



### Features

- Frequency: 13-17GHz
- Small Signal Gain: 32dB Typical
- Power Gain: 21dB Typical
- Gain Flatness:  $\pm 2.0$ dB Typical
- Psat: 43dBm CW Typical
- PAE:30%
- Supply Voltage:  
VD=+28V@0.7A, VG=-1.7V
- Input/Output: 50 $\Omega$
- Die Size: 4.55 x 2.75 x 0.1mm

### Typical Applications

- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

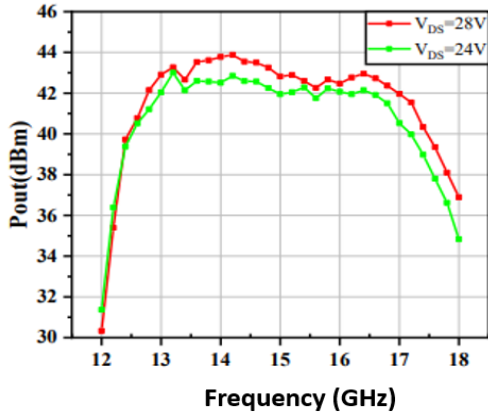
### Electrical Specifications

TA = +25°C, VD=+28V, IDD =0.7A Typical

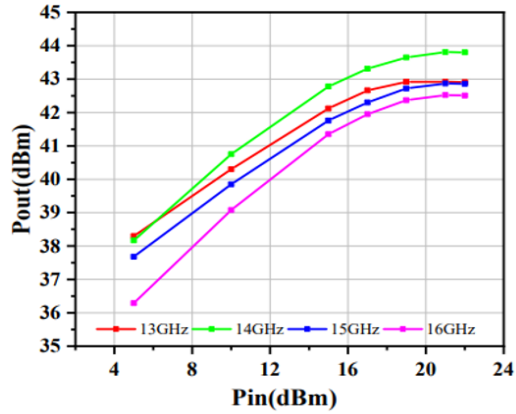
Parameters	Min.	Typ.	Max.	Units
Frequency	13		17	GHz
Small Signal Gain		32		dB
Power Gain		21		dB
Gain Flatness		$\pm 2.0$		dB
P1dB - Output 1dB Compression		/		dBm
Psat - Saturated Output Power (Pin = 25dBm)	14GHz	43.5		dBm
	15GHz	42.9		dBm
	16GHz	42.6		dBm
PAE-Power Added Efficiency (Pin = 25dBm)	14GHz	40		%
	15GHz	32		%
	16GHz	29		%
Input Return Loss		-15		dB
Output Return Loss		-15		dB



