GPA -1418A

GaAs MMIC Power Amplifier Chip, 14-18GHz

Performance characteristics

Frequency range: 14-18GHz
Small Signal Gain: 27.5 dB
P-1dB: 30.5 dBm
Psat: 31.5d Bm
Power supply: +5V/580mA
50Ohm input/output
100% on-chip testing
Chip size: 3.14 x 1.59 x 0.1mm

Product Introduction

GPA -1418A is a broadband high-gain, high-efficiency, high- power amplifier chip based on GaAs technology , covering a frequency range of 14~18GHz, with a small signal gain of 27.5 dB and a Psat output power of 31.5 dBm when operating at +5V . The chip via metallization process ensures good grounding, and the back side is metallized, which is suitable for eutectic sintering process.

Use restriction parameter [1]	
Maximum drain voltage	+9 V
Maximum gate bias	- 3 V
Maximum input power	+25 dBm
Operating temperature	-55 ~ +85°C
Storage temperature	-65 ~ +150°C

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

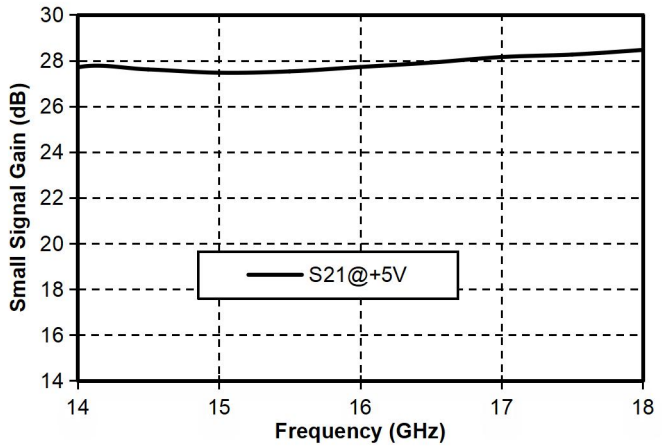
Electrical parameters (Ta=+25°C, Vd = +5 V, Vg=-5V*, Ids= 580 mA)				
index	Minimum	Typical Value	Maximum	unit
Frequency Range		14-18		GHz
Small Signal Gain	-	27.5	-	dB
Gain Flatness		± 0.5		dB
P-1dB	-	30.5	-	dBm
Psat	-	31.5	-	dBm
Input return loss	-	15	-	dB
Output return loss	-	15	-	dB
* The gate voltage is -5V (internal integrated voltage divider circuit).				

Add: 101 cecil street #14-10, tong eng building singapore 069533
Email: info@standardcircuit.com
Web: www.standardcircuit.com
Tel: +65 82613258

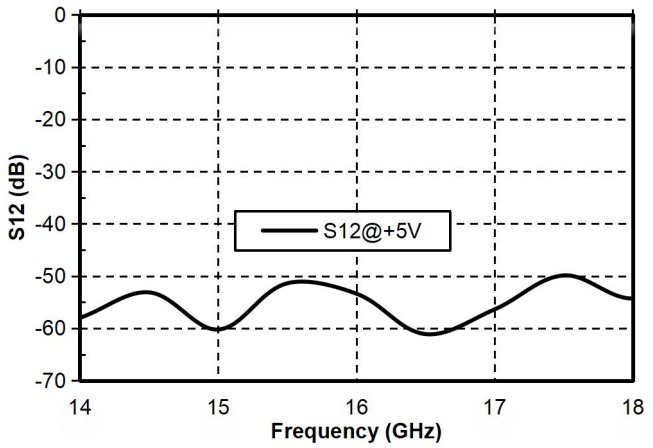
GaAs MMIC Power Amplifier Chip, 14-18GHz

