Standard Circuit

GPA-3238C

GaAs MMIC Power Amplifier Chip, 32-38GHz

Performance characteristics

Frequency range: 32-38GHz
Small Signal Gain: 18 dB
Gain flatness : ± 1.7 dB
P-1dB: 33 dBm
Psat: 33.5 dBm
Power supply: + 6V@1200mA, 1500mA under RF drive
50Ohm input/output
100% on-chip testing
Chip size: 2.26 x 2.95 x 0.1mm

Product Introduction

GPA -3238C is a broadband high-gain, high-efficiency, high- power amplifier chip based on GaAs technology , covering a frequency range of 32~38GHz, with a small signal gain of 18dB, a Psat output power of 33.5dBm, and an efficiency of 23%. The amplifier also supports +5V operation, with a Psat output power of 32.5dBm and an efficiency of 26% when working 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	+8 V
Maximum gate bias	- 3 V
Maximum input power	+30 dBm
Operating temperature	-55 ~ +85°C
Storage temperature	-65 ~ +150°C

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

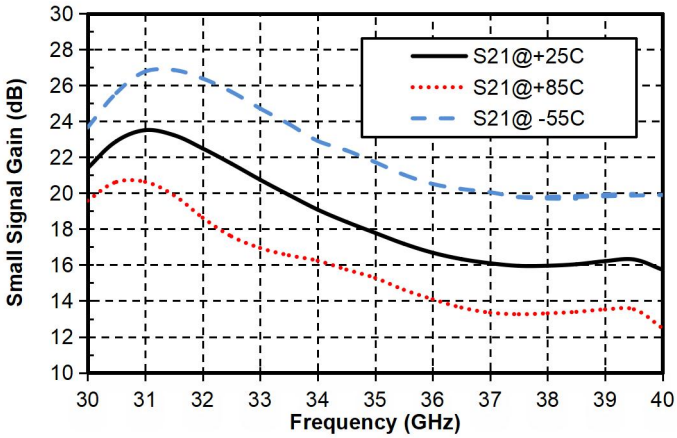
Electrical parameters (Ta=+25°C, Vd = +6 V, Vg=-0.7V, Ids= 1200 mA)				
index	Minimum	Typical Value	Maximum	unit
Frequency Range		32-38		GHz
Small Signal Gain	-	18	-	dB
Gain Flatness		± 1.7		dB
P-1dB	-	33	-	dBm
Psat	-	33.5	-	dBm
PAE	-	twenty three	-	%
Input return loss	-	10	-	dB
Output return loss	-	15	-	dB
* By tuning the Vg terminal voltage -2V~0V , the recommended gate voltage is -0.7V.				

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

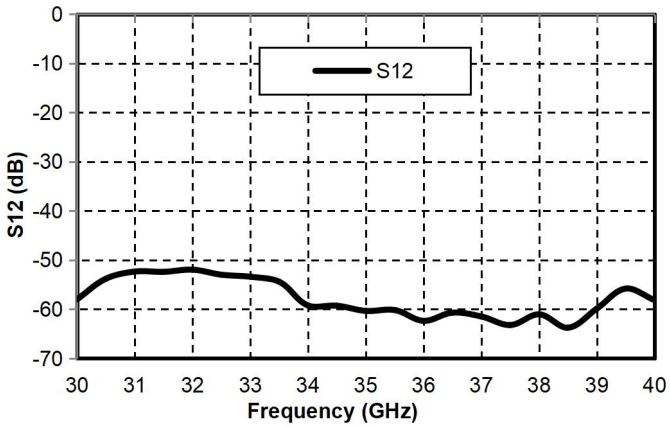
GaAs MMIC Power Amplifier Chip, 32-38GHz

