number	Function Definition	Function Description
1	RFin	RF signal input port, connected to an external 50 Ω system, with internal DC_Block
2	RFout	RF signal output port, connected to an external 50 Ω system, with internal DC_Block
3	VD	DC supply port (+5 V)
Other	GND	Ground pad

★7.Suggested Assembly Drawing



★8.Precautions

Absolute Maximum Ratings	Numerical value
Input Power (Pin, 50 Ω)	+15 dBm
Drain Voltage	+6 V
Storage Temperature	-65 ℃ ~ +150 ℃
Operating Temperature	-55 ℃ ~ +125 ℃
Sintering Temperature (30 s, N_2 Protection)	300 ℃
Exceeding any of the above conditions may cause permanent damage to the chip	



This product is sensitive to static electricity.

Please take precautions against static electricity during use.