

GaAs MMIC Frequency Multiplier Chip, 8-22GHz

Performance characteristics

- Frequency range: 8 - 22 GHz
- Typical power output : 14dBm
- Typical input power: 4dBm
- Working voltage: +5V/90mA
- 50Ohm input/output
- 100% on-chip testing
- Chip size : 1.72 x 1.23 x 0.1mm

Product Introduction

GL-0822-2A is an active doubler chip. When the input signal power is 4 dBm, the output signal power in the range of 8GHz~22GHz is 14 dBm. The chip through-hole metallization process ensures good grounding, and the back side is metallized, which is suitable for eutectic sintering or conductive adhesive bonding process .

Use restriction parameter ¹

Maximum drain voltage	+9 V
Maximum gate bias	- 3 V
Maximum input power	+20dBm
Operating temperature	-55 ~ +85°C
storage temperature	-65 ~ +150°C

【1】 Exceeding any of these maximum limits may cause permanent damage.

Electrical performance parameters

(TA = +25°C , Vdd = +5V, Vg = -1.1V, Pin = 4dBm)

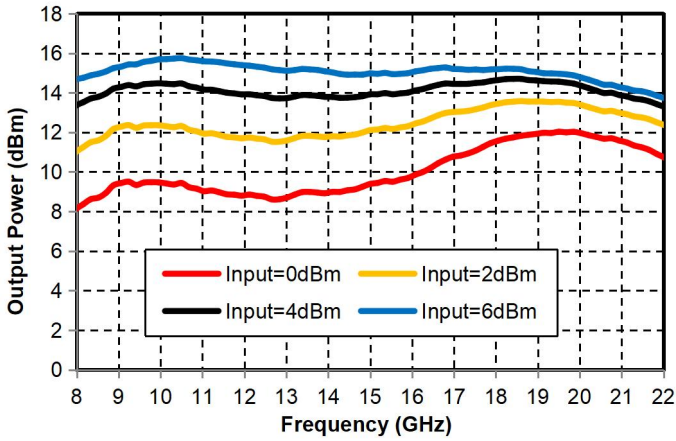
index	Minimum	Typical Value	Maximum	unit
Input frequency range	4-11			GHz
Output frequency range	8-22			GHz
Output Power	-	14	-	dBm
Fundamental Suppression	-	20	-	dBc
Third harmonic suppression	-	26	-	dBc
Input return loss	-	11	-	dB
Output return loss	-	15	-	dB
Current	90			mA

* By tuning the Vg terminal voltage -2V~0V , the recommended gate voltage is -1.1V.

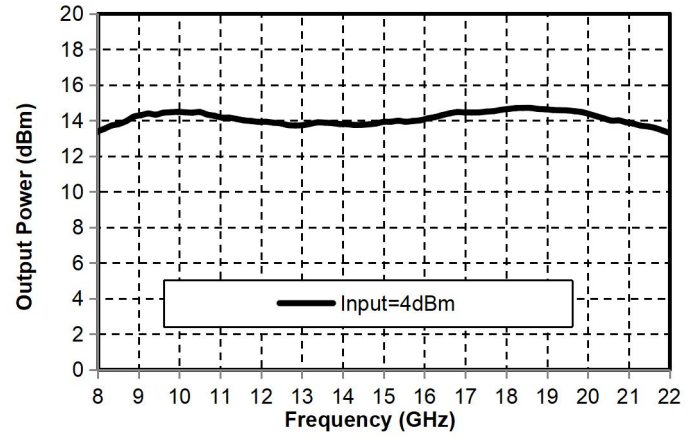
GaAs MMIC Frequency Multiplier Chip, 8-22GHz

