Standard Circuit

GPA- 0408A-PQ4

GaAs MMIC Driver Amplifier Chip, 4-8 GHz

Performance characteristics

- Frequency range: 4 - 8 GHz
- Small signal gain: 21.5dB
- Gain flatness : ± 1.4dB
- P -1 dB ： 28dBm
- Psat : 28.5dBm
- Power supply: +8 V /190mA
- 50Ohm input / output
- Chip size: QFN 4X4

Product Introduction

GPA-0408A-PQ4 is a broadband, high-efficiency, high-power driver amplifier with a frequency range of 4GHz~8GHz, a small signal gain of 21.5 dB , and a P-1 output of 28dBm. GPA-0408A-PQ4 is powered by a +8V power supply. This chip is packaged in a 4 x 4 mm plastic surface mount package , and the surface of the pin pad is tinned, which is suitable for reflow soldering installation.

Using the Limit Parameter	
Maximum drain voltage	+10V
Maximum gate bias	-3V
Maximum input power	+20dBm
Operating temperature	-55 ~ +85°C
Storage temperature	-65 ~ +150°C

Exceeding any of these maximum limits may cause permanent damage.

Electrical performance parameters (TA = +25°C ， Vd =+8V， Ids=190mA)				
Index	Minimum	Typical Value	Maximum	Unit
Frequency Range		4-8		G Hz
Small Signal Gain	-	21.5	-	dB
Gain Flatness		± 1 . 4		dB
P -1dB	-	28	-	dBm
Psat	-	28.5	-	dBm
Input return loss	-	12	-	dB
Output return loss	-	7	-	dB
Quiescent Current		190		mA
* By tuning the Vg terminal voltage from -2V to 0V , the recommended gate voltage is -0.65V .				

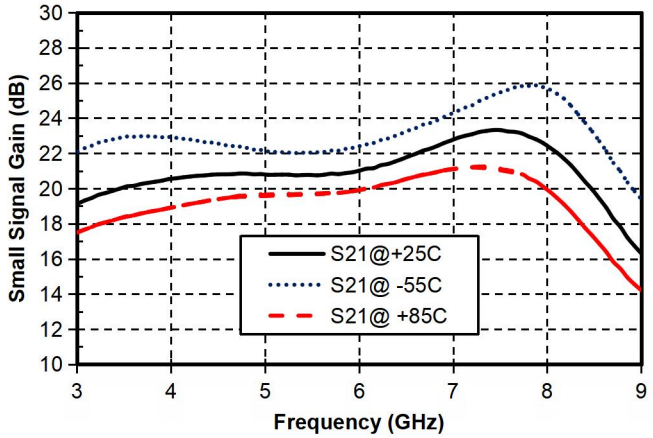
Add: 101 cecil street #14-10, tong eng building singapore 069533
Email: info@standardcircuit.com
Web: www.standardcircuit.com
Tel: +65 82613258

GPA- 0408A-PQ4

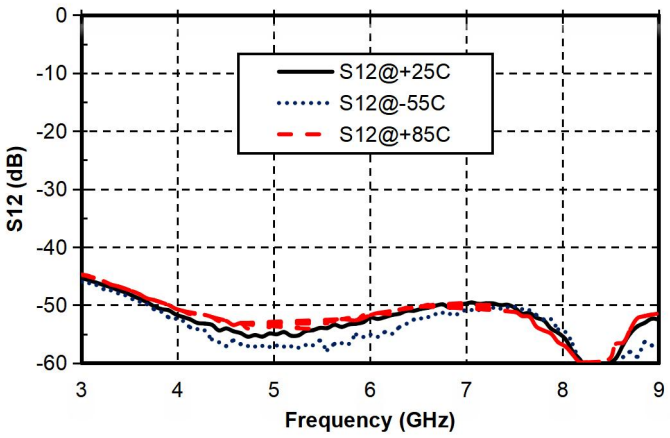
GaAs MMIC Driver Amplifier Chip, 4 - 8 GHz

