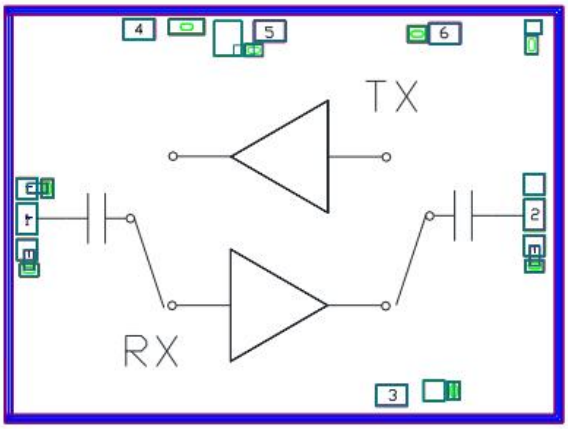
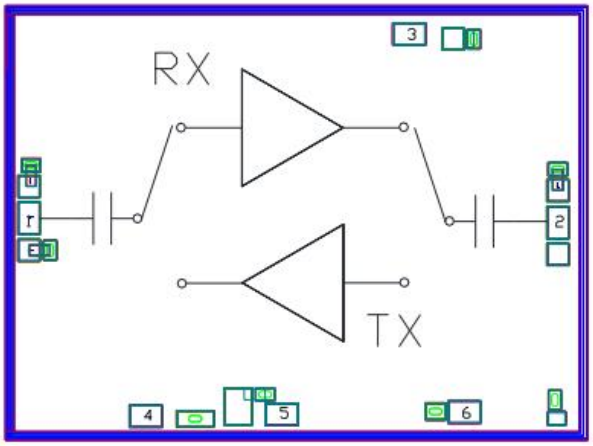
★1.Product Features

- Frequency Range: 14~17 GHz
- Receive Noise Figure: 2.7 dB
- Receive Gain: 25 dB
- Receive Output P1dB Power: 5 dBm
- Transmit Gain: 25 dB
- Transmit Output P1dB Power: 27 dBm
- Transmit Saturated Output Power: 27 dBm
- Receive DC Bias: 15 mA @+5V
- Transmit DC Bias: 240 mA @+5V
- Chip Size: 2.7×2×0.1mm³

Functional Block Diagram





★2.Product Introduction

TFBA017A-H and TFBA017B-H are two Ku-band bidirectional amplifier chips that are mirror images of each other and are suitable for satellite communication. The chips operate over 14~17GHz and integrate a switch, a low noise amplifier and a power amplifier. The receive channel provides 25dB gain and 5dBm P1dB output power, with a typical noise figure of 2.7dB; the transmit channel provides 25dB gain and 27dBm P1dB output power, with typical saturated output power of 27dBm and typical saturated power added efficiency of 26%.

The chip backside is metallized and is suitable for conductive adhesive bonding or eutectic bonding. The chip adopts on-chip metallized via-hole technology to ensure good grounding, which is simple and convenient to use without additional grounding measures.

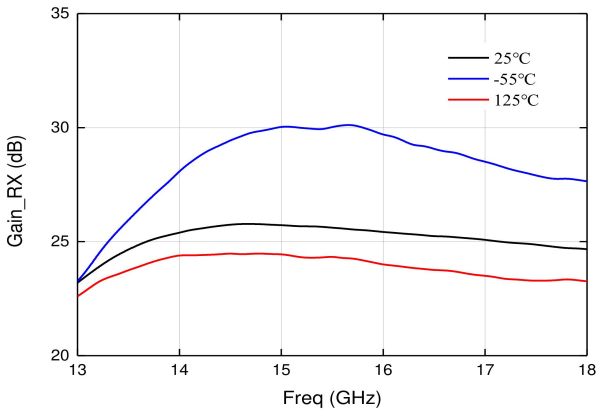
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Website:ttfelectronic.com
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★3.Electrical Performance (TA=+25℃, 50Ω system, on-wafer test)