Main index test curve Vd = +6V, Vg = -0.7V, Ids = 1200mA

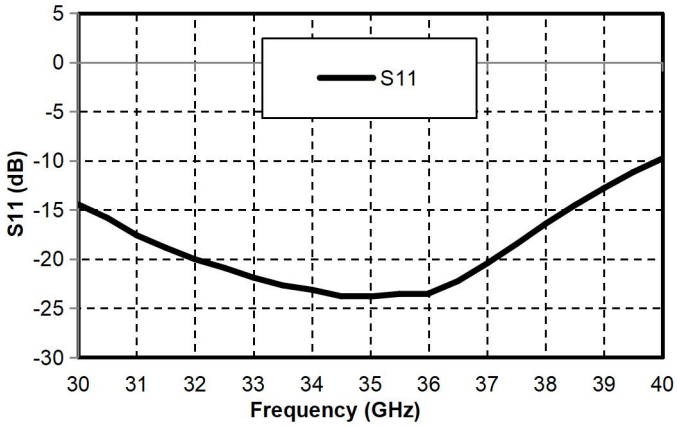
Gain vs. Frequency



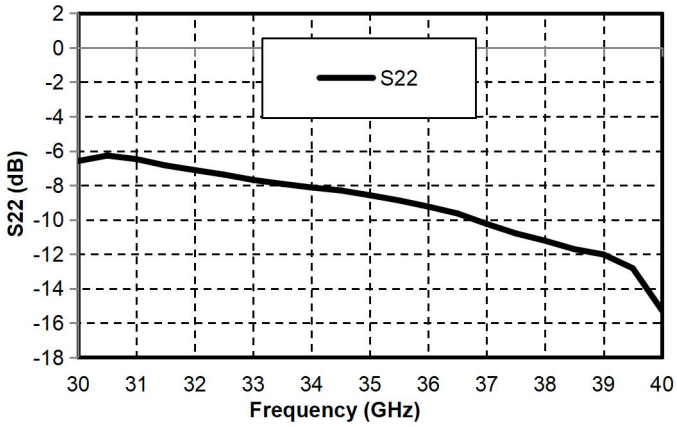
Reverse Isolation vs. Frequency



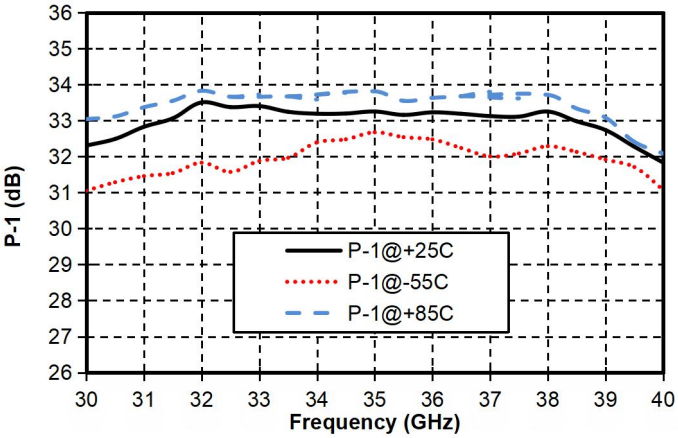
Input Return Loss vs. Frequency



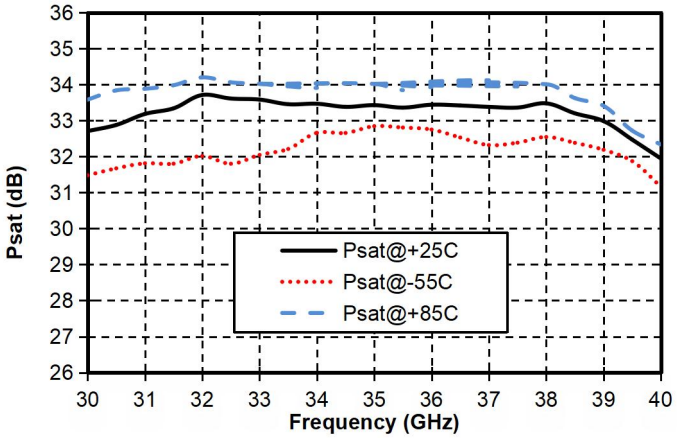
