

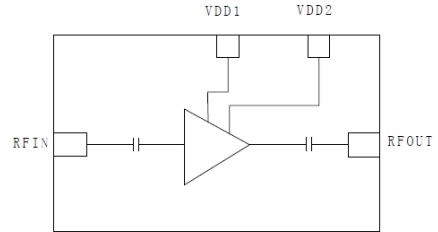
Performance Characteristics

- Wide bandwidth: 5~18GHz
- Gain: 19dB/typical
- Output P1dB: 20dBm/typical
- Output IP3: 30dBm/typical
- Saturation power: 21dBm/typical
- Chip size: 1.59mm*1.3mm

typical application

- microwave radio
- Instrumentation

functional block diagram



summarize

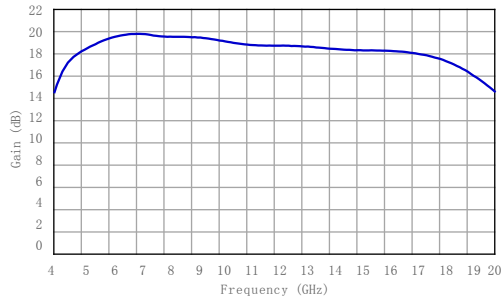
The CWA130 is a 5~18 GHz medium power amplifier manufactured on GaAs process. The amplifier operates from dual 5V supplies with 50Ω matched loads at the inputs and outputs. The CWA130 provides +19dB typical gain at 115mA operating current and 20dBm P1dB output power.

Electrical performance table ($t_A = +25^\circ\text{C}$ $V_{DD1} = V_{DD2} = 5\text{V}$)

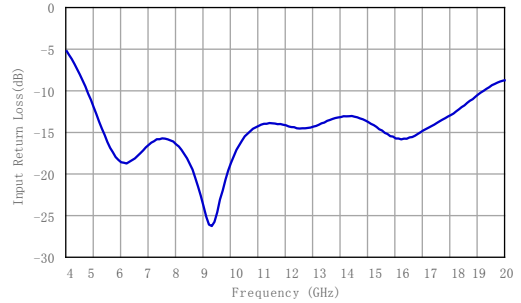
Parameter name	descriptive	minimum value	typical value	maximum values	minimum value	typical value	maximum values	unit (of measure)
operating frequency	Freq	5~16			16~18			GHz
gain (electronics)	S21		19			18		dB
Input Return Loss	S11		-15			-13		dB
Output Return Loss	S22		-16			-10		dB
inverse squareness	S12		-58			-55		dB
Output power 1dB compression point	P1dB		20			19		dBm
Output IP3	OIP3		30			27		dBm
saturation power	P3dB		21			20		dBm
coefficient of noise	NF		6.5			5.5		dB
quiescent current	IDD		115			115		mA