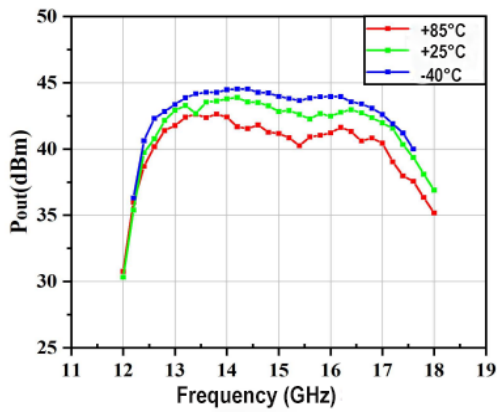
### Pout vs. Frequency



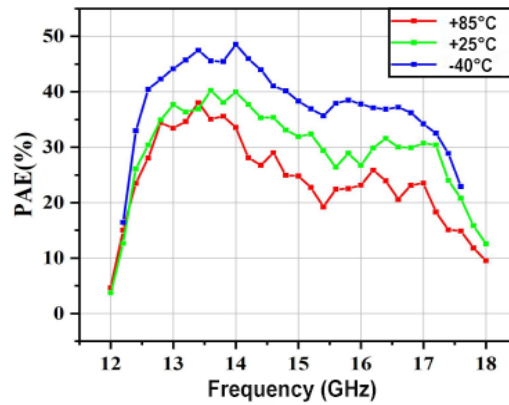
### Pout vs. Pin



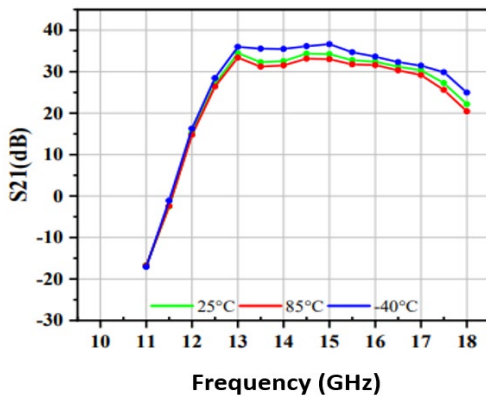
### Full temperature Pout



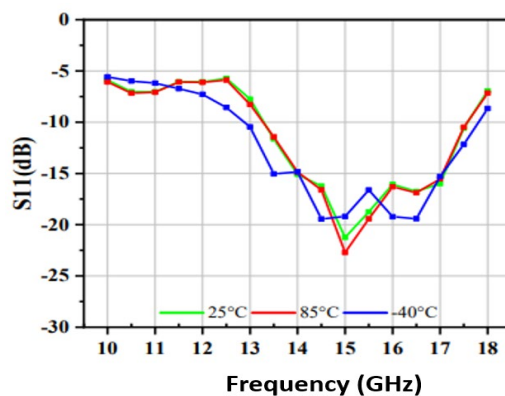
### Full temperature PAE



### Gain vs. Frequency

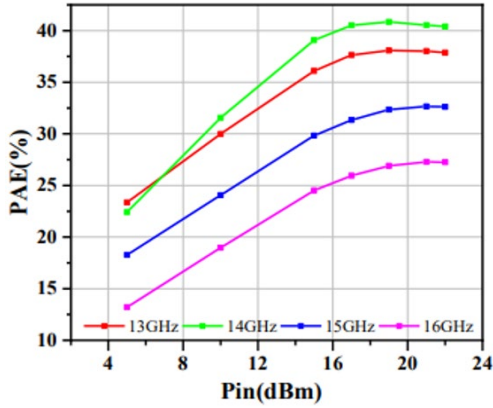


### Input Return Loss vs. Frequency

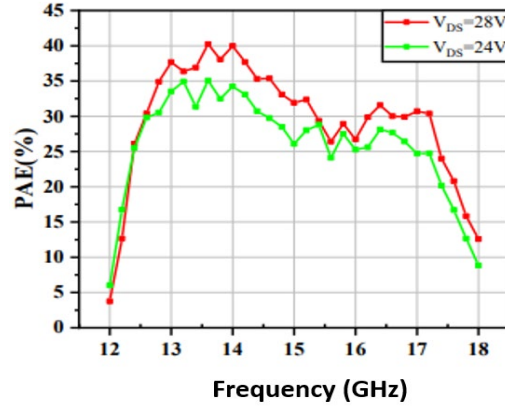