Main index test curve

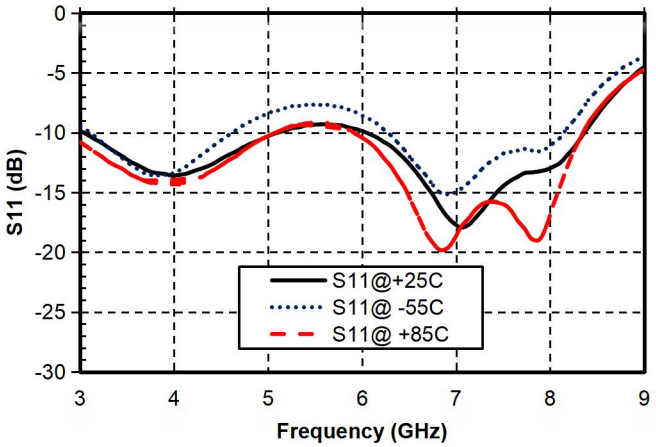
Gain vs. Frequency



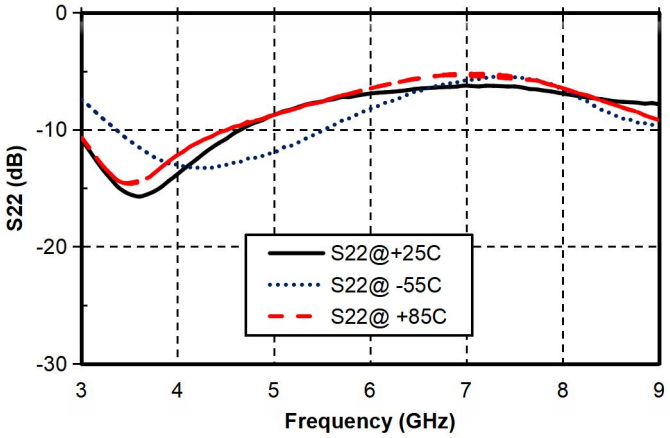
Reverse Isolation vs. Frequency



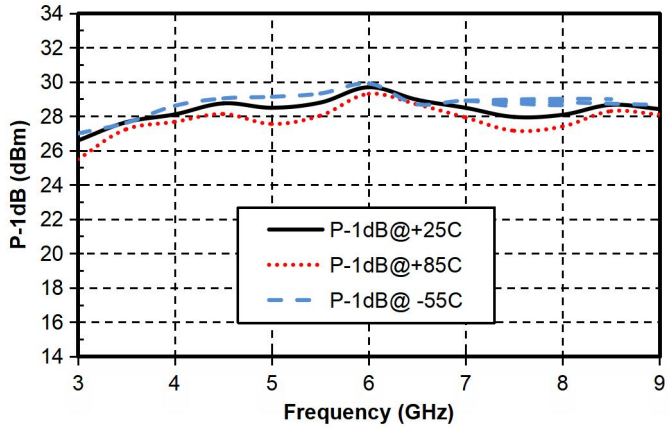
Input Return Loss vs. Frequency



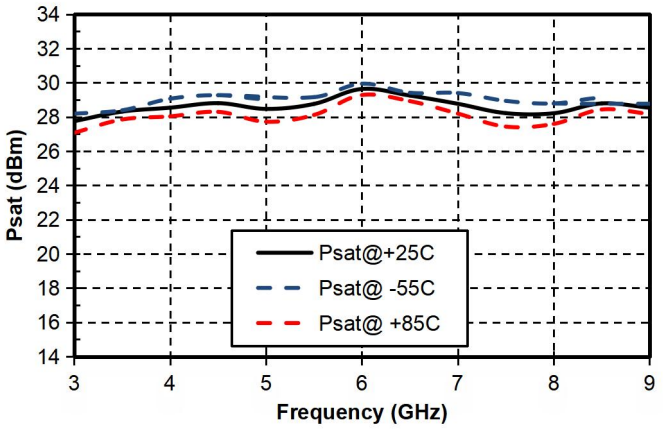
Output Return Loss vs. Frequency



P-1dB vs. Frequency



P sat vs. frequency

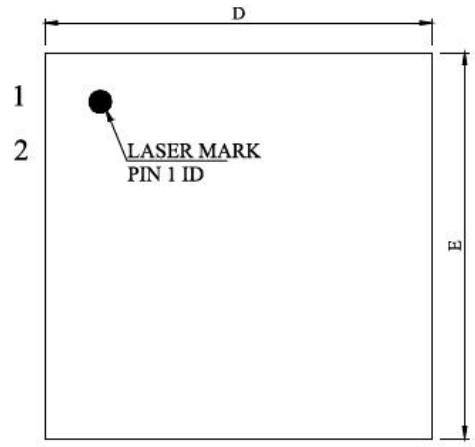


Add: 101 cecil street #14-10, tong eng building singapore 069533
Email: info@standardcircuit.com
Web: www.standardcircuit.com
Tel: +65 82613258

