



### Features

- Frequency: 6-18GHz
- Small Signal Gain: 28dB Typical
- Power Gain: 15dB Typical
- Gain Flatness:  $\pm 4.0$ dB Typical
- Psat: 40dBm Typical
- PAE: 25%
- Supply Voltage:  
VD=+28V@0.85A, VG=-1.6V
- Input/Output: 50 $\Omega$
- Die Size: 4.2 x 3.15 x 0.1mm

### Typical Applications

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

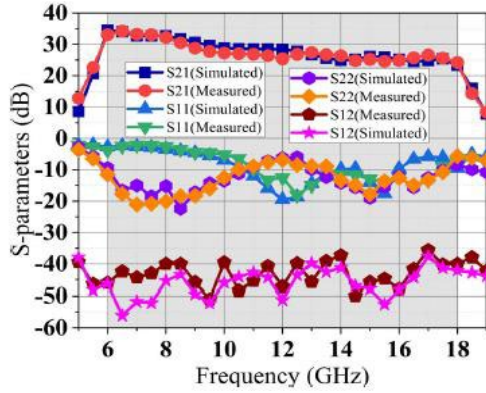
### Electrical Specifications

TA = +25°C, VD=+28V, IDD =0.85A Typical

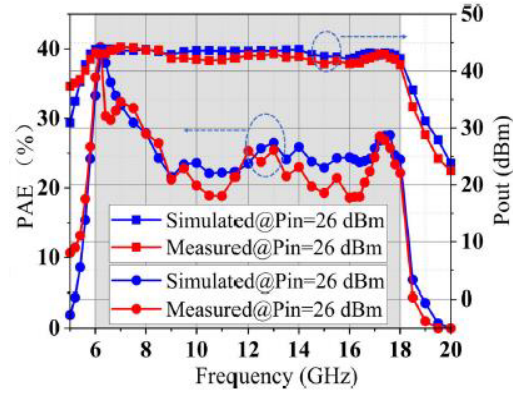
| Parameters                    | Min. | Typ.      | Max. | Units |
|-------------------------------|------|-----------|------|-------|
| Frequency                     | 6    |           | 18   | GHz   |
| Small Signal Gain             |      | 28        |      | dB    |
| Power Gain                    |      | 15        |      | dB    |
| Gain Flatness                 |      | $\pm 4.0$ |      | dB    |
| P1dB - Output 1dB Compression |      | /         |      | dBm   |
| Psat - Saturated Output Power |      | 40        |      | dBm   |
| PAE-Power Added Efficiency    |      | 25        |      | %     |
| Input Return Loss             |      | -8        |      | dB    |
| Output Return Loss            |      | -8        |      | dB    |



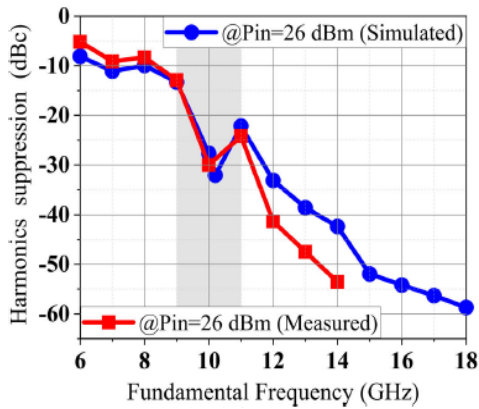
### S-parameters vs. Frequency



### PAE vs. Frequency



### Harmonics Suppression



**Absolute Maximum Ratings**

|                              |                  |
|------------------------------|------------------|
| Drain Bias Voltage (VD)      | +30V             |
| Gate Bias Voltages(VG)       | -5V              |
| RF Input Power (RFIN)@(+28V) | +30dBm           |
| Channel Temperature          | 225 °C           |
| Junction Temperature         | 310 °C           |
| Operating Temperature        | -55°C to +85 °C  |
| Storage Temperature          | -55°C to +175 °C |