test curve

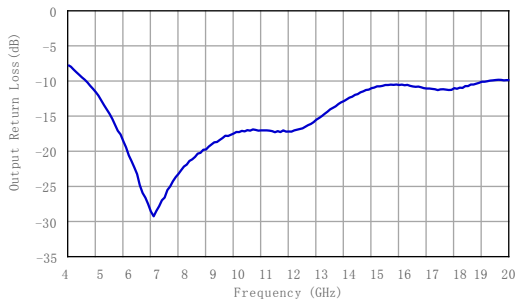
Gain vs Frequency



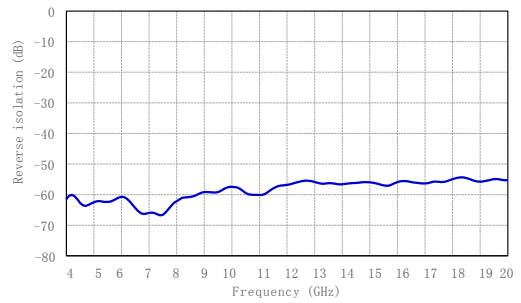
Input return loss vs. frequency



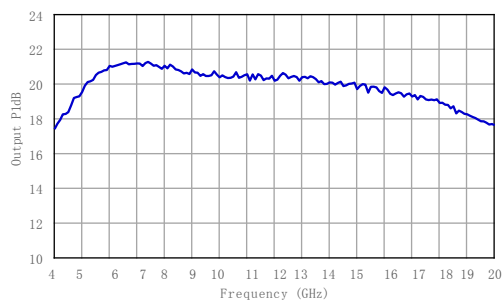
Output return loss vs. frequency



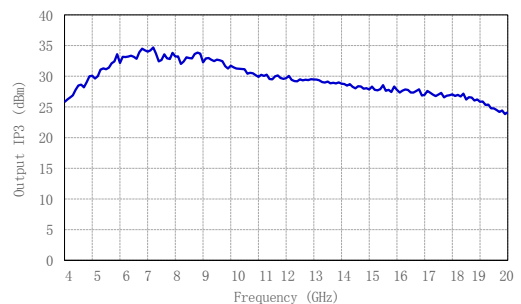
Reverse Isolation vs. Frequency



P1dB VS Frequency

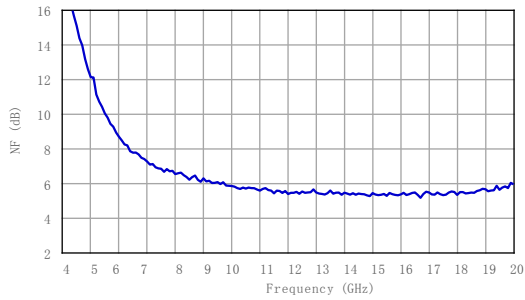


Output IP3 VS Frequency

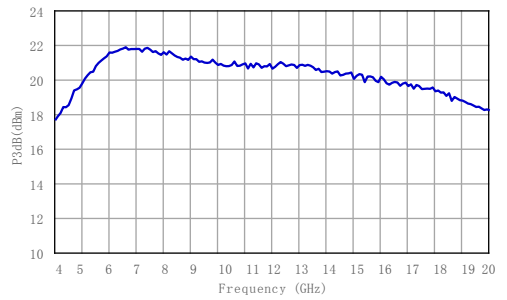


test curve

Noise figure vs. frequency



Saturated power vs. frequency



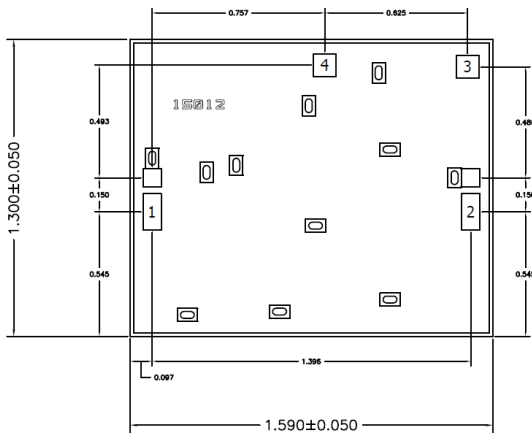
Absolute maximum rating

input power	+10dBm
operating temperature	-55°C~+85°C
Storage temperature	-65°C~+150°C
Operating voltage (VDD1=VDD2)	6V
ESD (HBM)	250V

Pin Definitions

Bonding point serial number	functional symbol	Functional Description
1	RFIN	RF Input Port with Isolation Capacitors
2	RFOUT	RF Output Port with Isolation Capacitor
3	VDD2	Power port 2, external 100pF & 0.01uF capacitors
4	VDD1	Power port 1, external 100pF & 0.01uF capacitors

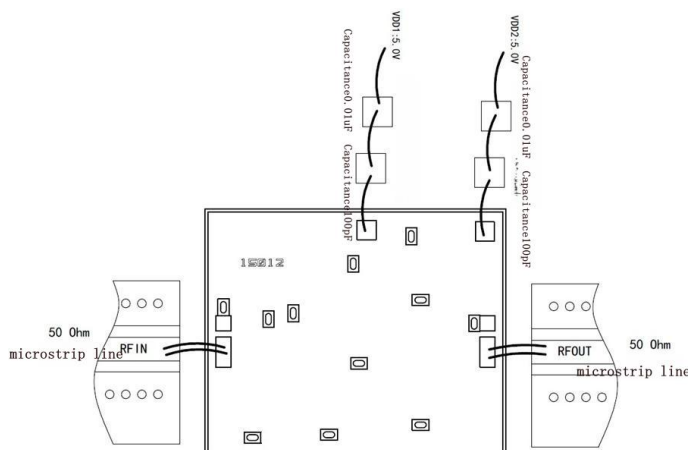
Chip External Dimensions



Description.

1. Unit: millimeters
2. Gold-plated bonding pressure point material
3. Chip thickness: 0.100 ± 0.015 (mm)
4. Cannot be bonded on through holes, and unnumbered bonding indentations do not need to be bonded
5. Chip backside metallization
6. Chip Back Ground

Chip Assembly Diagram



Description.

1. Chip back grounding, bonding material: conductive adhesive
2. Chip bonding wire material: 1 mil Au
3. Be careful to keep the wire length as short as possible when bonding