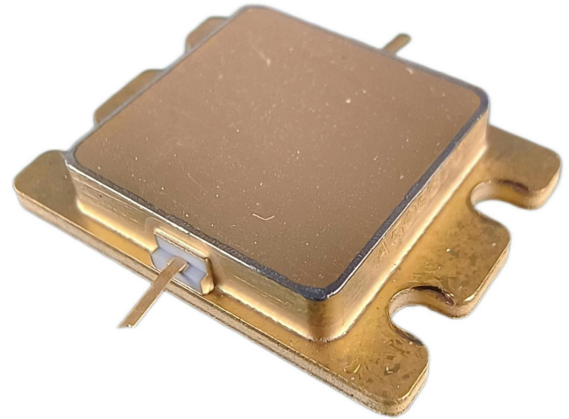


### Key Features

- Operating Frequency: 1.20–1.40 GHz
- Saturated Output Power ( $P_{sat}$ ):  $\geq 48.0\text{dBm}$
- Power Gain( $G_p$ ):  $\geq 13.0\text{dB}$
- Work Efficiency ( $\eta$ ):  $\geq 50\%$
- Port Matching:  $Z_{in}/Z_{out} = 50\ \Omega$



### Product Description

The MCNI1214-P48 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 ( $T_c=25^\circ\text{C}$ )

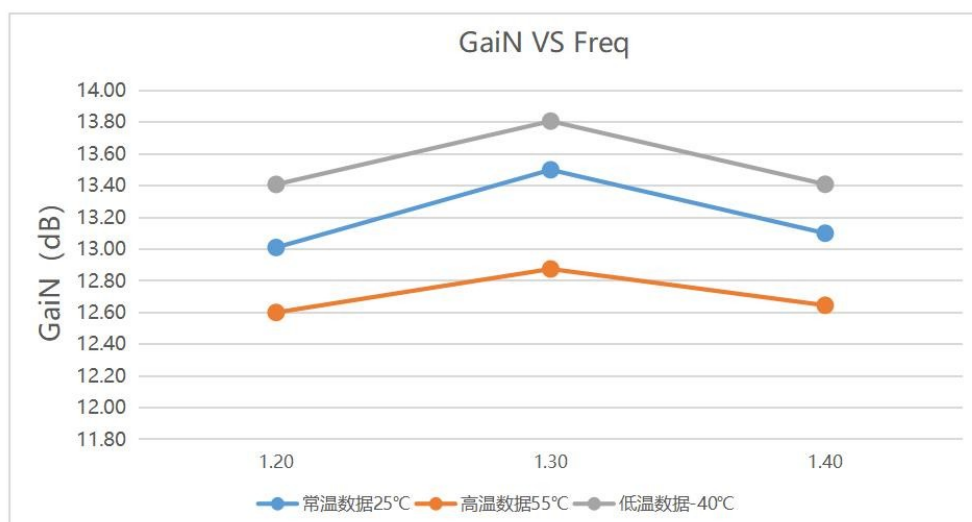
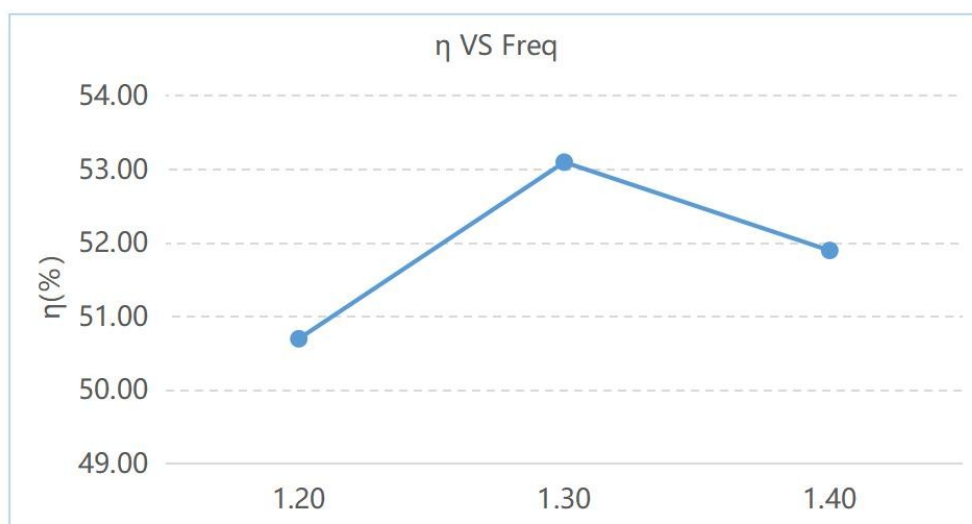
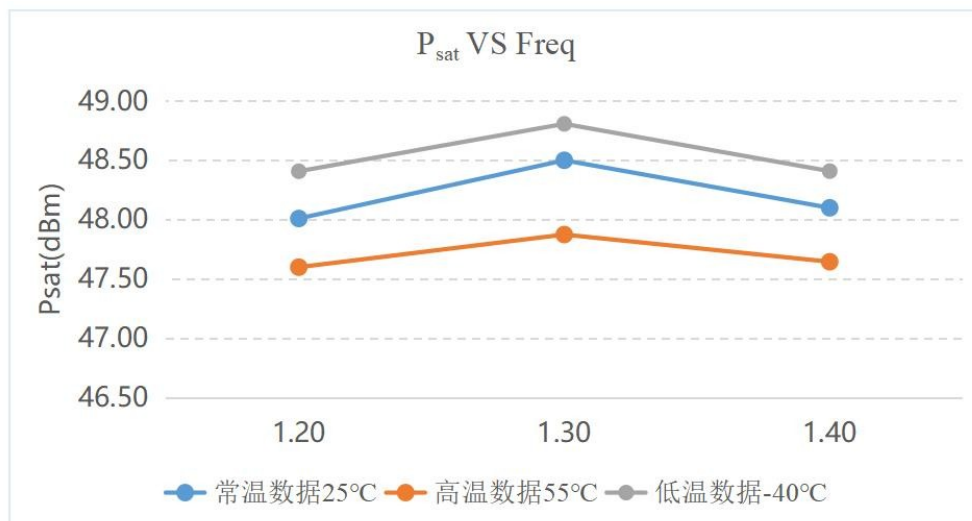
Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	40	V
Gate-Source Voltage	$V_{GS}$	-5	V
Storage Temperature	$T_{stg}$	-65 ~ +150	$^\circ\text{C}$
Channel Temperature	$T_{ch}$	150	$^\circ\text{C}$

