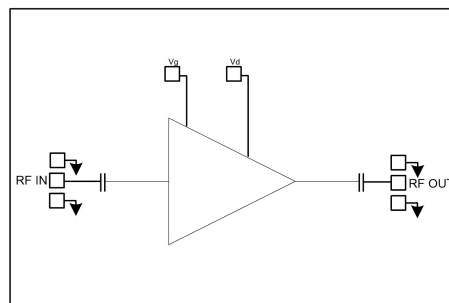


## GaAs MMIC Power Amplifier Chip, 27-31GHz

### Performance characteristics

Frequency range: 27-31GHz  
 Small Signal Gain: 25 dB  
 P-1dB: 24 dBm  
 Psat: 24 dBm  
 Power supply: +5V@115mA  
 50Ohm input/output  
 100% on-chip testing  
 Chip size : 1.77 x 0.8 x 0.1mm

### Functional Block Diagram



### Product Introduction:

GPA-2731D-Pr is a broadband high-gain, high-efficiency, high- power amplifier chip based on GaAs technology , covering a frequency range of 27~31GHz, with a small signal gain of 25dB and a P-1 output power of 24dBm. The chip via metallization process ensures good grounding, and the back side is metallized for eutectic sintering process.

### Use restriction parameter <sup>1</sup>

Maximum drain voltage	+7 V
Maximum gate bias	- 3 V
Maximum input power	+20 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=-0.85V, Ids= 115 mA)

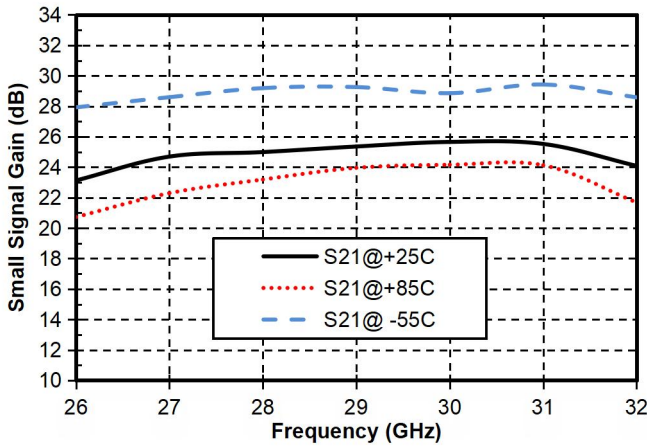
index	Minimum	Typical Value	Maximum	unit
Frequency Range	27-31			GHz
Small Signal Gain	-	25	-	dB
Gain Flatness	± 0.5			dB
P-1dB	-	24	-	dBm
Psat	-	24	-	dBm
Input return loss	-	13	-	dB
Output return loss	-	9	-	dB
Quiescent Current	-	115	-	

\* By tuning the Vg terminal voltage -2V~0V , the recommended gate voltage is -0.85V.

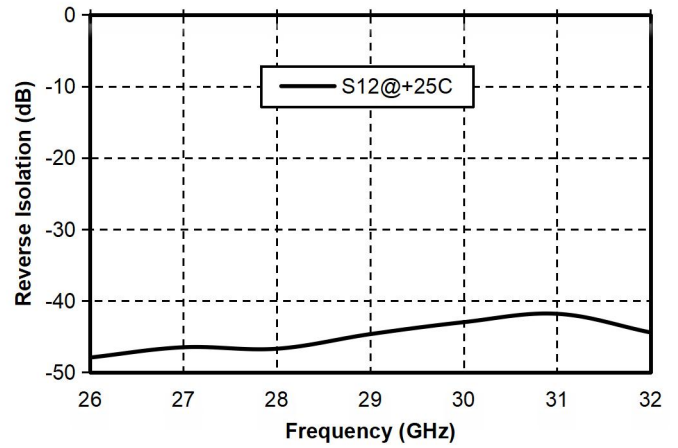
## GaAs MMIC Power Amplifier Chip, 27-31GHz

