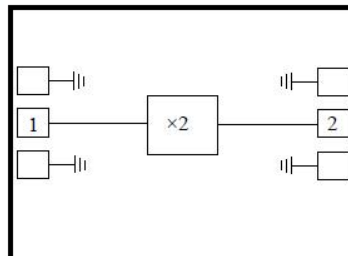


GaAs MMIC Frequency Multiplier Chip, 3-9GHz

Performance characteristics

- Input frequency range: 3 - 9 GHz
- Output frequency range: 6-18GHz
- Typical input power : 15dBm
- Typical output power: 2.5dBm
- 50Ohm input/output
- 100% on-chip testing
- Chip size : 1.52 x 1.15 x 0.1mm

Functional Block Diagram



Product Introduction

GPL-0309-2A is a passive doubler chip. When the input signal power is + 15 dBm, the output signal power in the range of 6 GHz ~ 18 GHz is 2.5 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 input power	+22dBm
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 , Input Power = +15dBm)

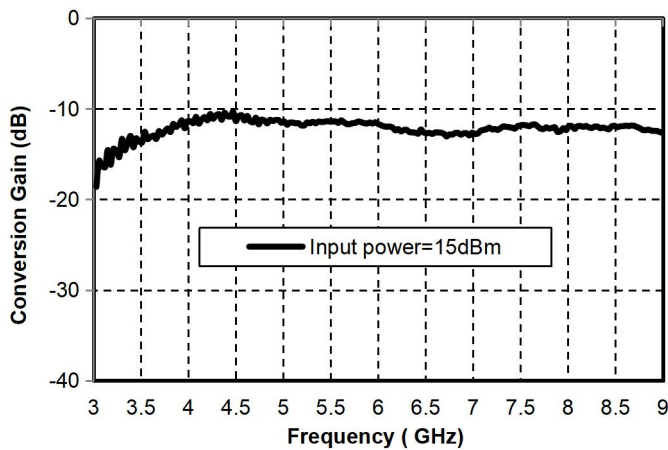
index	Minimum	Typical Value	Maximum	unit
Input frequency range	3-9			GHz
Output frequency range	6-18			GHz
Conversion Gain	-	-12	-	dB
Output Power	-	2.5	-	dBm
Fundamental suppression (relative to double frequency output power)	-	31	-	dBc
Third harmonic suppression (relative to doubled frequency output power)	-	34	-	dBc
Fourth harmonic suppression (relative to doubled frequency output power)	-	22	-	dBc
Fundamental isolation (relative to input power)	-	43	--	dBc
Third harmonic isolation (relative to input power)	-	47	-	dBc

Fourth harmonic isolation (relative to input power)	-	34	-	dBc
Input return loss	-	10	-	dB
Output return loss	-	5	-	dB

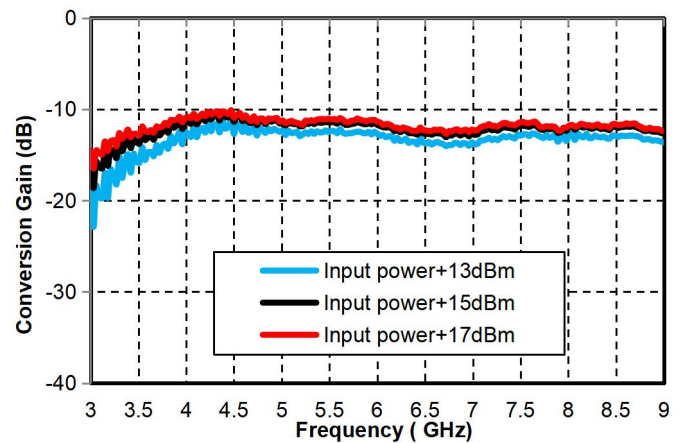
GaAs MMIC Frequency Multiplier Chip, 3-9GHz

