Standard Circuit

GPA- 0620C-CQ3

GaAs MMIC Power Amplifier Chip, 6-20 GHz

Performance characteristics

- Frequency range: 6 - 20GHz
- Small signal gain: 13.5dB
- Gain flatness: ± 1.25dB
- P -1 dB :19 dBm
- Psat : 20dBm
- Power supply: + 5V /115mA
- 50Ohm input / output
- Chip size: QFN 3X3

Product Introduction

GPA-0620C-CQ3 is a broadband amplifier based on GaAs technology , with a frequency range of 6GHz~20GHz, a small signal gain of 13.5dB, and a P-1 output of 19dBm. GPA-0620C-CQ3 is powered by a single +5V power supply. This chip uses a 3 x 3 mm ceramic surface mount package, which can achieve airtight packaging. The surface of the pin pad is gold-plated, which is suitable for reflow soldering installation process.

Use limit parameters	
Maximum drain voltage	+7V
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 = +5V)				
Index	Minimum	Typical Value	Maximum	Unit
Frequency Range		6-20		G Hz
Small Signal Gain	-	13.5	-	dB
Gain Flatness		± 1.25		dB
P -1dB	-	19	-	dBm
Psat	-	20	-	dBm
Input return loss	-	14	-	dB
Output return loss	-	16	-	dB
Quiescent Current		115		mA

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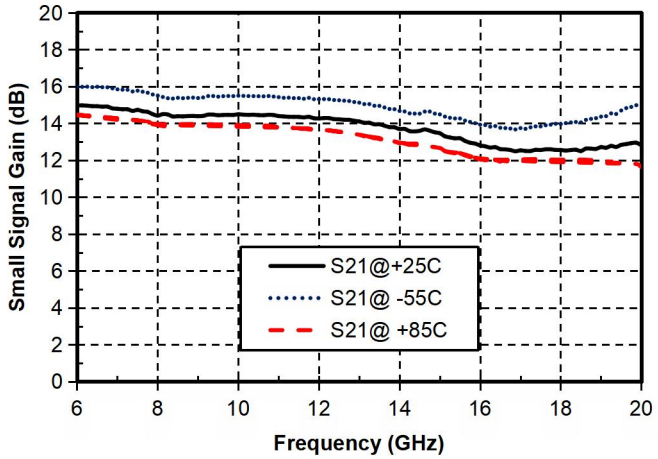
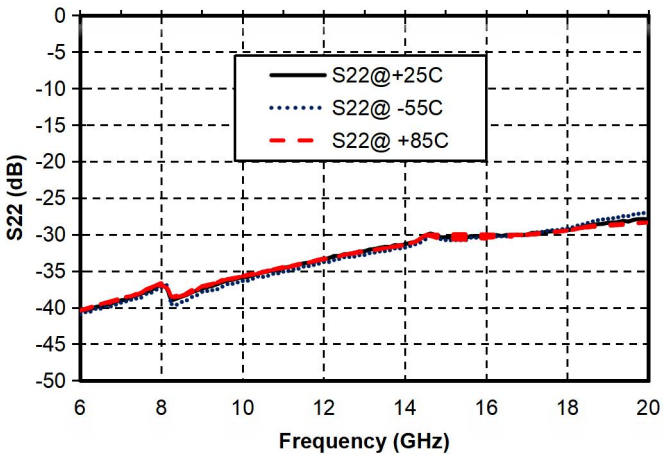
Main index test curve