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

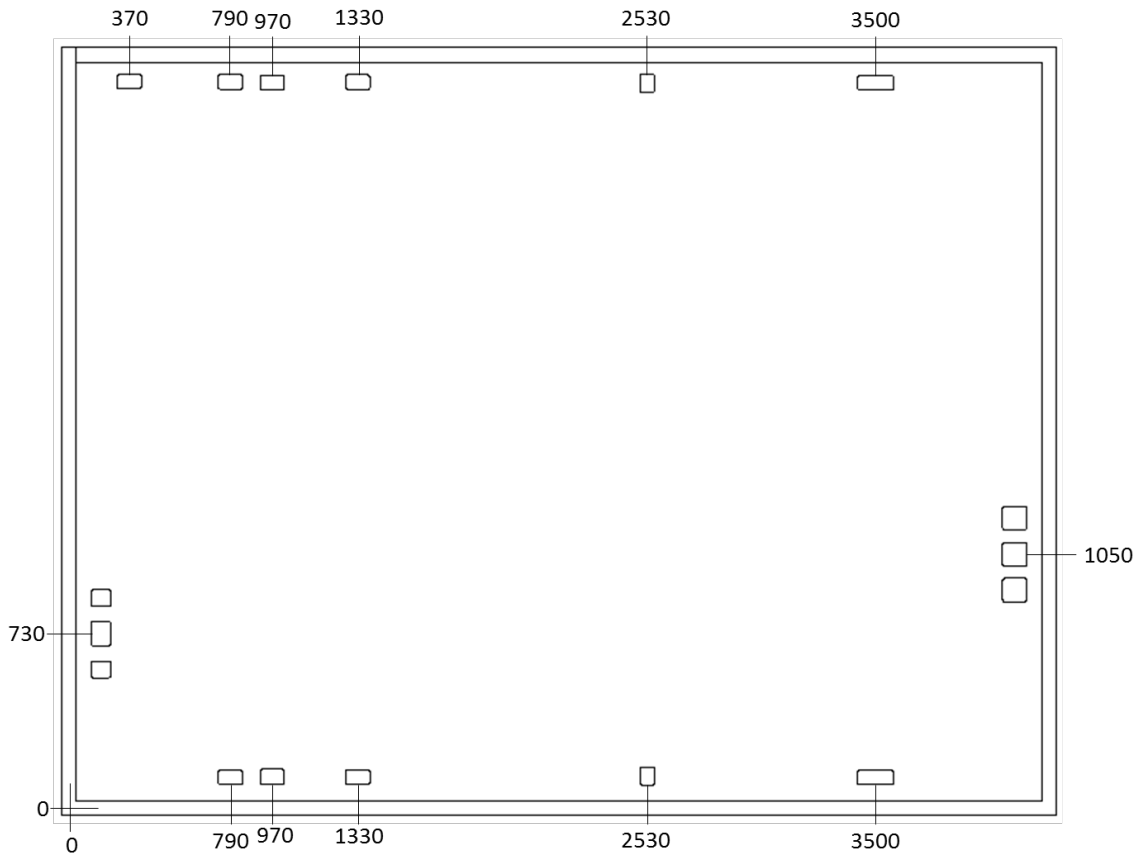
| VD (V) | VG (V) | IDD (mA) |
|--------|--------|----------|
| +28    | -1.6   | 850      |



ELECTROSTATIC SENSITIVE DEVICE  
OBSERVE HANDLING PRECAUTIONS



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

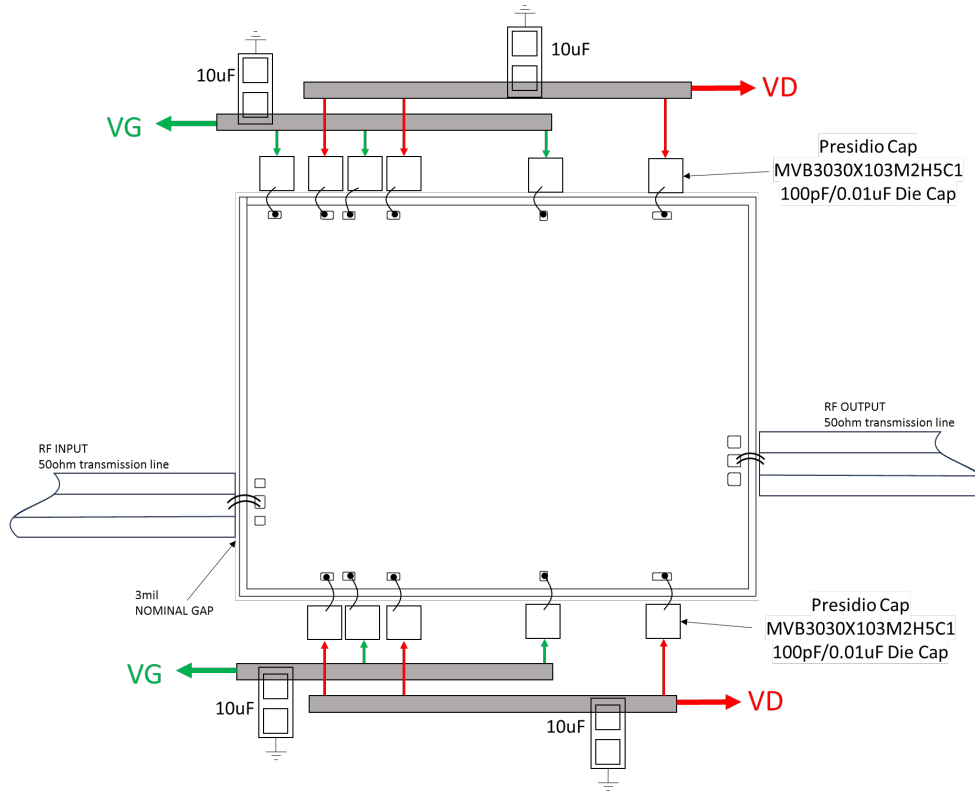


**Notes:**

1. Die size: 4200\*3150  $\mu\text{m}$
2. Input RF Pad size : 100\*85  $\mu\text{m}$
3. Output RF Pad size: 100\*100  $\mu\text{m}$
4. VG1,2 pad size : 100\*62  $\mu\text{m}$
5. VD1,2 pad size : 100\*62  $\mu\text{m}$
6. VG3 pad size : 63\*75  $\mu\text{m}$
7. VD3 pad size : 150\*62  $\mu\text{m}$
8. GSG: 150  $\mu\text{m}$
9. Bond pad metalization: Gold
10. 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.                    |



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