Main index test curve

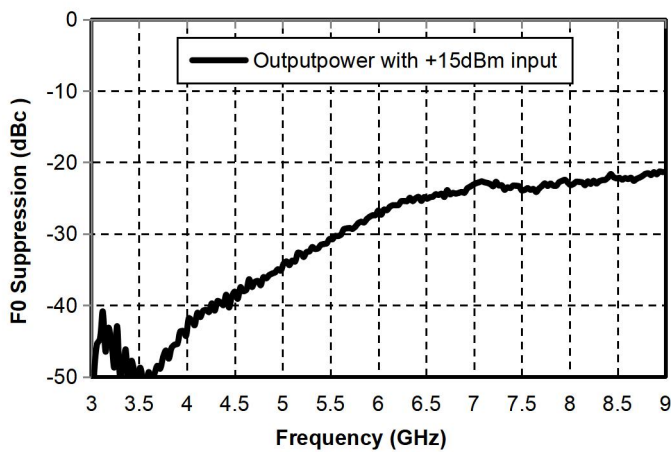
Conversion Gain vs. Frequency



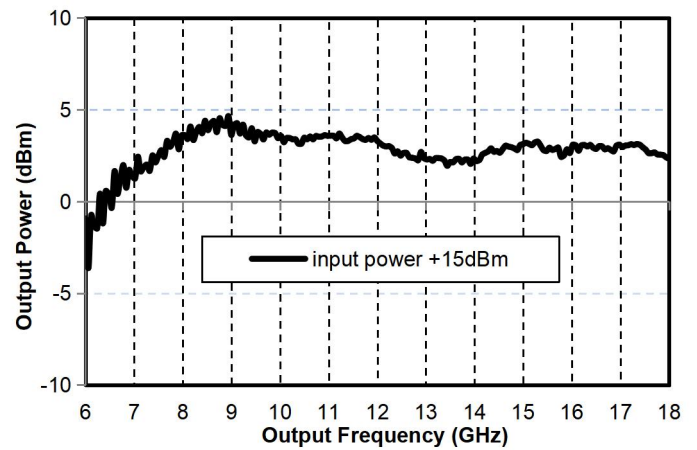
Conversion Gain vs. Input Power



Fundamental Suppression vs. Frequency

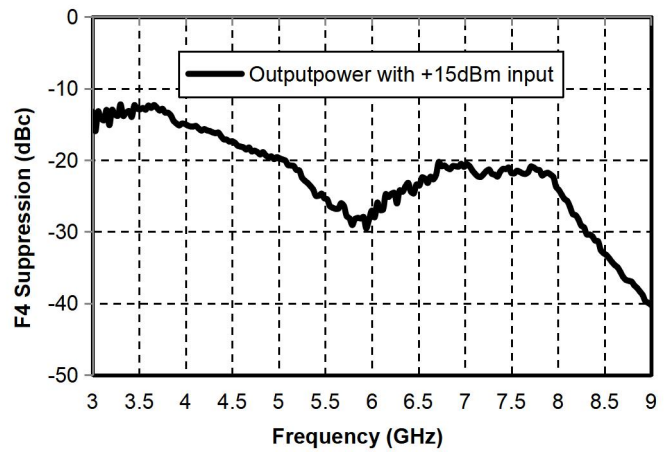
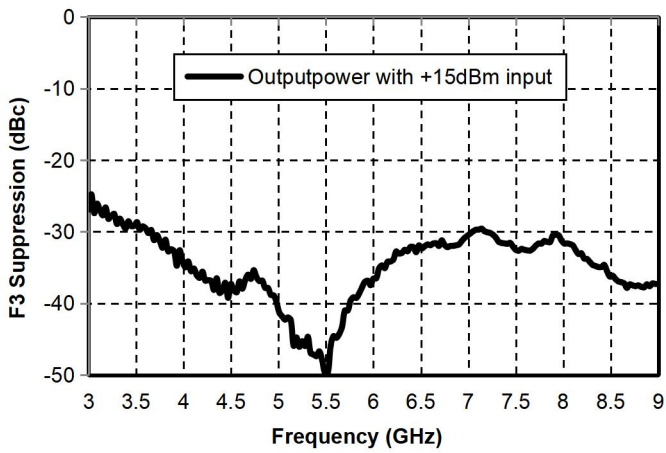