Main index test curve

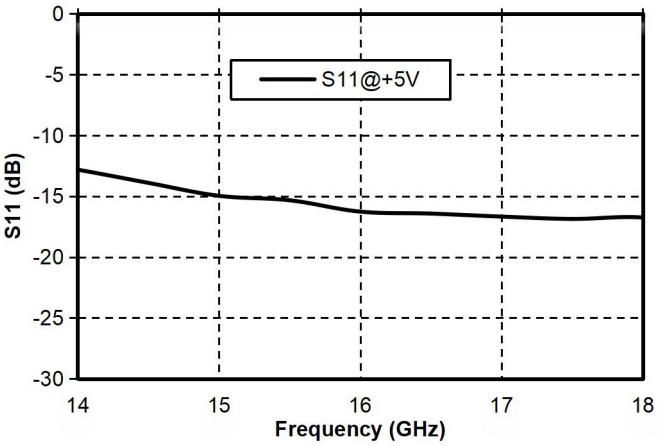
Gain vs. Frequency



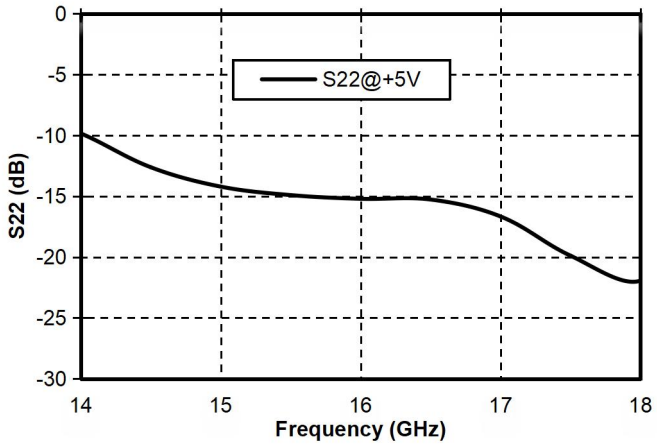
Reverse Isolation vs. Frequency



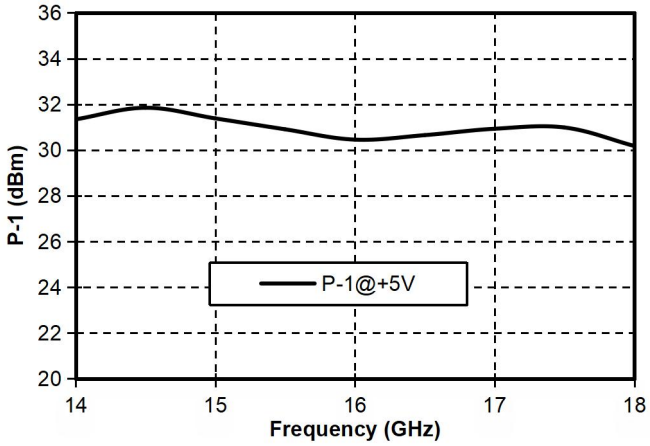
Input Return Loss vs. Frequency



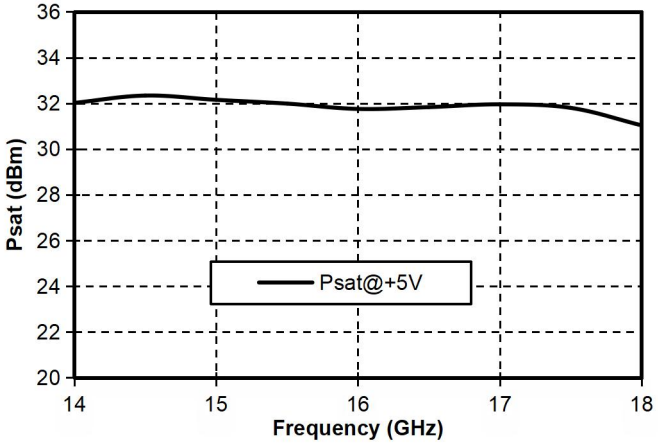
Output Return Loss vs. Frequency



P- 1 vs. Frequency



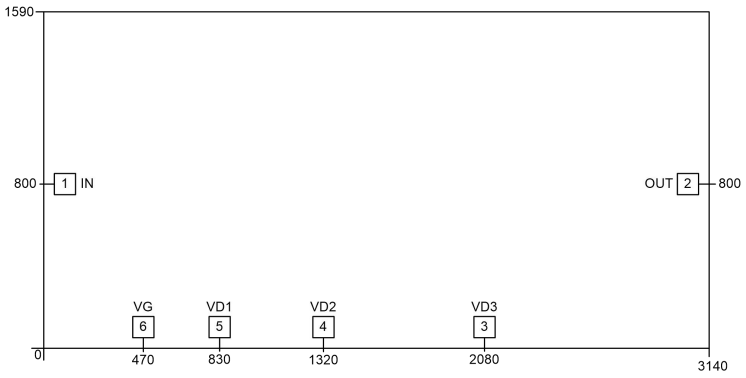
P sat vs. frequency



Add: 101 cecil street #14-10, tong eng building singapore 069533
Email: info@standardcircuit.com
Web: www.standardcircuit.com
Tel: +65 82613258

GaAs MMIC Power Amplifier Chip, 14-18GHz

Appearance structure [2]



【2】The units in the figure are all micrometers (dimensional tolerance: ±100um.)

Bonding point definition		
Bonding point number	Function Symbol	Functional Description
1	RF IN	The signal input terminal is connected to a 50 ohm circuit, and no DC blocking capacitor is required.
2	RF OUT	The signal output terminal is connected to a 50 ohm circuit, and no DC blocking capacitor is required.
3, 4, 5	V D1~3	Amplifier drain bias, external 100pF , 1000pF , 4.7uf bypass capacitors are required.
6	VG	Amplifier gate bias, external 100pF , 1000pF , 4.7uf bypass capacitors are required.
Chip bottom	GND	needs to be in good contact with the RF and DC grounds.

Recommended assembly diagram