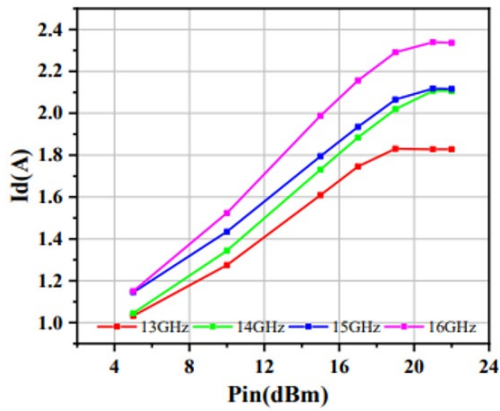
### PAE vs. Pin



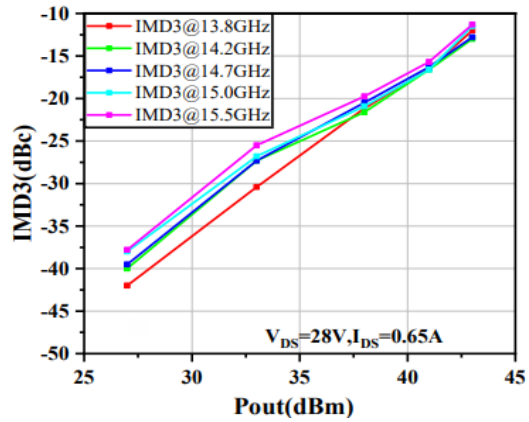
### PAE vs. Frequency



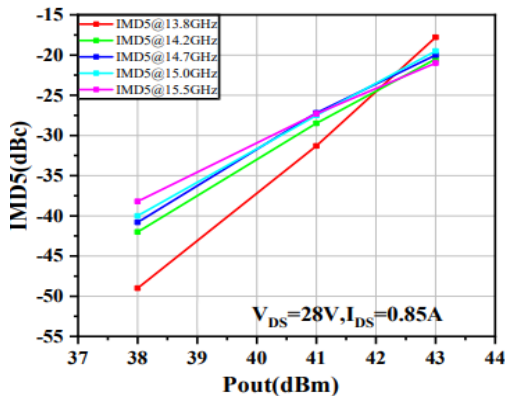
### Current vs. Pin



### IMD3 vs. Pout



### IMD5 vs. Pout



**Absolute Maximum Ratings**

Drain Bias Voltage (VD)	+30V
Gate Bias Voltages(VG)	-5 to 0 V
RF Input Power (RFIN)@(+28V)	+30dBm
Operating Temperature	-55°C to +85 °C
Storage Temperature	-55°C to +150 °C

