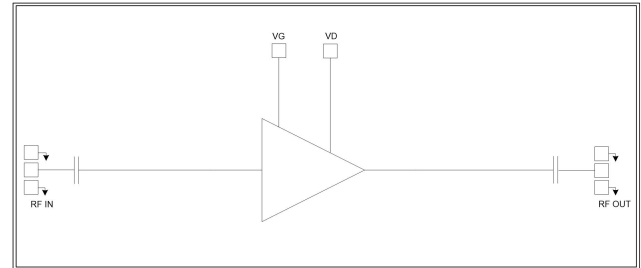


GaAs MMIC Power Amplifier Chip, 2-18GHz

Performance characteristics

Frequency range: 2-18GHz
 Small Signal Gain: 10 dB
 Gain Flatness: ± 1.0 dB
 P-1dB: 20 dBm
 Psat: 21 dBm
 Power supply: +5 V/ 80 mA
 50Ohm input/output
 100% on-chip testing
 Chip size: 1.36 x 0.83 x 0.1mm

Functional Block Diagram



Product Introduction

GPA-0218A is a broadband amplifier chip based on GaAs technology, covering a frequency range of 2~18GHz, a small signal gain of 10dB, and a saturated output power of 21dBm. 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	+7 V
Maximum input power	+20dBm
Maximum gate bias	- 3V
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 , Vd = +5V)

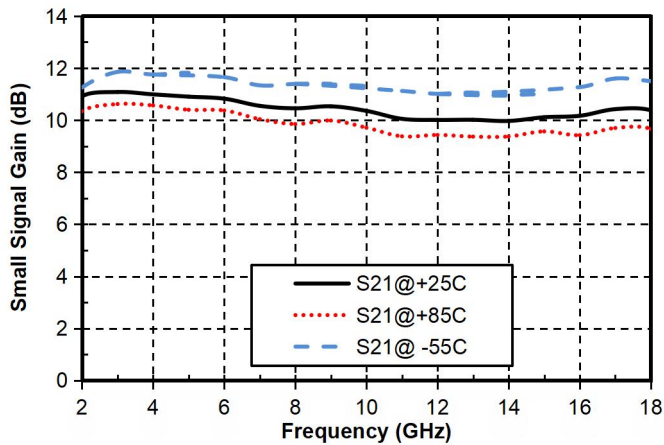
Index	Minimum	Typical Value	Maximum	Unit
Frequency Range	2-18			GHz
Small Signal Gain	-	10	-	dB
Gain Flatness		± 0.5		dB
P -1 dB	-	20	-	dBm
Psat	-	21	-	dBm
Input return loss	-	16	-	dB
Output return loss	-	15	-	dB
Quiescent Current		80		mA

* By adjusting the Vg terminal voltage -2V~0V , 80mA can be achieved , and VG=-0.4V is recommended .

