★1.Product Features

Frequency range: 7~14 GHz

Noise figure: 1.7 dB

Gain: 18 dB

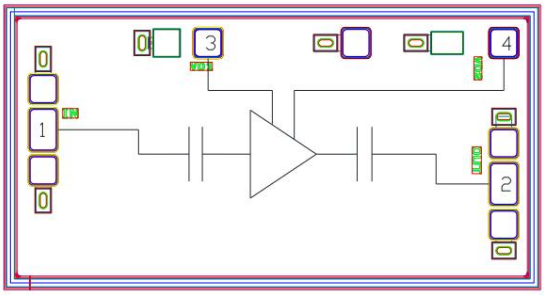
Output P-1dB: 13.5 dBm

Operating current: 65 mA @ +3 V

Chip size: 2.0 mm × 1.0 mm × 0.1 mm

Replacement for: HMC564

Functional Block Diagram



★2.Product Introduction

The TFLN1015-H is a low noise amplifier chip operating in the 7~14 GHz frequency range with a +3 V supply. At 65 mA, it provides a gain of 18 dB and an output P-1dB of 13.5 dBm, with a typical noise figure of 1.7 dB. It is available as a replacement for the foreign model HMC564.

The chip backside is metallized and is suitable for conductive adhesive die attachment or eutectic bonding. The chip adopts an on-chip metallized via-hole process to ensure good grounding, which makes it easy to use without additional grounding measures. The chip is fabricated using a domestic GaAs process, meeting domestic substitution requirements.

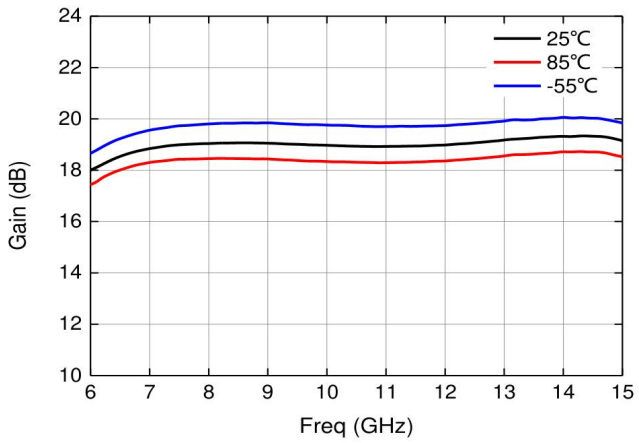
★3.Electrical Characteristics (TA=+25℃, 50Ω System, VD=+3V)

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	Freq	7	—	14	GHz
Gain	Gain	—	19	—	dB
Output P-1dB	OP1dB	—	13.5	—	dBm
Saturated Output Power	Psat	—	15	—	dBm
Input Return Loss	RL_in	—	-15	—	dB
Output Return Loss	RL_out	—	-15	—	dB
Noise Figure	NF	—	1.7	—	dB
Output Third-Order Intercept	OIP3	—	28	—	dBm
Quiescent Current	Idd	—	65	—	mA

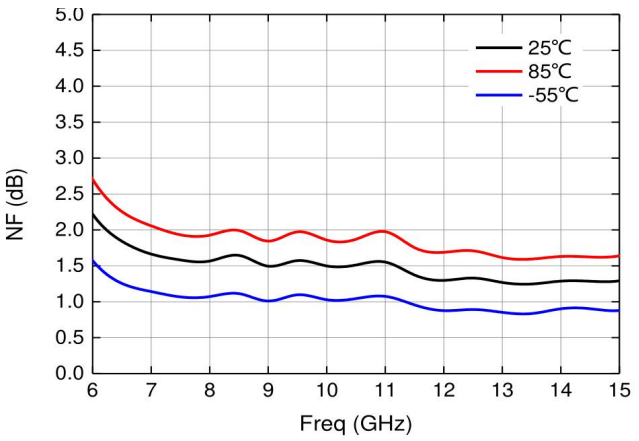
Email: ttf@ttfelectronic.com
Website:ttfelectronic.com
Address: Building 16, Area C, Entrepreneurship and R&D Park, Xi'an High-tech Industrial Development Zone, China