Output Return Loss vs. Frequency



P-1dB vs. Frequency



Psat vs. Frequency

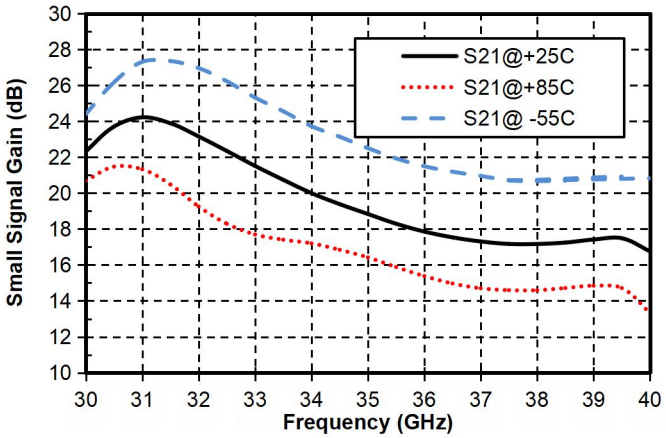


Add: 101 cecil street #14-10, tong eng building singapore 069533
Email: info@standardcircuit.com
Web: www.standardcircuit.com
Tel: +65 82613258

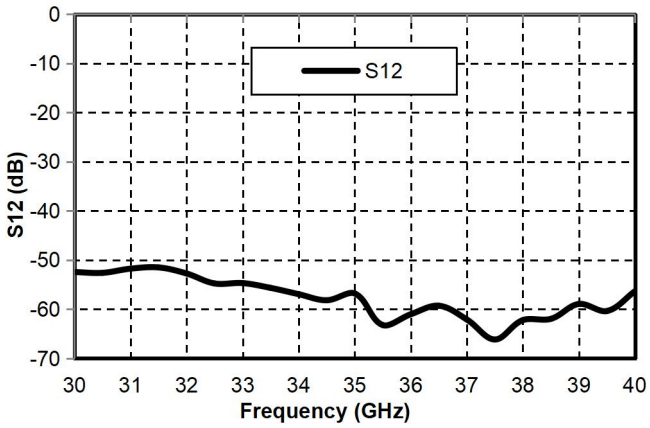
GaAs MMIC Power Amplifier Chip, 32-38GHz