Main index test curve

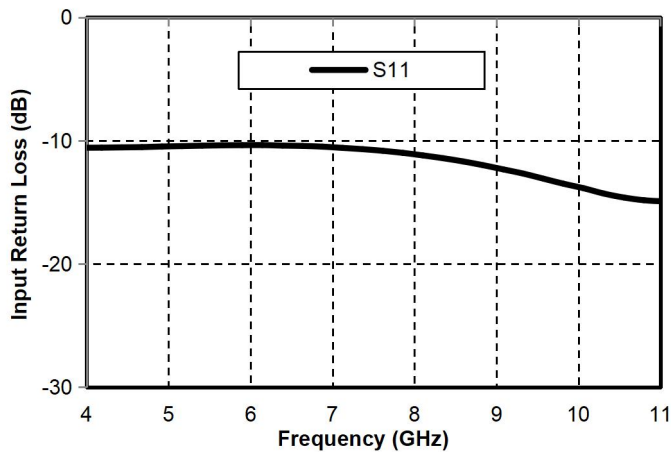
Output Power vs. Input Power



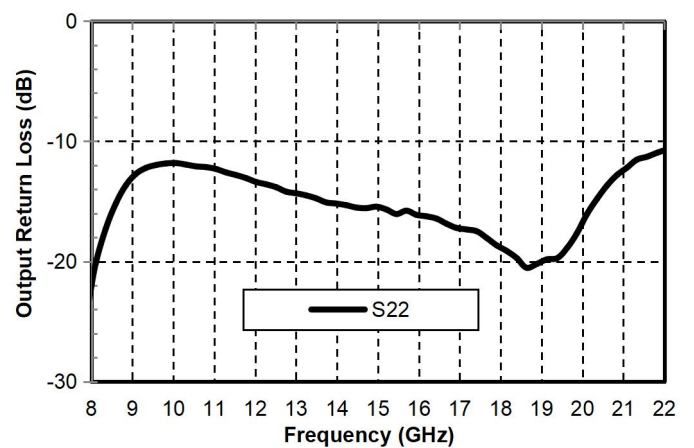
Output power vs. frequency @Pin=4dBm



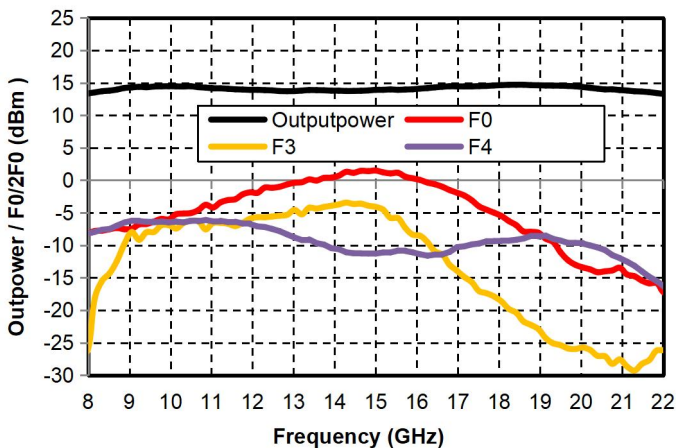
Input Return Loss vs. Operating Frequency



Output Return Loss vs. Operating Frequency

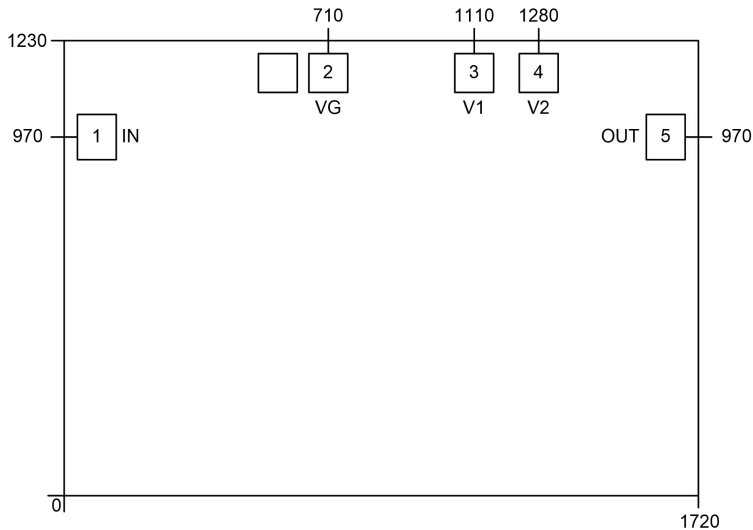


Fundamental vs. Second Harmonic vs. Third Harmonic vs. Fourth Harmonic



GaAs MMIC Frequency Multiplier Chip, 8-22GHz

Appearance and structure (Units in the figure are all micrometers , and the external dimension tolerance is $\pm 50\mu\text{m}$)



Bonding point definition

Bonding point number	Function Symbol	Functional Description
1	RFIN	RF signal input terminal
5	RF OUT	RF signal output terminal
3,4	V1, V2	Amplifier drain bias, external 100pF , 1000pF bypass capacitor required
2	VG	Amplifier gate bias, external 100pF , 1000pF bypass capacitors are required
Chip bottom	GND	The bottom of the chip needs to be well grounded to RF and DC

Recommended assembly drawing