### Main index test curve

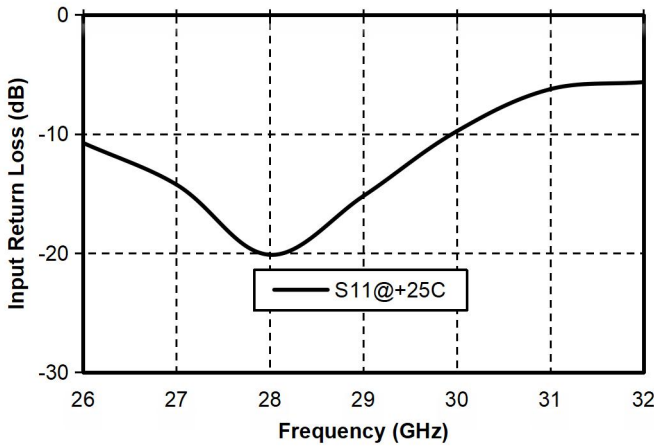
Gain vs. Frequency



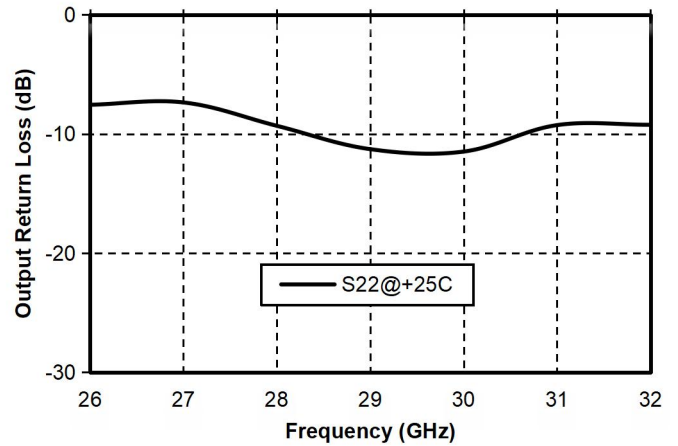
Reverse Isolation vs. Frequency



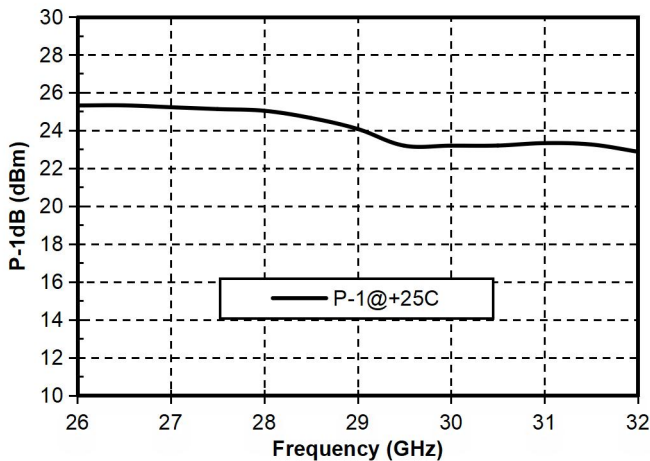
Input Return Loss vs. Frequency



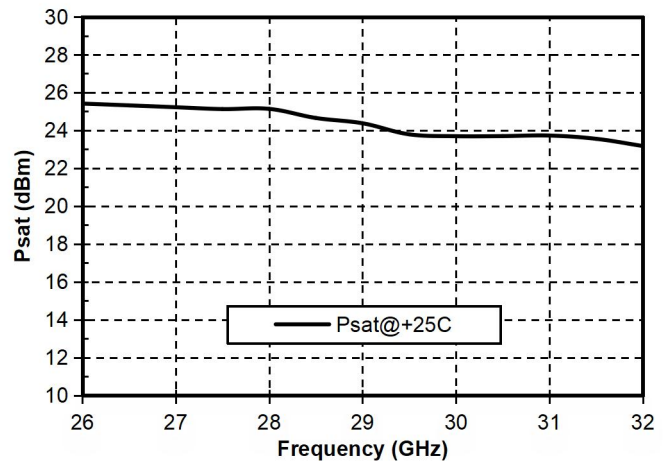
Output Return Loss vs. Frequency



P-1dB vs. Frequency

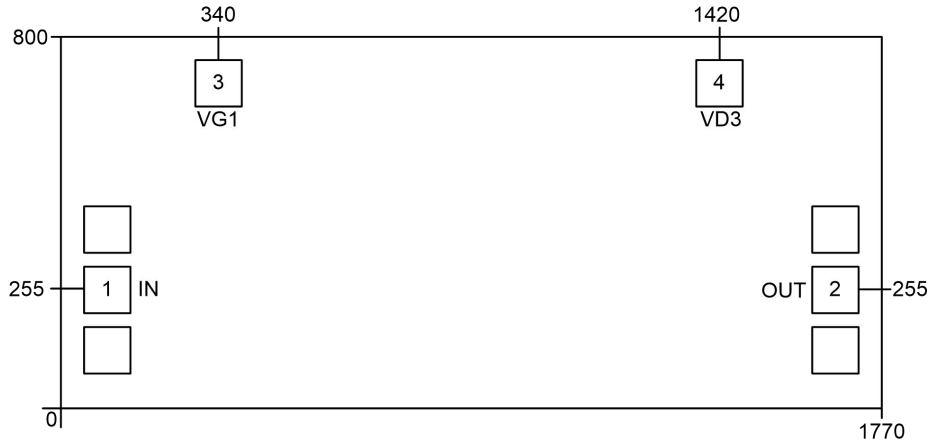


Psat vs. Frequency



## GaAs MMIC Power Amplifier Chip, 27-31GHz

### Appearance structure <sup>2</sup>



【 2 】 All units in the figure are micrometers

### 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	VG1	Amplifier gate bias, external 100 pF, 1000pF bypass capacitor required
4	V D	Amplifier drain bias, external 100 pF, 1000pF bypass capacitor required
Chip bottom	GND	needs to be in good contact with the RF and DC grounds

### Recommended assembly diagram