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

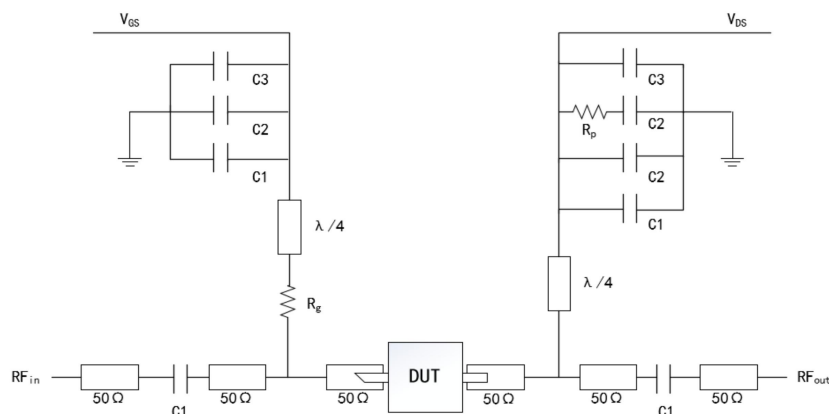
### Microwave Electrical Characteristics

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Drain Current	$I_{dsr}$	$V_{DS}: 32\text{V}$ CW $P_{in}: 35\text{dBm}$ Freq: 1.2~1.4GHz	-	3.9	-	A
Saturated Output Power	$P_{sat}$		48	-	-	dBm
Power Gain	$G_p$		13	-	-	dB
Work Efficiency	$\eta$		50	-	-	%
Gain Flatness	$\Delta G$		-0.8	-	0.8	dB

## Typical Curves



### Recommended Application Circuit



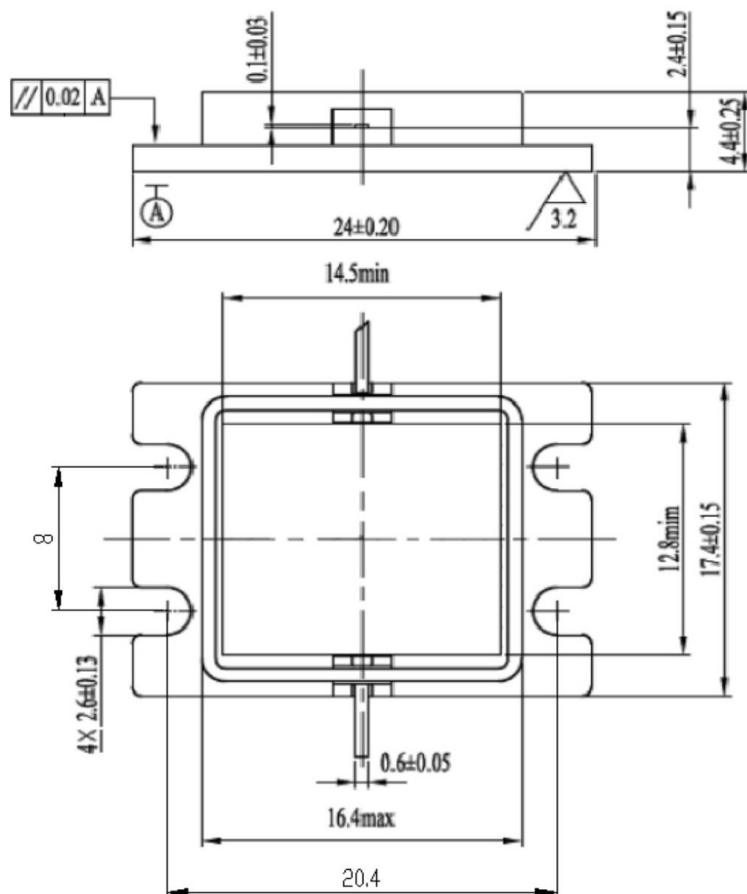
#### DUT: Device Under Test

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

### ESD Level

ESD	Class III	2000V
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### 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.