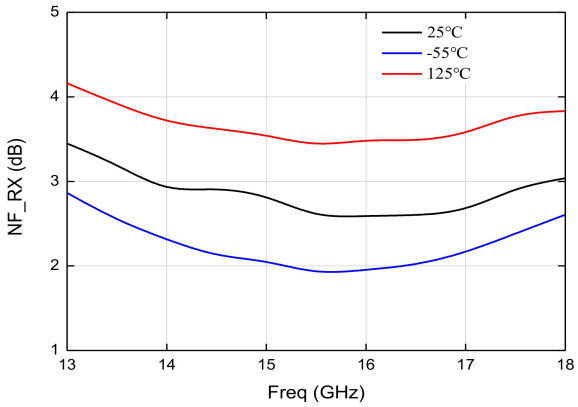
Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	Freq	14	-	17	GHz
Receive Gain	Gain_RX	-	25	-	dB
Receive Output P1dB	OP1dB_RX	-	5	-	dBm
Receive Input Return Loss	RLin_RX	-	-18	-	dB
Receive Output Return Loss	RLout_RX	-	-18	-	dB
Receive Noise Figure	NF_RX	-	2.7	-	dB
Receive Quiescent Current	IDQ_RX	-	15	-	mA
Transmit Gain	Gain_TX	-	25	-	dB
Transmit Output P1dB	OP1dB_TX	-	27	-	dBm
Transmit Saturated Output Power	Psat_TX	-	27	-	dBm
Transmit Input Return Loss	RLin_TX	-	-12	-	dB
Transmit Output Return Loss	RLout_TX	-	-15	-	dB
Transmit Saturated PAE	PAE_TX	-	26%	-	-
Transmit Quiescent Current	IDQ_TX	-	240	-	mA