★4.Typical Test Curve

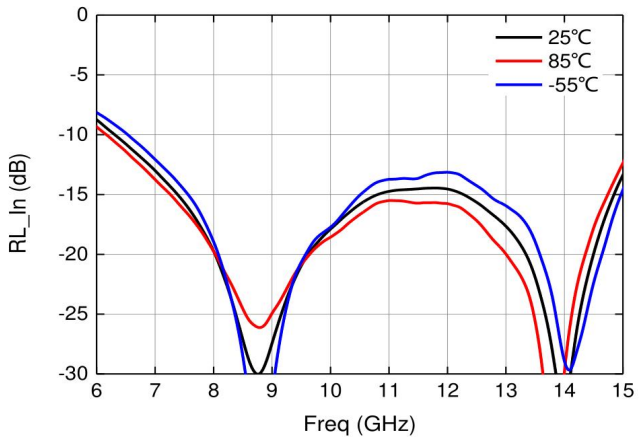
Gain vs. Frequency



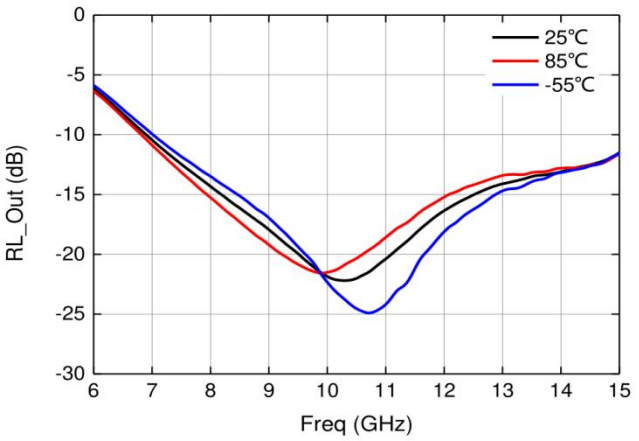
Noise Figure vs. Frequency



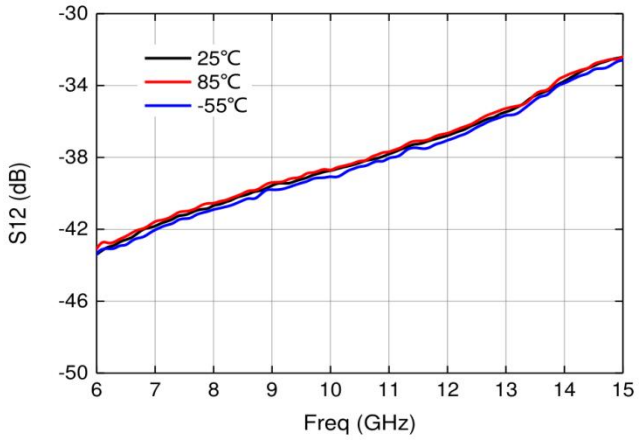
Input Return Loss vs. Frequency



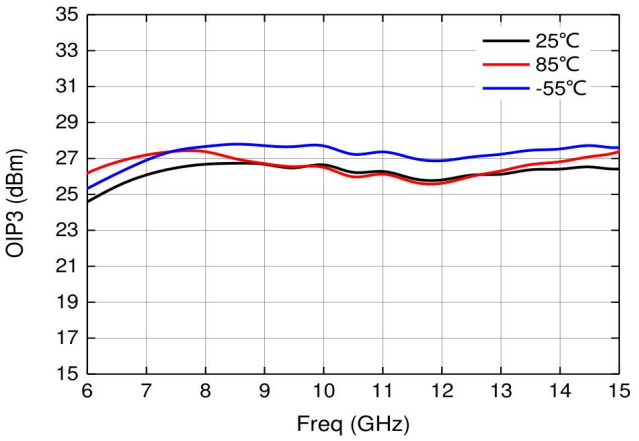
Output Return Loss vs. Frequency



Reverse Isolation vs. Frequency

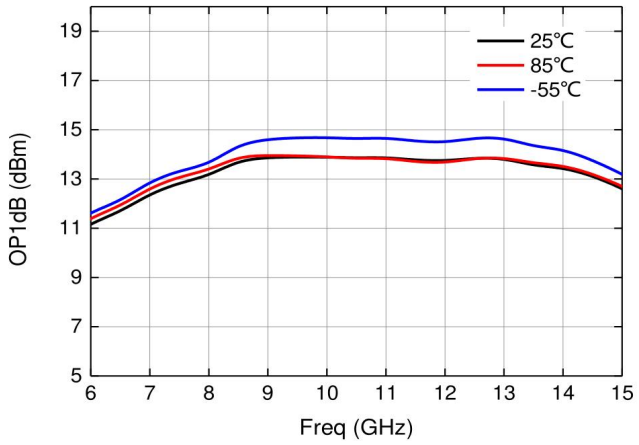


Output Third-Order Intercept vs. Frequency

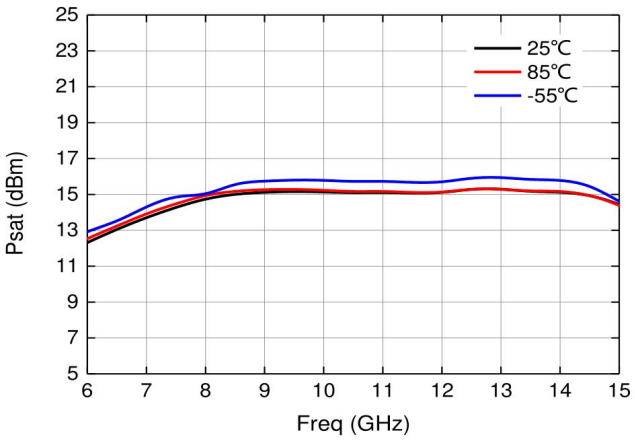


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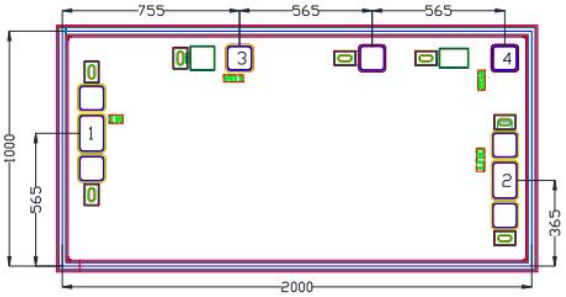
Output P-1dB vs. Frequency



Saturated Output Power vs. Frequency



★5.Outline Dimensions



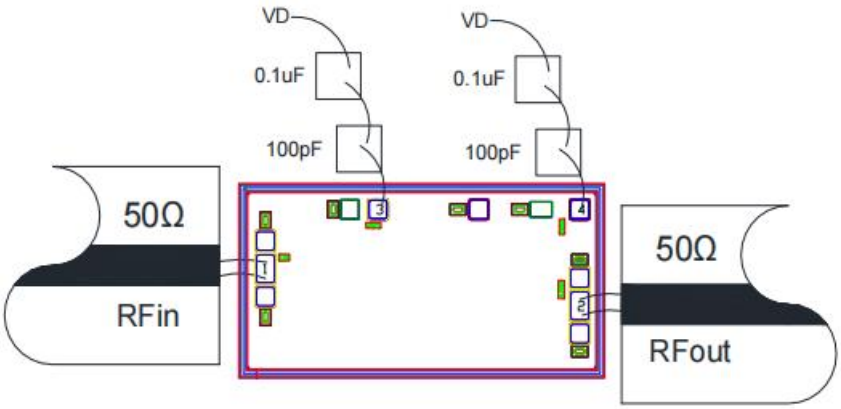
Notes:

1. Unit: μm
2. Chip backside is gold-plated for grounding.
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. DC blocking is integrated inside the chip.
2	RFout	RF signal output port, connected to an external 50 Ω system. DC blocking is integrated inside the chip.
3/4	VD	+3 V DC power supply port.
Other	GND	Ground pad.

★7.Suggested Assembly Drawing



★8.Precautions

Parameter	Limit Value
Input Power (Pin, 50Ω)	+10 dBm
Drain Voltage	+5 V
Storage Temperature	-65℃~+150℃
Operating Temperature	-55℃~+125℃
Sintering Temperature (30s, N_2 Protection)	300℃
Exceeding any of the above maximum limits may cause permanent damage.	



This product is sensitive to static electricity.

Please take precautions against static electricity during use.