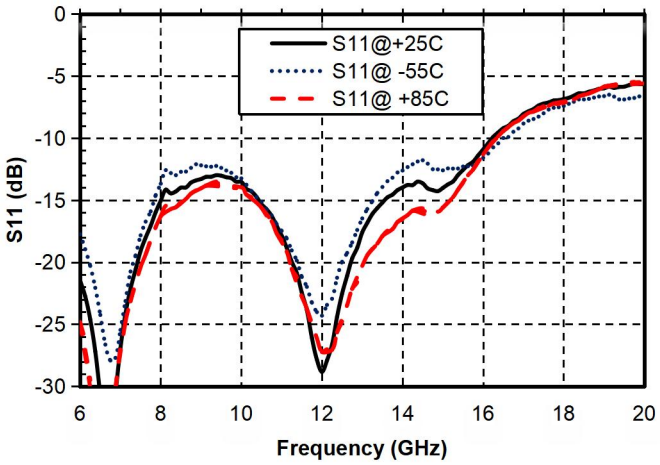
Gain vs. Frequency



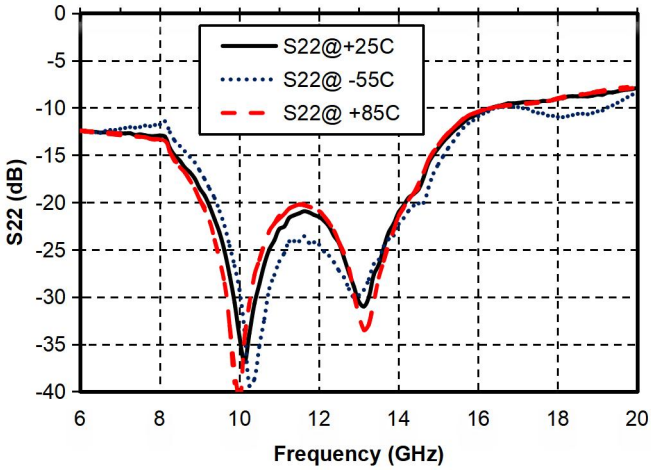
Reverse Isolation vs. Frequency



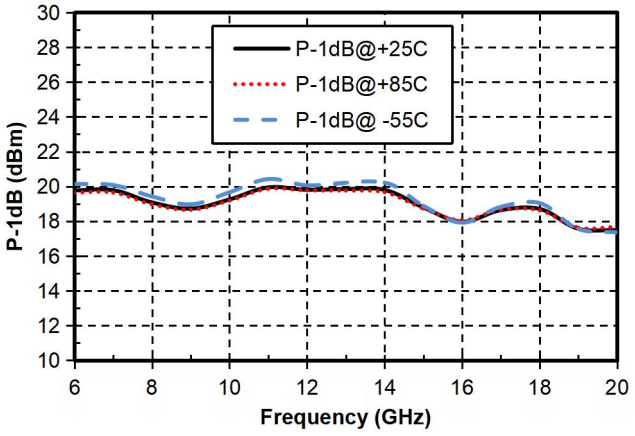
Input Return Loss vs. Frequency



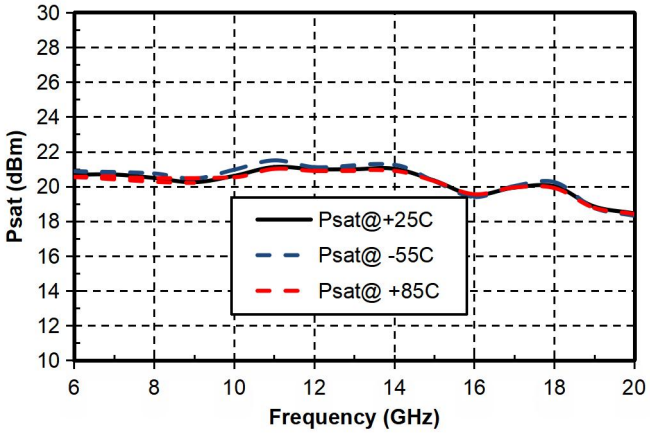
Output Return Loss vs. Frequency



P-1dB vs. Frequency



P sat vs. frequency



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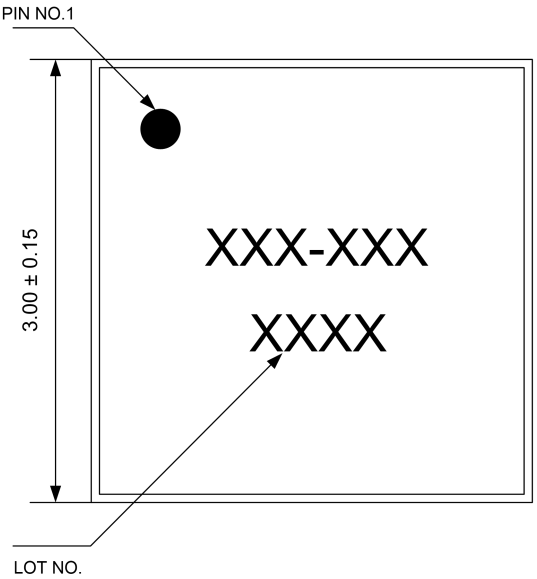
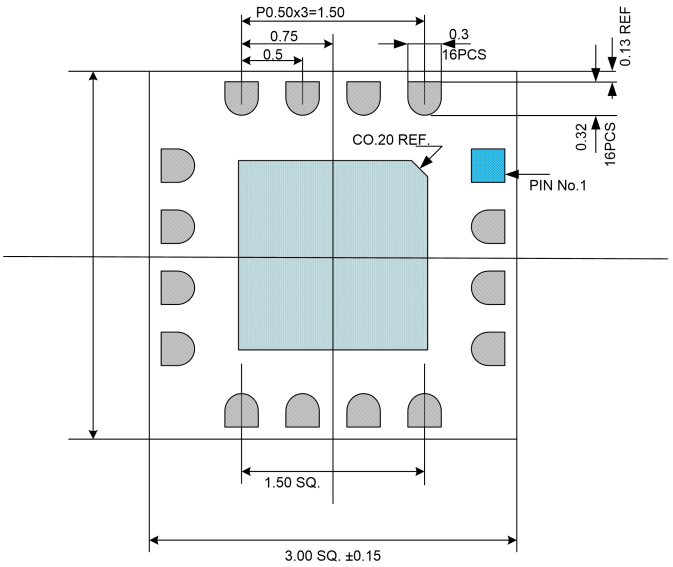
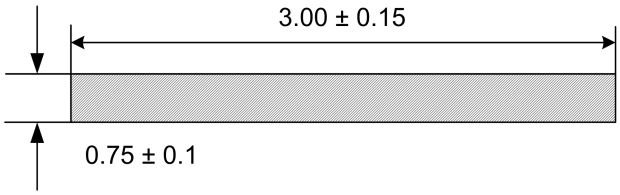
Appearance structure



Top view



Bottom view



Side View

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

Pin Definition

Bonding point number	Function Symbol	Functional Description