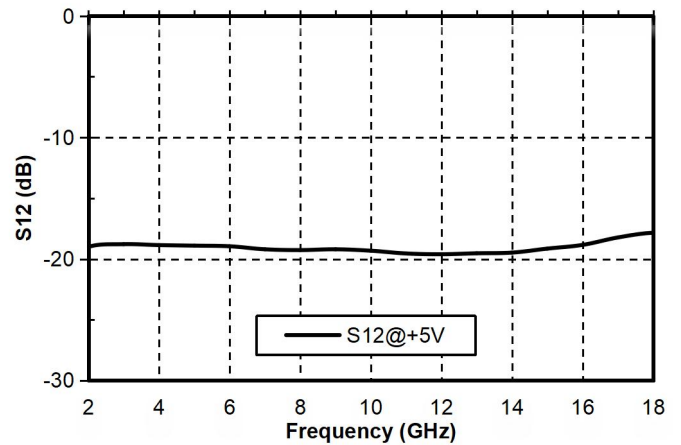
GaAs MMIC Power Amplifier Chip, 2-18GHz

Main index test curve

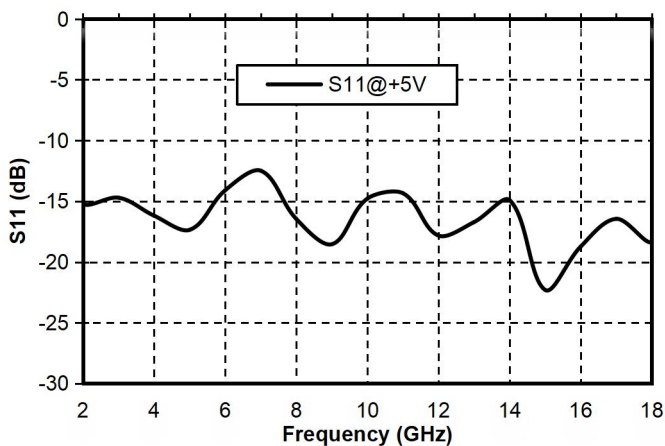
Gain vs. Frequency



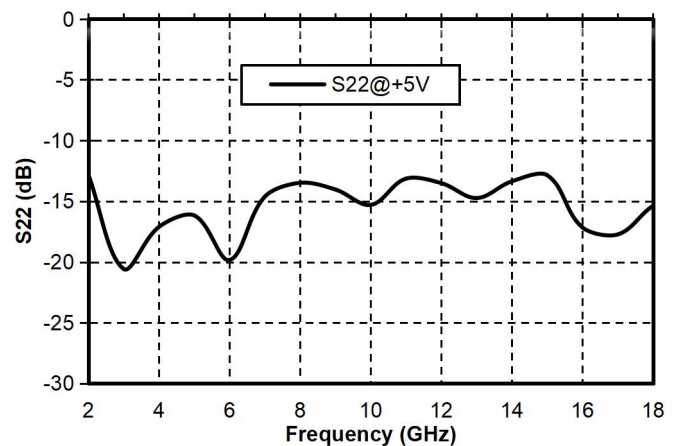
Reverse Isolation vs. Frequency



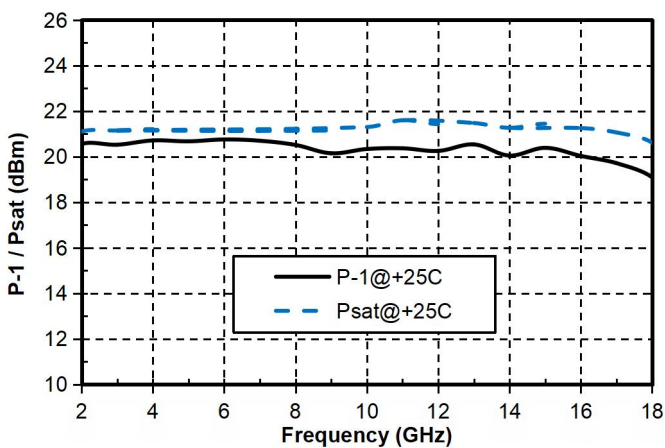
Input Return Loss vs. Frequency



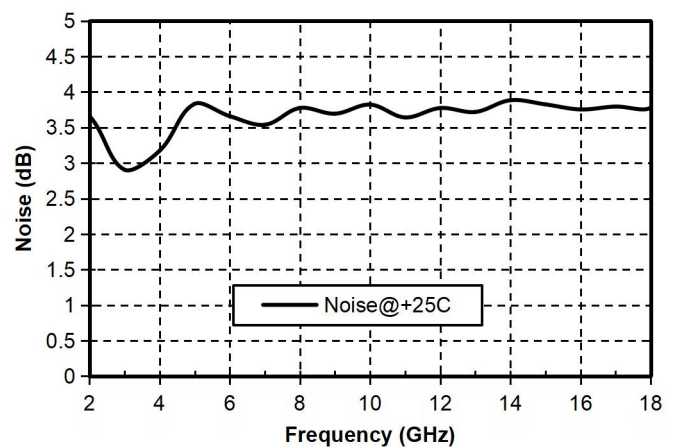
Output Return Loss vs. Frequency



P-1 / Psat vs. Frequency

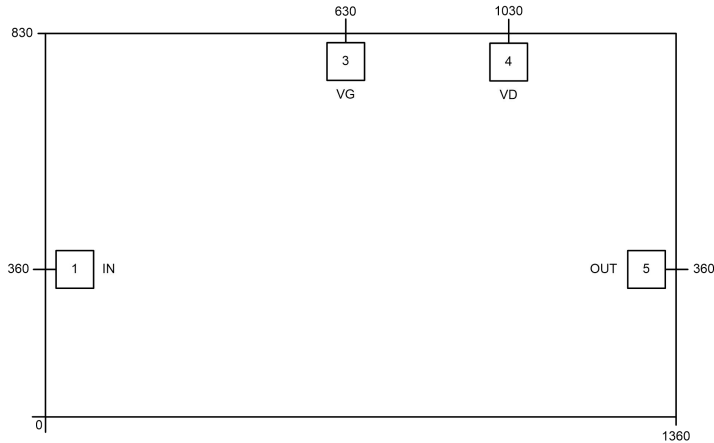


Noise vs. Frequency



GaAs MMIC Power Amplifier Chip, 2-18GHz

Appearance structure ²



【 2 】 All units in the figure are micrometers

Bonding point definition		
Bonding point number	Function Symbol	Functional Description
1	RF IN	RF signal input terminal, no DC blocking capacitor required.
2	RF OUT	RF signal output terminal, no DC blocking capacitor required.
3	VG	Amplifier gate bias, requires external 100pF bypass capacitor.
4	V D	Amplifier drain bias, requires external 100pF bypass capacitor.
Chip bottom	GND	needs to be in good contact with the RF and DC grounds.

Recommended assembly diagram

