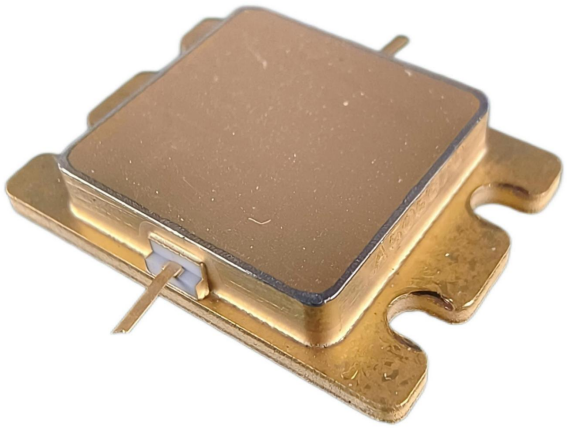
MCNI90100-P47

X-Band Internally Matched GaN Device

Key Features

- Operating Frequency: 9.00-10.00 GHz
- Saturated Output Power (Psat): ≥ 47 dBm
- Power Gain(Gp): ≥ 7 dB
- Work Efficiency (η): ≥ 30%
- Port Matching: Zin/Zout = 50 Ω



Product Description

The MCNI90100-P47 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 9.00-10.00GHz.
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°C）

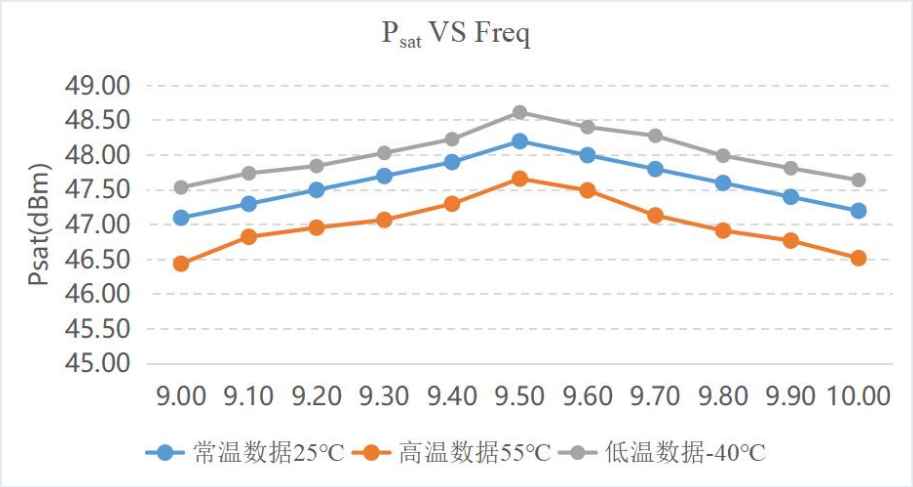
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	40	V
Gate-Source Voltage	V_{GS}	-5	V
Storage Temperature	T_{stg}	-65 ~ +150	℃
Channel Temperature	T_{ch}	150	℃

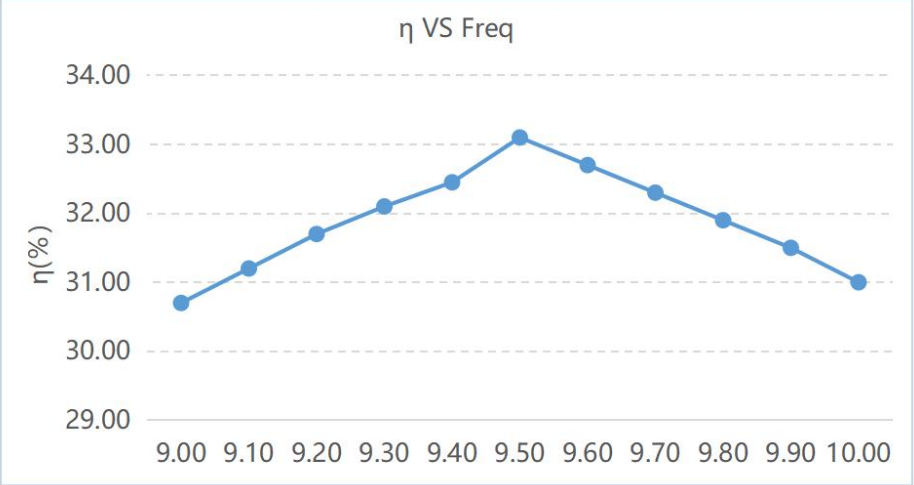
***Not recommended to work under these conditions.**