★4.Typical Test Curve

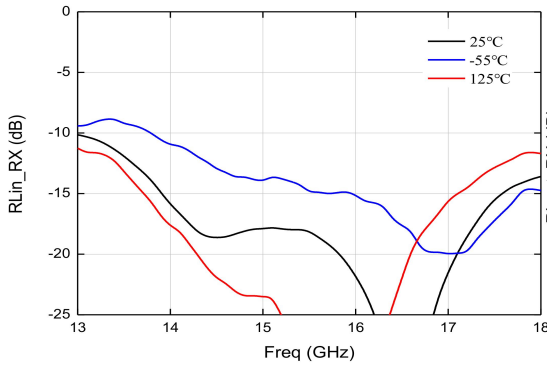
Receive Gain vs Frequency



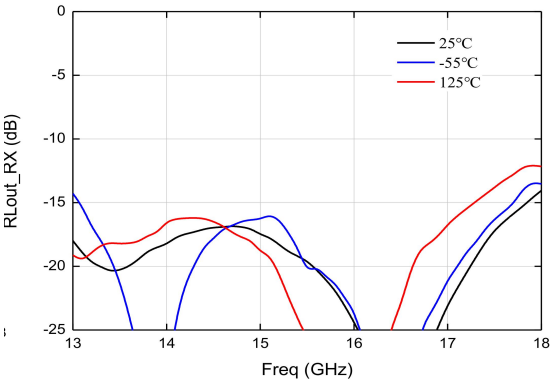
Noise Figure vs Frequency



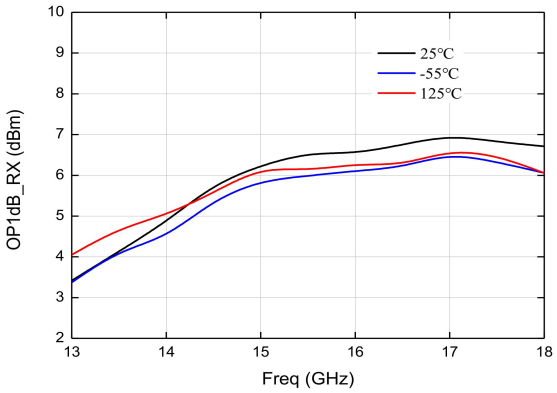
Receive Input Return Loss vs Frequency



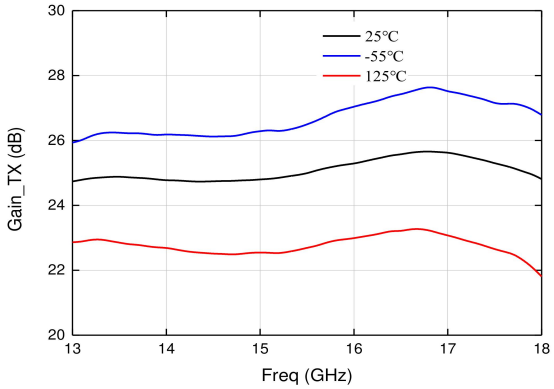
Receive Output Return Loss vs Frequency



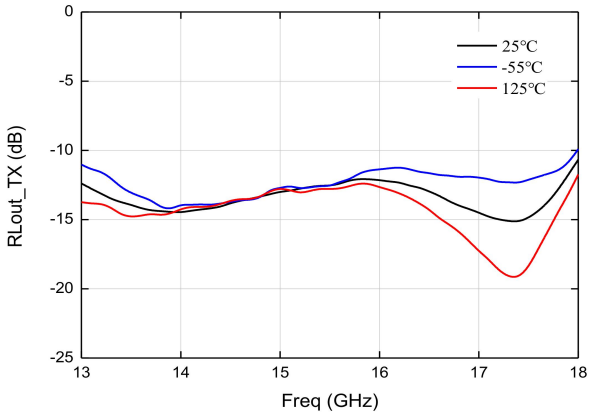
Receive Output P1dB vs Frequency



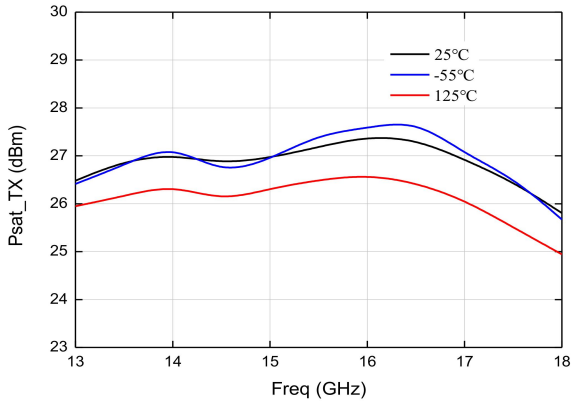
Transmit Gain vs Frequency



Transmit Input Return Loss vs Frequency

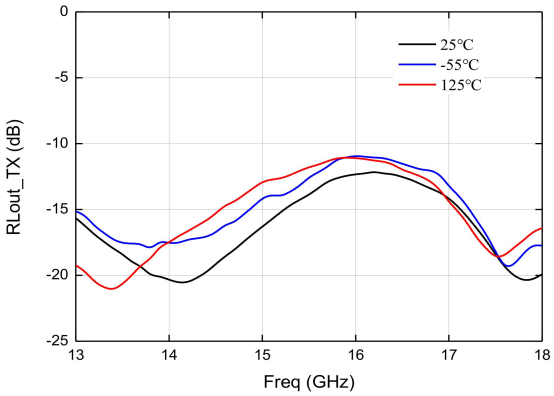


Transmit Output Psat vs Frequency

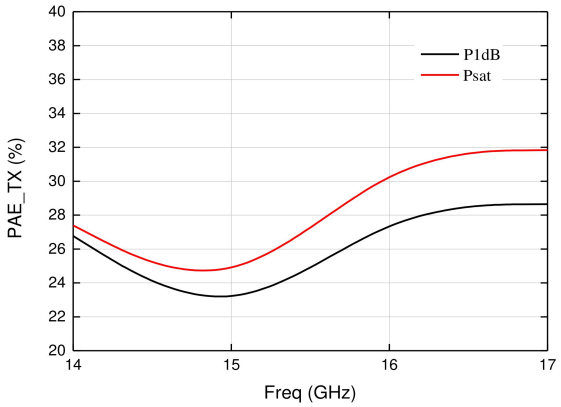


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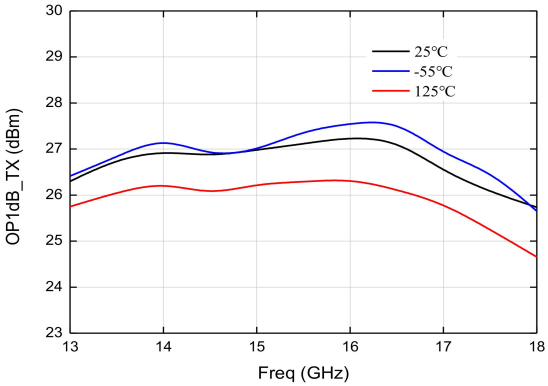
Transmit Output Return Loss vs Frequency



Transmit Power Added Efficiency vs Frequency



Transmit Output P1dB vs Frequency

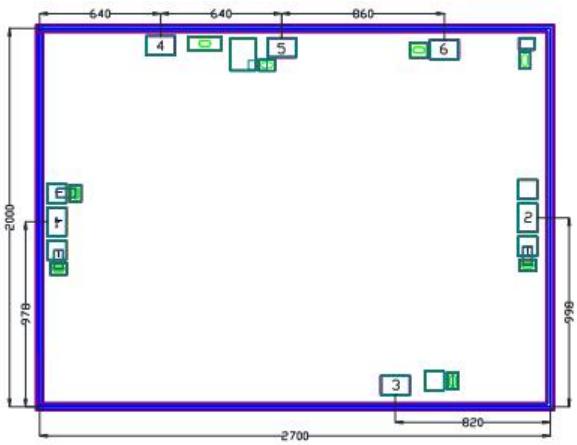


★5.Truth Table

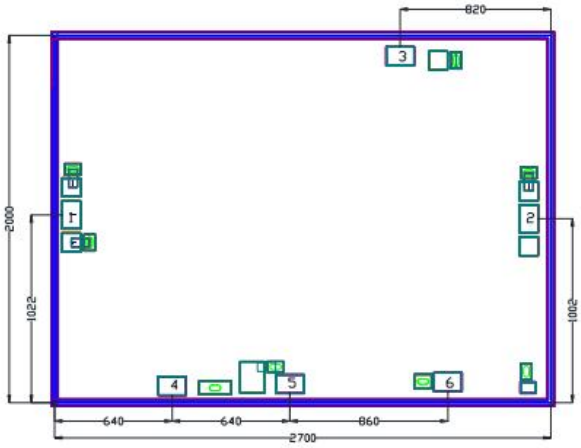
Operating State	Receive	Transmit
Voltage Bias	VDR=+5V VDT=0V VGT=-5V	VDR=0V VDT=+5V VGT=-5V