**Typical Supply Current vs. VD,VG**

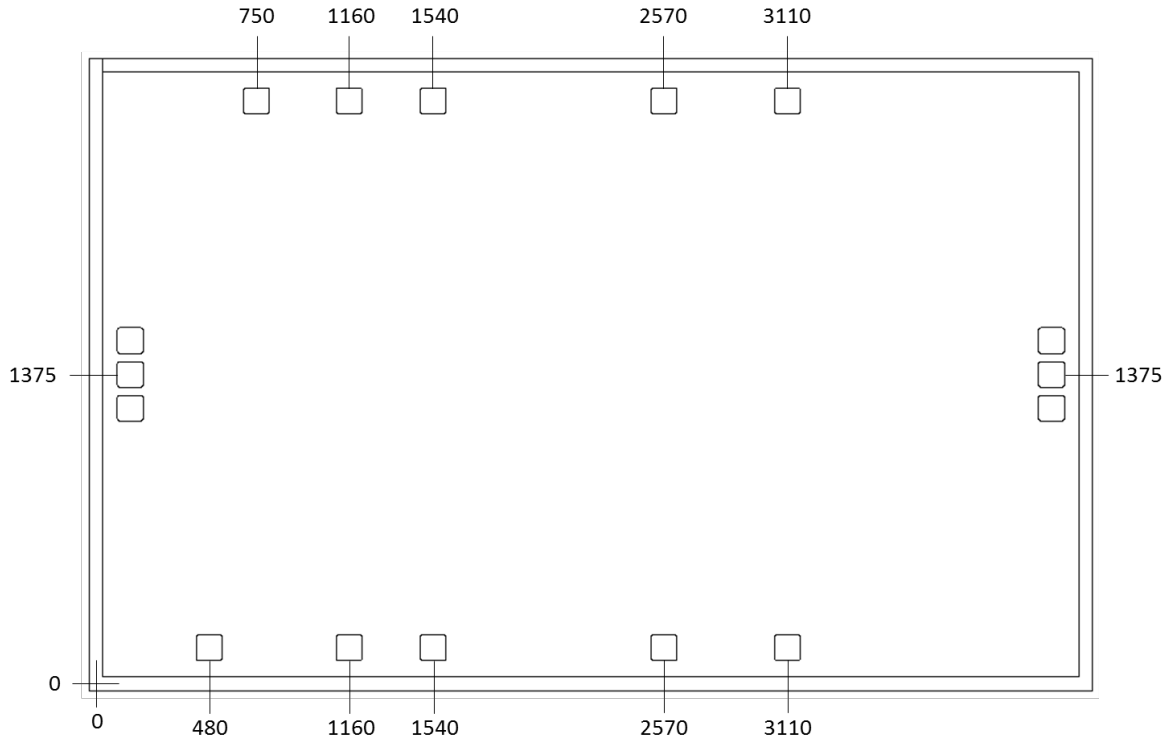
VD (V)	VG (V)	IDD (mA)
+28	-1.7	700



ELECTROSTATIC SENSITIVE DEVICE  
OBSERVE HANDLING PRECAUTIONS



**Outline Drawing:**  
All Dimensions in  $\mu\text{m}$

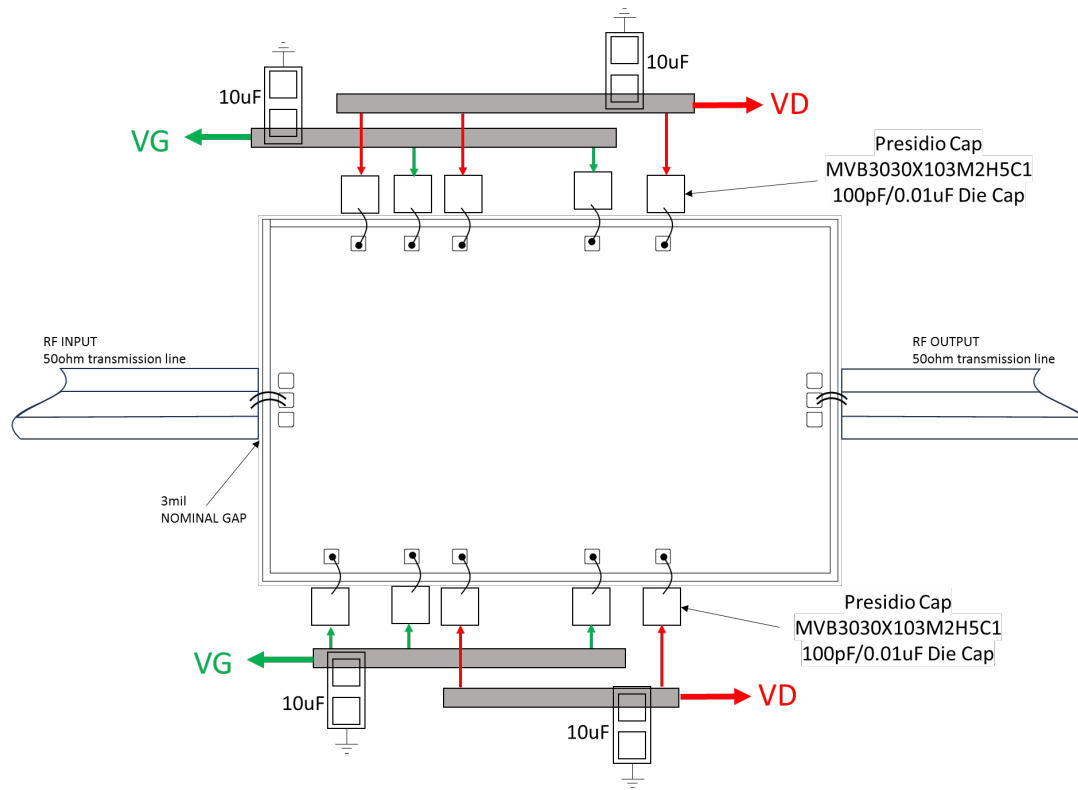


**Notes:**

1. Die size: 4550\*2750  $\mu\text{m}$
2. RF Pad size : 100\*100  $\mu\text{m}$
3. VD、VG pad size : 100\*100  $\mu\text{m}$
4. GSG: 150\*150  $\mu\text{m}$
5. Bond pad metalization: Gold
6. Backside metalization: Gold



### Assembly Drawing



No.	Mnemonic	Description
1	RF IN	Signal input terminal, connected to 50Ω circuit.
2	RF OUT	Signal output terminal, connected to 50Ω circuit.
3	VD	Drain voltage, bias network is required; see Application Circuit on.
4	VG	Gate voltage, bias network is required; see Application Circuit on.
5	Die Bottom	Die bottom must be connected to RF and dc ground.



# MILLER

MMIC

V1.0.0

## MMGP527

GaN MMIC Power Amplifier  
13-17GHz

MMGP527

GaN Power Amplifier MMIC 13-17GHz

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