Main index test curve Vd = +5V, Vg = -0.7V, Ids = 1200mA

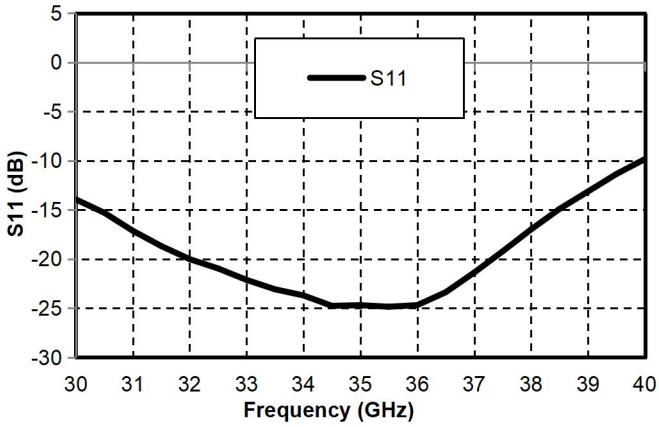
Gain vs. Frequency



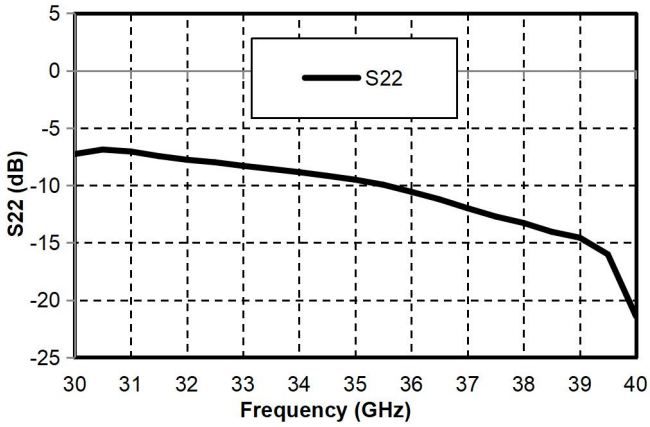
Reverse Isolation vs. Frequency



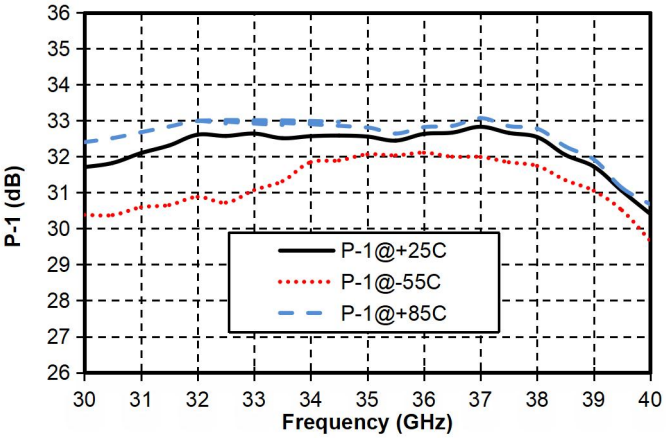
Input Return Loss vs. Frequency



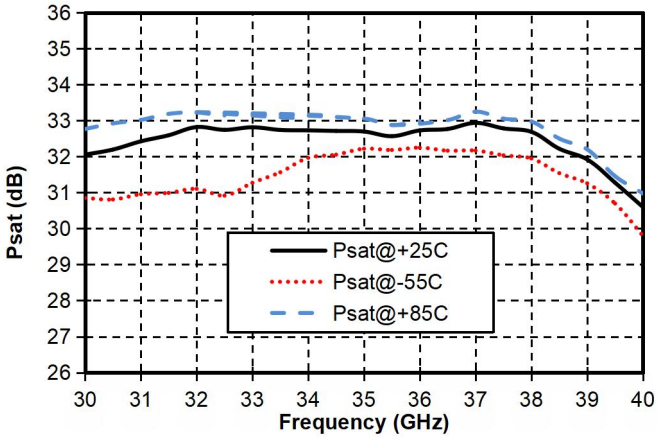
Output Return Loss vs. Frequency



P-1dB vs. Frequency



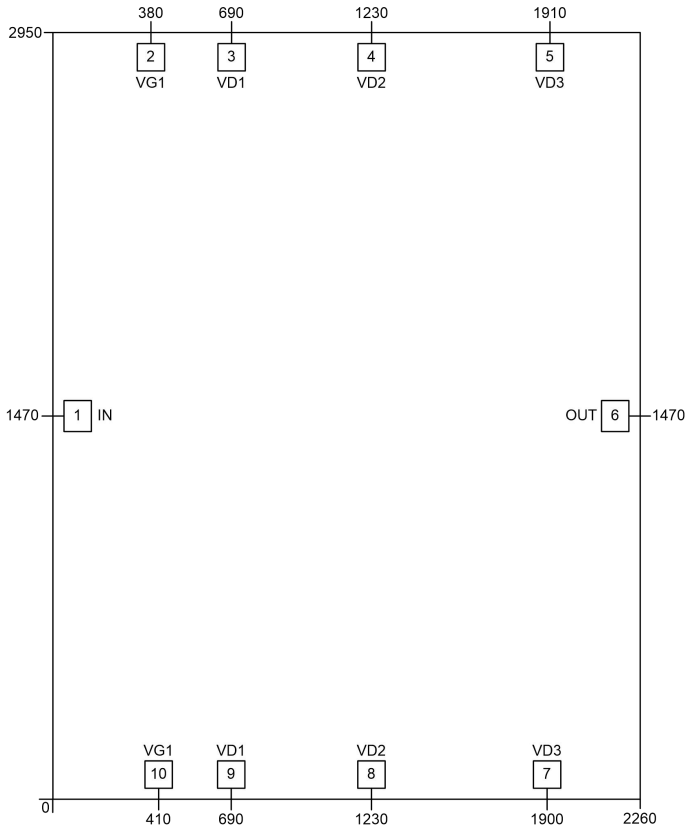
Psat vs. Frequency



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, 32-38GHz

Appearance and structure (unit in the figure is micrometer)



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.
6	RF OUT	The signal output terminal is connected to a 50 ohm circuit, and no DC blocking capacitor is required.
3, 4, 5, 7, 8, 9	V D1~3	Amplifier drain bias, external 100pF , 1000pF , 4.7uF bypass capacitors are required.
2.10	VG1	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.

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, 32-38GHz

Recommended assembly diagram