BSTLN116-0618C

6-18GHz Low-Noise Amplifier Chip

Data Sheet

I. Product Introduction

BSTLN116-0618C is a low-power, low-noise amplifier chip with a frequency range of 6 to 18 GHz, a small-signal gain of 21.5 dB, a noise figure of 1.5 dB, an output 1 dB compression power of 16.5 dBm, and an operating current of 76.8 mA.

The amplifier uses a 4×4mm surface mount leadless ceramic tube shell, and the pin pad surface is gold-plated, suitable for reflow soldering installation.

II. Key Technical Indicators

- Frequency range: 6-18GHz
- Small signal gain: 21.5dB
- Noise figure: 1.5dB
- Output 1dB compression power: 16.5dBm
- Input return loss: 10dB
- Output return loss: 12dB
- Power supply: +5V@76.8mA
- Chip size: 4.00mm × 4.00mm × 0.85mm

III. Functional Block Diagram

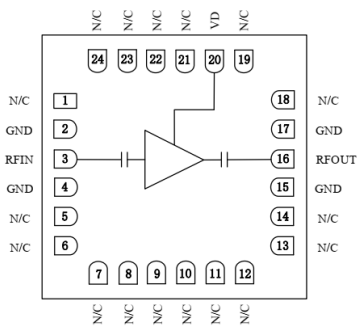


Figure 1.

IV. Electrical Performance Table (T_A = +25°C, V_D = +5V)

Table 1.

PARAMETER NAME	SYMBOL	MINIMUM	TYPICAL VALUES	MAXIMUM	UNIT
Frequency range	Freq	6	—	18	GHz
Small signal gain	Gain	20	21.5	22.5	dB
Noise Figure	NF	—	1.5	2	dB
Output 1dB compression power	OP1dB	15	16.5	—	dBm
Input return loss	RL_IN	3	10	—	dB
Output return loss	RL_OUT	10	12	—	dB
Quiescent operating current	IDQ	—	76.8	—	mA

V. Absolute Maximum Ratings

Table 2.

PARAMETER	LIMIT VALUE
Maximum operating voltage	+7V
Maximum input power	+20dBm
Storage temperature	-65℃ ~ +150℃
Operating temperature	-55℃ ~ +125℃