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★6.Outline Dimensions



TFBA017A-H

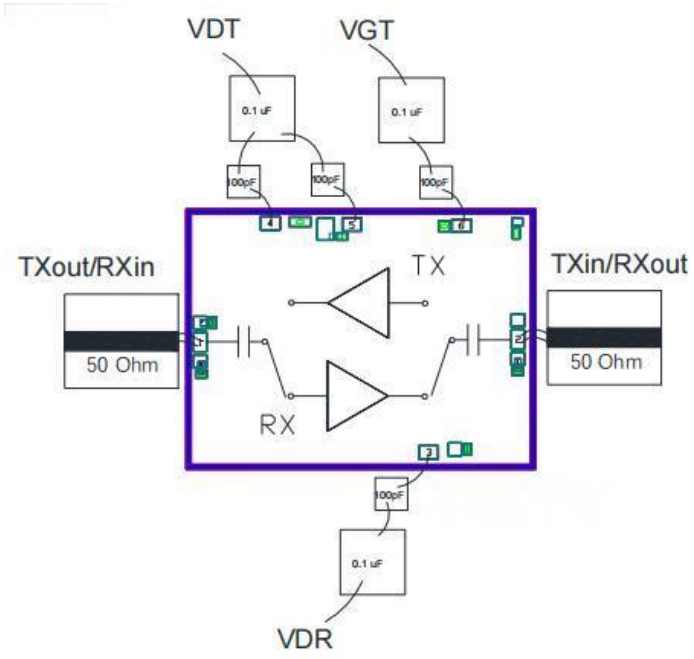


TFBA017B-H

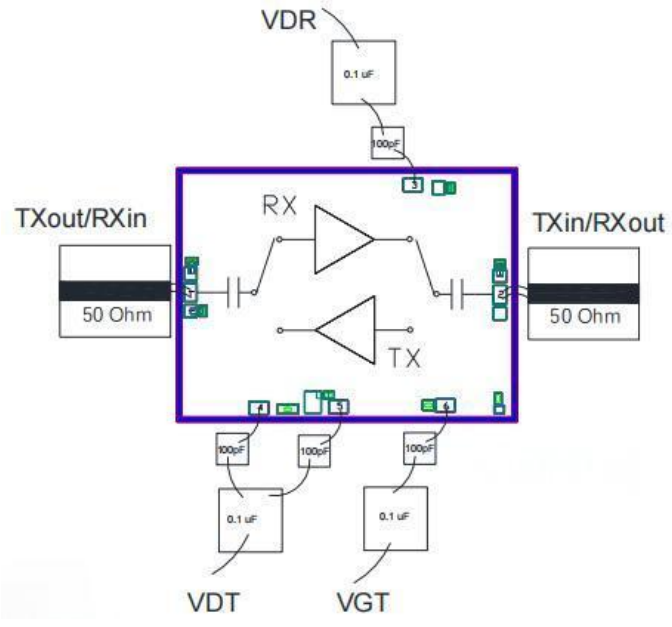
Notes:

1. Unit: μm
2. Chip backside is gold-plated for grounding
3. I/O pad size: 150μm×100μm
4. GND pad size: 100μm×100μm
5. Outline dimension tolerance: ±50μm

★7.Assembly Schematic



TFBA017A-H



TFBA017B-H

★8.Bonding Pad Definition

Pressure Point Number	Function Definition	Function Description
1	TXout/RXin	Transmit signal output / receive signal input port, connected to an external 50Ω system, with a DC blocking capacitor inside the chip
2	TXin/RXout	Transmit signal input / receive signal output port, connected to an external 50Ω system, with a DC blocking capacitor inside the chip
3	VDR	Receive channel drain voltage +5V supply
4,5	VDT	Transmit channel drain voltage +5V supply
6	VGT	Transmit channel gate voltage -5V supply

★9.Precautions

Absolute Maximum Ratings	Numerical value
Input Power (Pin, 50Ω)	+10dBm
Drain Voltage	+6V
Storage Temperature	-65℃~+150℃
Operating Temperature	-55~+125℃
Sintering Temperature (30s, N_2 Protection)	300℃
Exceeding 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.

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