Output Power vs. Frequency

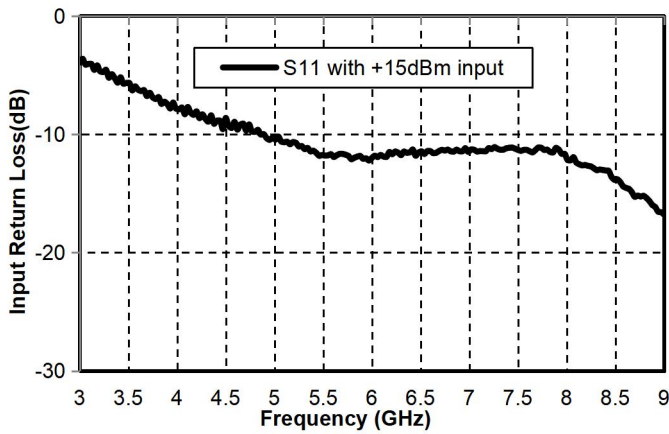


Third Harmonic Suppression vs. Frequency

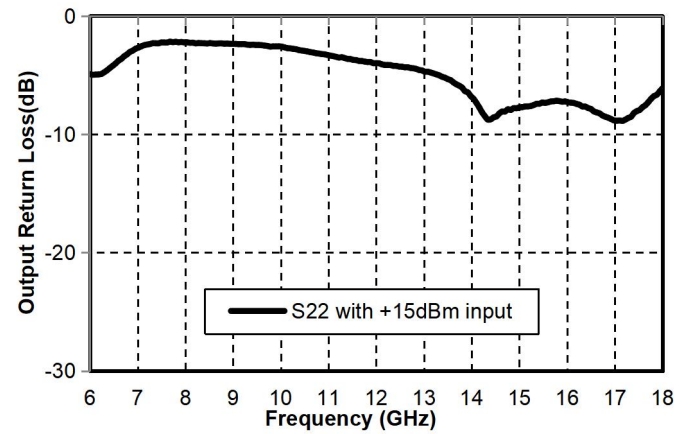
Fourth Harmonic Suppression vs. Frequency



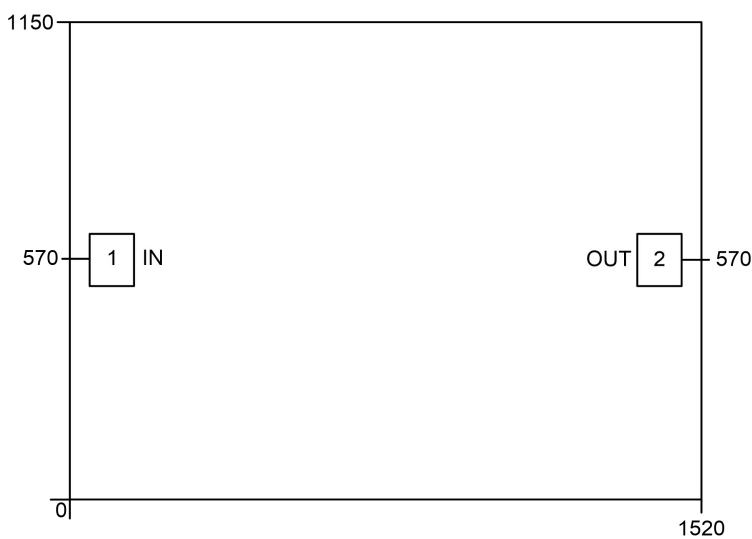
Input Return Loss vs. Frequency



Output Return Loss vs. Frequency



Appearance structure ²



【2】 The units in the figure are all microns , and the dimensional tolerance is : $\pm 50\mu\text{m}$.

Bonding point definition

Bonding point number	Function Symbol	Functional Description
1	RFIN	RF signal input terminal
2	RF OUT	RF signal output terminal
Chip bottom	GND	The bottom of the chip needs to be well grounded to RF and DC

Recommended assembly drawing