V. Test Curve (V_D=+5V)

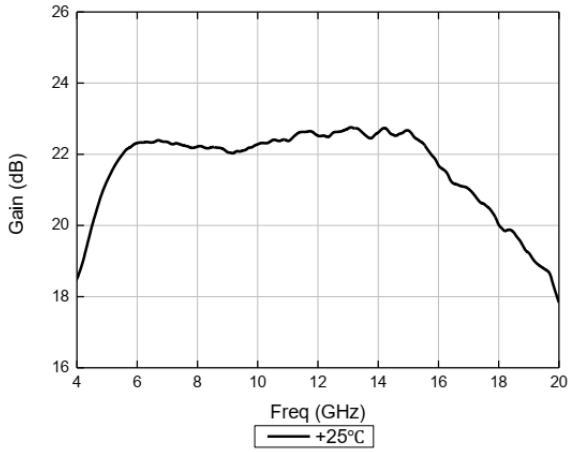


Figure 2. Small signal gain

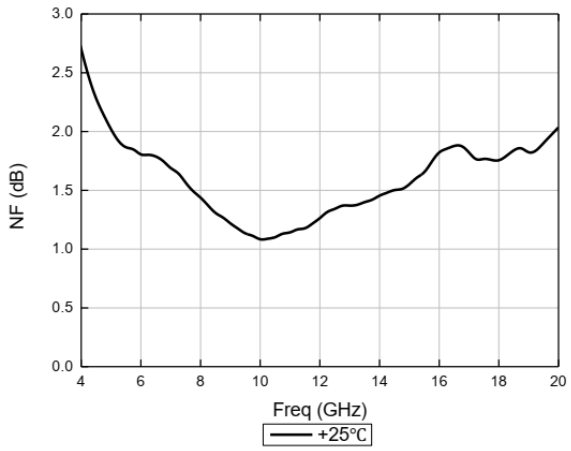


Figure 3. Noise Figure

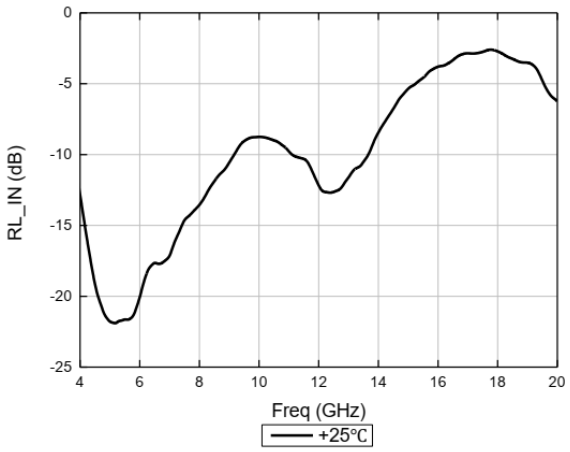


Figure 4. Input return loss

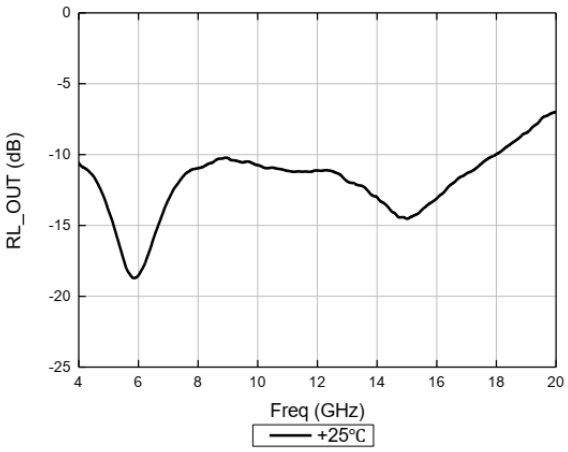


Figure 5. Output return loss

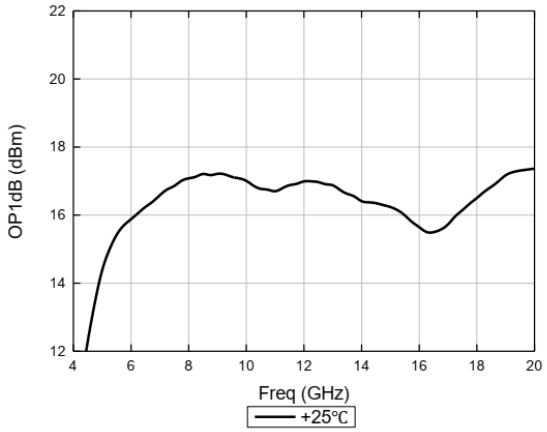
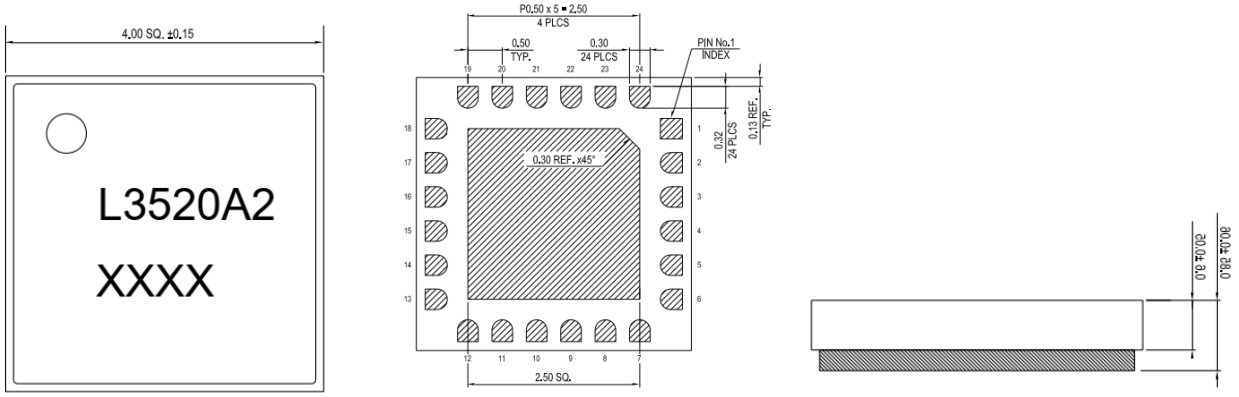


Figure 6. Output 1dB compression power

VI. Appearance Structure Diagram (unit: mm)



Top view Bottom view Side view

Figure 7.

VII. Port Definition

Table 3.

SERIAL NUMBER	PORT NAME	DEFINITION	SIGNAL OR VOLTAGE
3	RFIN	RF signal input, external 50 ohm system, internal DC isolation	RF
16	RFOUT	RF signal output, external 50 ohm system, internal DC isolation	RF
20	VD	Drain voltage feeder	+5V
2, 4, 15, 17, ePAD	GND	The bottom of the chip needs to be well grounded to RF and DC	/
1, 5-14, 18, 19, 21-24	N/C	No welding required	/

VIII. Application Solutions

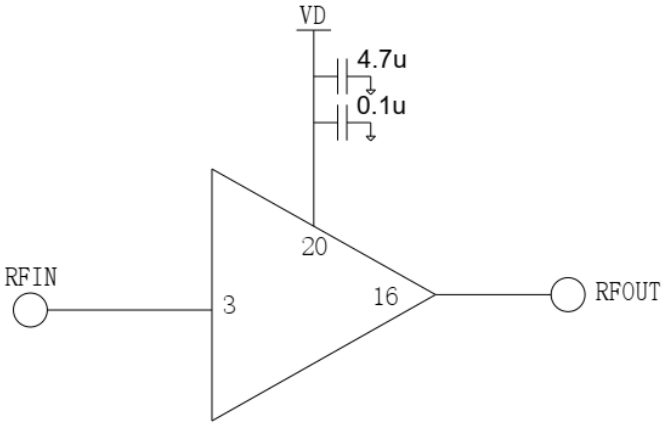


Figure 8.

IX. Precautions

- Assemble and use in a clean environment;
- Sealing material: ceramic material compliant with RoHS standards;
- Lead frame material: copper alloy;
- Lead surface plating: gold, the thickness of the gold layer is greater than 1.5μm;
- Maximum reflow peak temperature: 260°C;
- This product is an electrostatic sensitive device, please be careful to prevent static electricity during storage and use;
- Store in a dry, nitrogen environment;
- Do not attempt to clean the chip surface with dry or wet chemical methods.