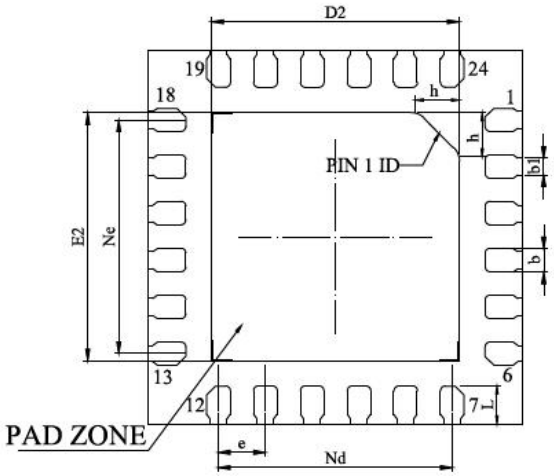
GPA- 0408A-PQ4

GaAs MMIC Driver Amplifier Chip, 4 - 8 GHz

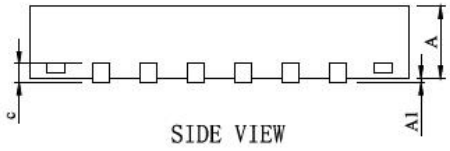
Appearance structure



Top view



Bottom view



Side View

The units in the figures are all in millimeters , and the tolerance is ±0.15 mm.

SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0. 70	0. 75	0. 80
A1	——	0. 02	0. 05
b	0. 20	0. 25	0. 30
b1	0. 15REF		
c	0. 203REF		
D	3. 90	4. 00	4. 10
D2	2. 60	2. 70	2. 80
e	0. 50BSC		
Ne	2. 50BSC		
Nd	2. 50BSC		
E	3. 90	4. 00	4. 10
E2	2. 60	2. 70	2. 80
L	0. 35	0. 40	0. 45
h	0. 30	0. 35	0. 40

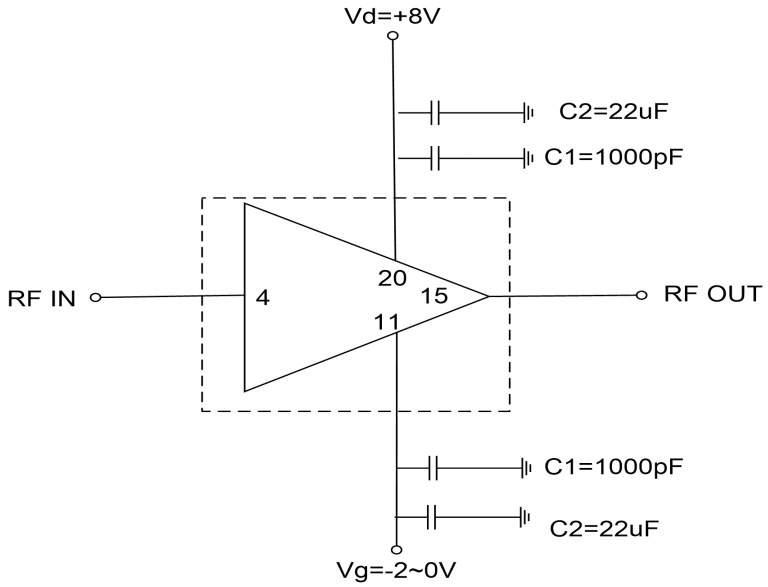
Add: 101 cecil street #14-10, tong eng building singapore 069533
Email: info@standardcircuit.com
Web: www.standardcircuit.com
Tel: +65 82613258

GPA- 0408A-PQ4

GaAs MMIC Driver Amplifier Chip, 4 - 8 GHz

Pin Definition		
Pin Definition	Function Symbol	Functional Description
4	RFIN	RF signal input terminal, no DC blocking capacitor required
15	RFOUT	RF signal output terminal, no DC blocking capacitor required
11	VG	Amplifier gate bias , external 1000pF , 22 uF bypass capacitors are required
20	VD	Amplifier drain bias , external 1000pF , 22 uF bypass capacitors are required
3, 5, 14, 16	GND	Need to be in good contact with the RF and DC grounds.
Chip bottom	GND	The bottom of the chip needs to be well grounded to RF and DC
Other	NC	No welding required

Recommended Circuit



Precautions for use

- Sealing material : Low-pressure injection molding plastic that meets ROSH specifications
- Lead frame material: copper alloy
- Lead surface plating: gold, gold layer thickness 4 μ ' MIN
- Maximum reflow peak temperature: 260 ℃

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