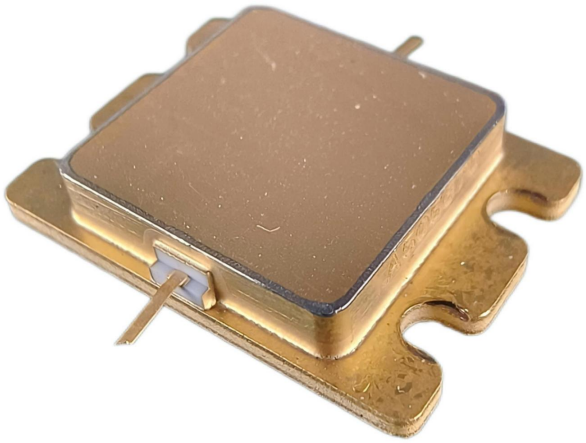
# MCNI1214-P51

## L-Band Internally Matched GaN Device

## Key Features

- Operating Frequency: 1.20–1.40 GHz
- Saturated Output Power (Psat): ≥51.0dBm
- Power Gain(Gp): ≥13.0 dB
- Work Efficiency (η): ≥50%
- Port Matching: Zin/Zout = 50 Ω



## Product Description

The MCNI1214-P51 is an internal matching GaN device, which adopts advanced co-planar internal matching MCM and thin film circuit technology. The typical working frequency range is 1.20–1.40 GHz.
This device can be used in different RF/Microwave system and subsystem. The high output power level, high efficiency and wide operating temperature range can make application very flexible.

## Absolute Maximum Ratings（Tc=25℃）

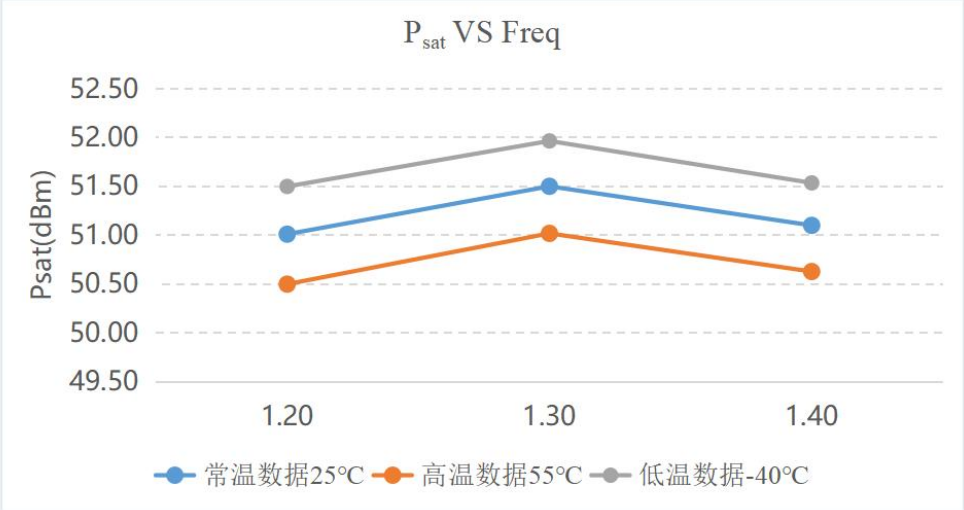
| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | 40 | V |
| Gate-Source Voltage | $V_{GS}$ | -5 | V |
| Storage Temperature | $T_{stg}$ | -65 ~ +150 | ℃ |
| Channel Temperature | $T_{ch}$ | 150 | ℃ |