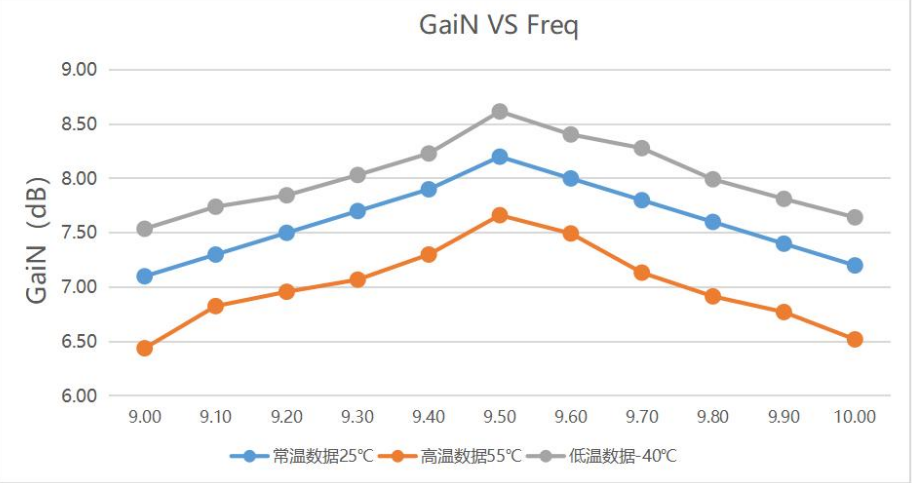
Microwave Electrical Characteristics

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Drain Current	I_{dsr}	VDS:28V CW Pin：40dBm Freq：9~10GHZ	-	6	-	A
Saturated Output Power	P_{sat}		47	-	-	dBm
Power Gain	G_p		7	-	-	dB
Work Efficiency	η		30	-	-	%
Gain Flatness	ΔG		-0.8	-	0.8	dB

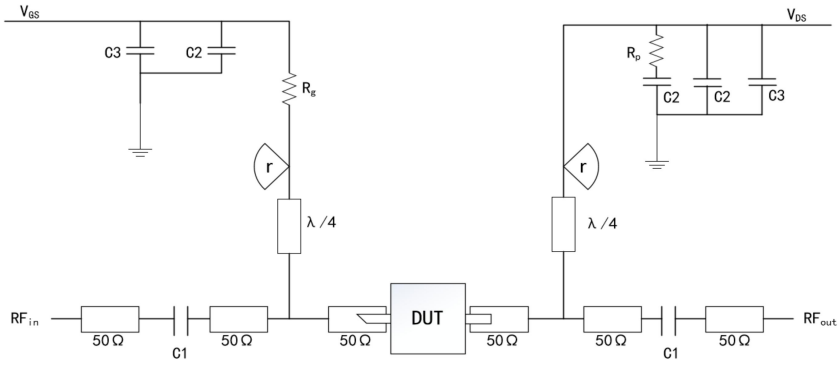
Typical Curves







Recommended Application Circuit



DUT: Device Under Test

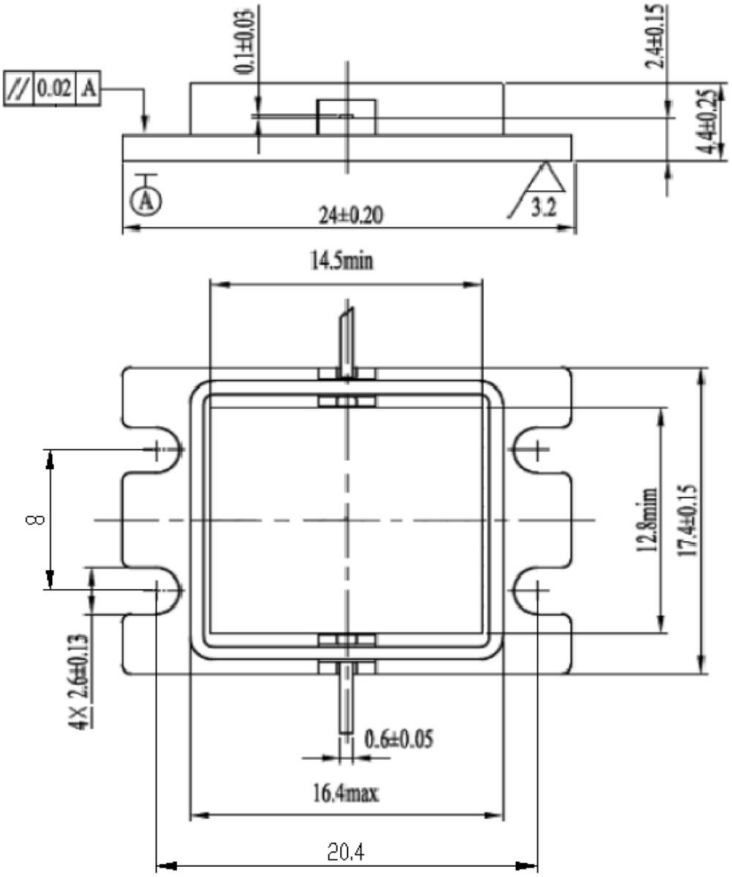
C1:1pF	Rp:51Ω
C2:1000pF	Rg:15Ω
C3:100uF	

Radius ≈ 3.5mm (Rogers 5880, 20 mil)

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.