2	RFIN	RF signal input terminal, no DC blocking capacitor required
11	RFOUT	RF signal output terminal, no DC blocking capacitor required
14	VDD	Amplifier Drain Bias
1, 3, 10, 12	GND	The pins need to be well grounded to the RF and DC grounds
Chip bottom	GND	The bottom of the chip needs to be well grounded to RF and DC
4~9, 13, 15, 16	NC	No welding required

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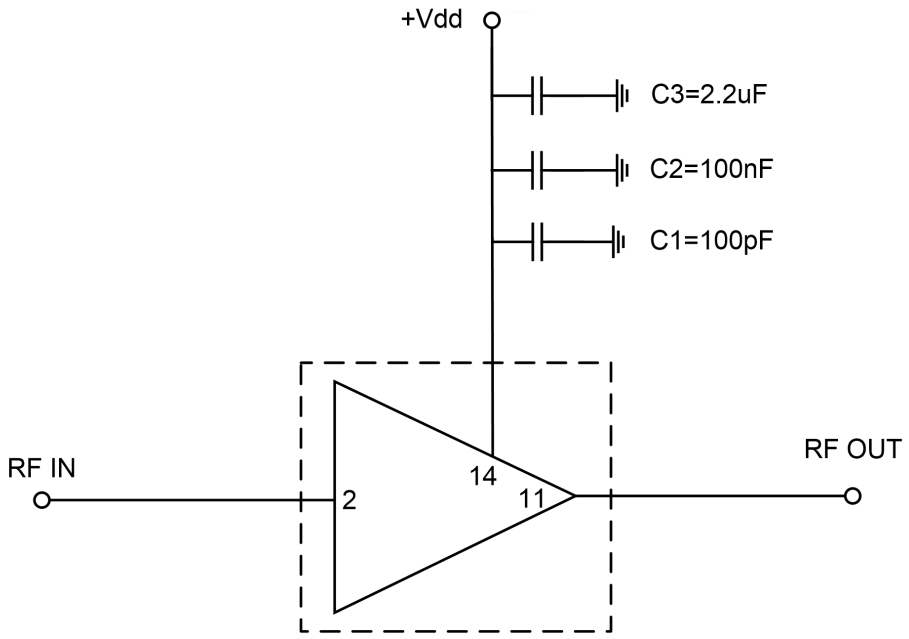
Recommended Circuit



Precautions for use

- Sealing material : Ceramic material that meets ROSH standards
- Lead frame material: copper alloy
- Lead surface plating: gold, gold layer thickness greater than 0.3um MIN.
- Maximum reflow peak temperature: 260 ℃