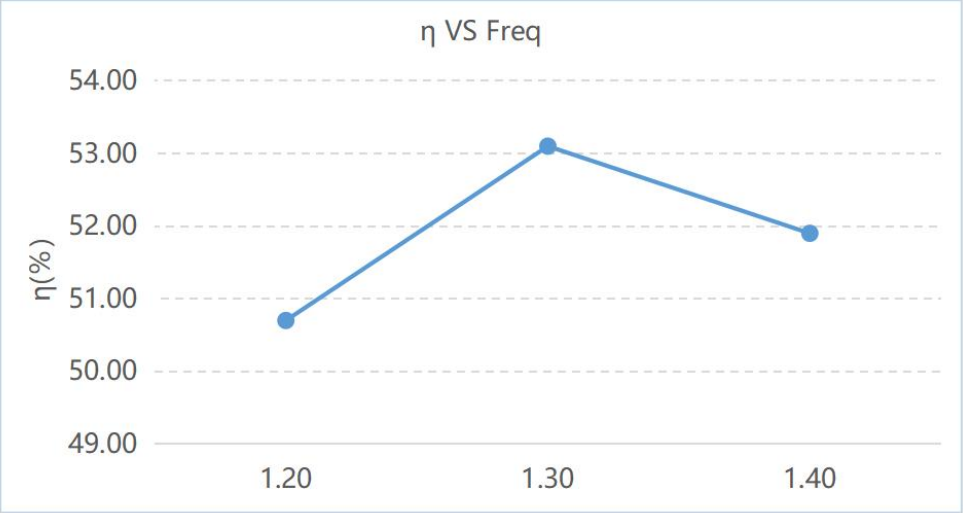
***Not recommended to work under these conditions.**

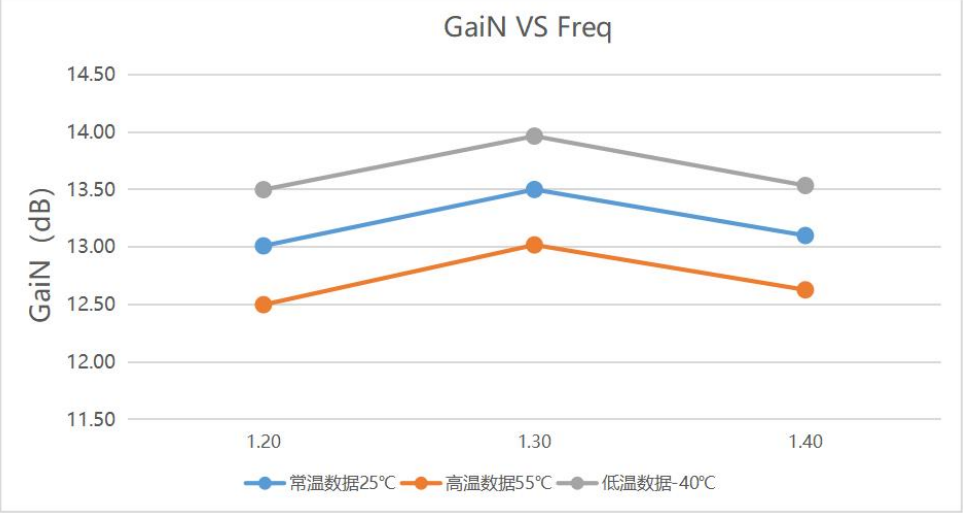
## Microwave Electrical Characteristics

| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Drain Current | $I_{dsr}$ | VDS:32V<br>CW<br>Pin：38dBm<br>Freq：1.2~1.4GHZ | - | 7.9 | - | A |
| Saturated Output Power | $P_{sat}$ | | 51 | - | - | dBm |
| Power Gain | $G_p$ | | 13 | - | - | dB |
| Work Efficiency | η | | 50 | - | - | % |
| Gain Flatness | ΔG | | -0.8 | - | 0.8 | dB |

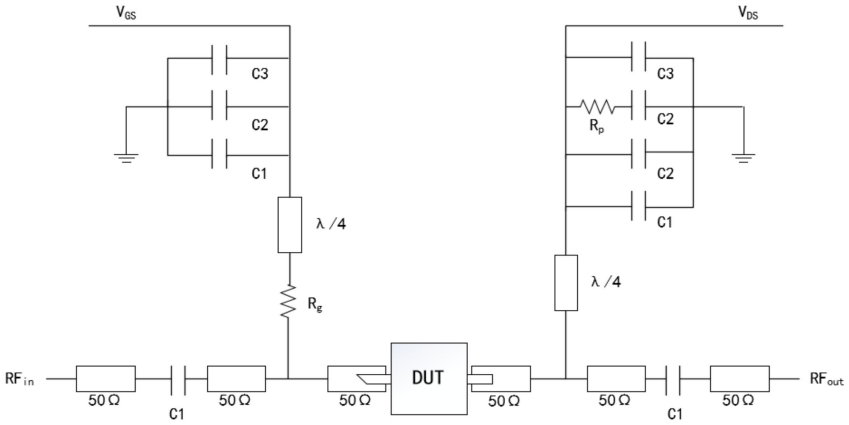
## Typical Curves



## Recommended Application Circuit



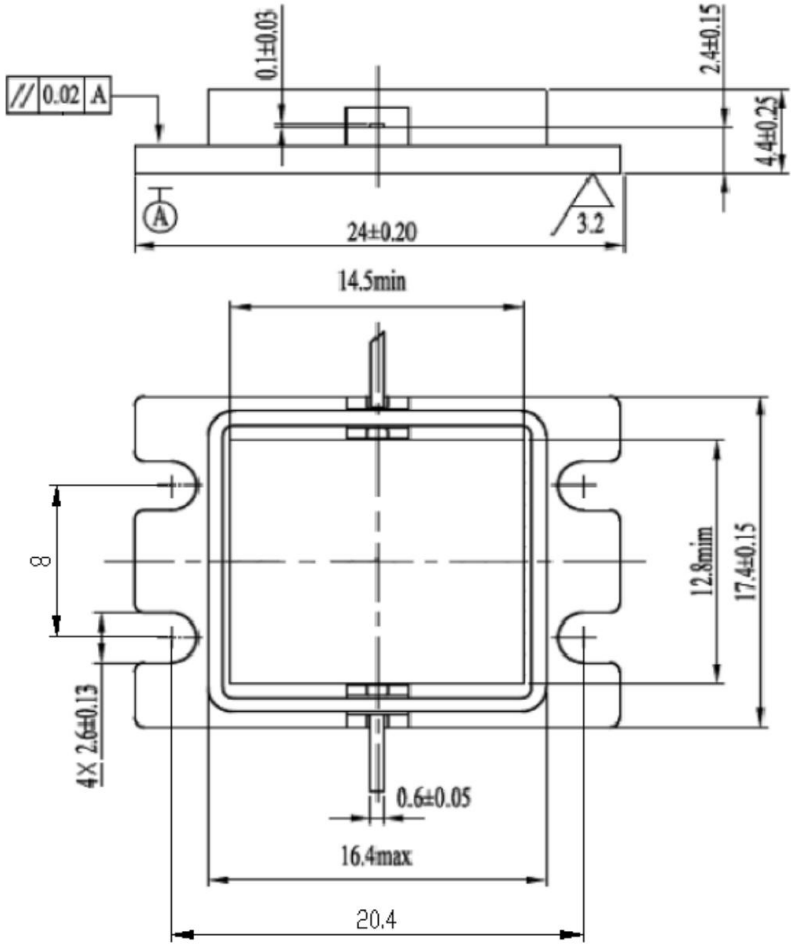

**DUT: Device Under Test**

C1:20pF
C2:1000pF
C3:100uF
Rp:51Ω
Rg:15Ω

## ESD Level

| | | |
|---|---|---|
| ESD | Class III | 2000V |

## Overall Dimensions




### Using Notes:

- During transportation and storage, ensure proper drying.
- During the use and assembly of the chip, take precautions against static electricity. Wear a grounded anti-static wristband.
- When powering on, apply gate voltage first, then apply leakage voltage.