

■ Features

- High Output Power: $P_{sat}=51.3\text{dBm}$ (typ.)
- High Gain: $G_p=12.3\text{dB}$ (typ.)
- High Efficiency: $PAE=43\%$ (typ.)
- Impedance Matched $Z_{in}/Z_{out} = 50\text{ohm}$
- Hermetically Sealed Package

■ Description

The SGC7172-120A is a high power GaN-HEMT that is internally matched for C-band applications to provide optimum power and gain in a 50ohm system.



ABSOLUTE MAXIMUM RATING (Case Temperature $T_c=25\text{ deg.C}$)

Item	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	55	V
Gate-Source Voltage	V_{GS}	-15	V
Storage Temperature	T_{sta}	-55 to +125	deg.C
Channel Temperature	T_{ch}	+250	deg.C

RECOMMENDED OPERATING CONDITION

Item	Symbol	Condition	Limit	Unit
Drain-Source Voltage	V_{DS}		≤ 50	V
Forward Gate Current	I_{GF}	$R_g=51\text{ohm}$	≤ 89.8	mA
Reverse Gate Current	I_{GR}	$R_g=51\text{ohm}$	≥ -8	mA
Channel Temperature	T_{ch}		$< +200$	deg.C

ELECTRICAL CHARACTERISTICS (Case Temperature $T_a=25\text{ deg.C}$)

Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Pinch-off Voltage	V_P	$V_{DS}=50\text{V}, I_{DS}=12\text{mA}$	-	-4.5	-	V
Frequency Range	Freq.	$V_{DS}=50\text{V},$ $I_{DS(DC)}=1.3\text{A},$ Freq.=7.14, 7.19, 7.24GHz, $P_{in}=39\text{dBm}, \text{CW}$	7.14	-	7.24	GHz
Output Power	P_{sat}		50.35	51.30	-	dBm
Power Gain	G_p		11.35	12.30	-	dB
Gain Flatness	ΔG		-	-	1.5	dB
Power Added Efficiency	PAE		38.5	43.0	-	%
3 rd Order Intermodulation Distortion	IM_3	$f=7.24\text{GHz}, \Delta f=10\text{MHz},$ 2-tone Test, $P_{out}=44.0\text{dBm(S.C.L.)}$	-	-33.0	-	dBc
Thermal Resistance	R_{th}	Channel to Case ($P_{diss}=65\text{W}$)	-	0.65	0.80	deg.C/W

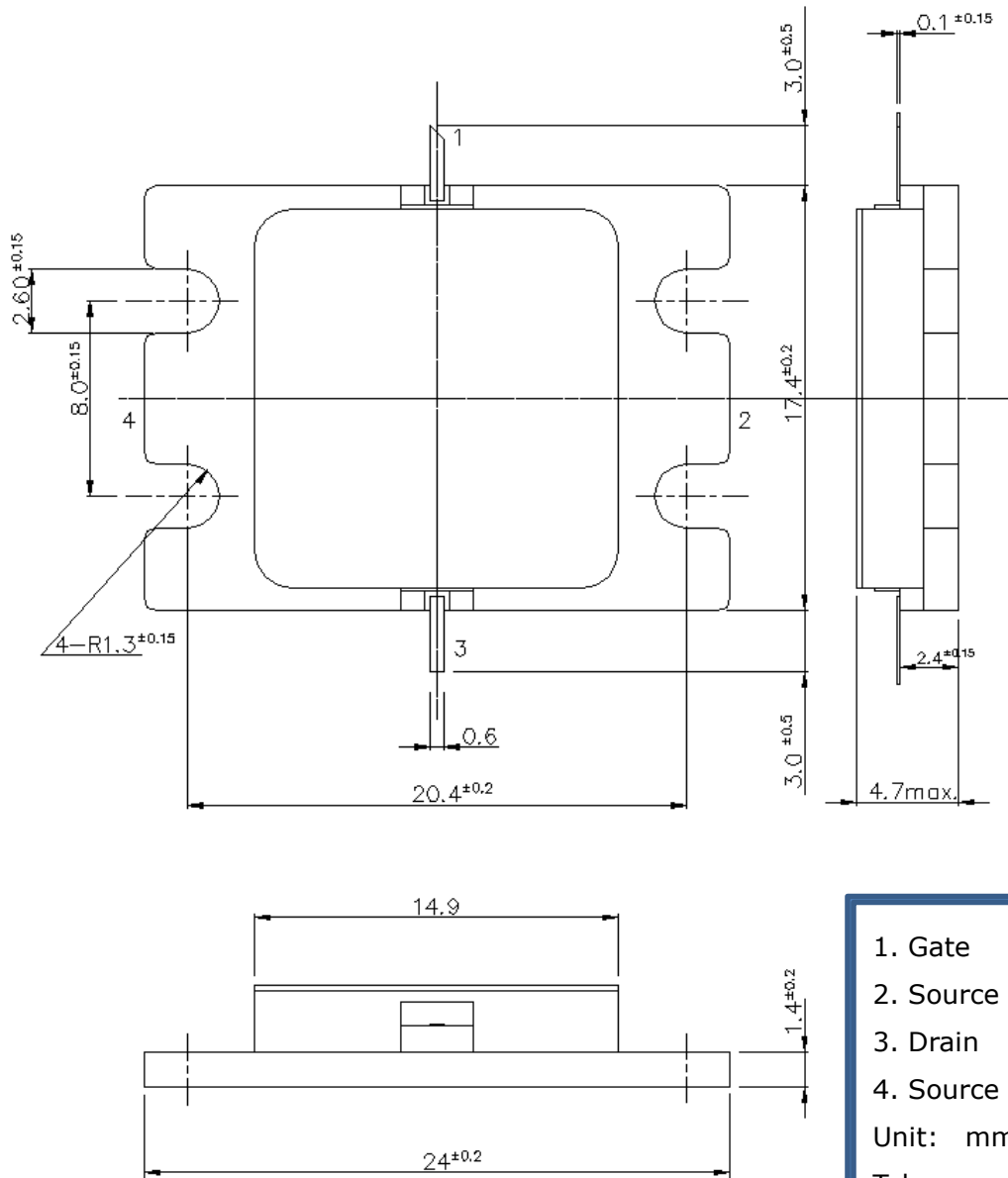
CASE STYLE	IK
RoHS Compliance	YES
ESD	Class 2

Note: Based on ANSI/ESDA/JEDEC JS-001-2012($C=100\text{pF}, R=1.5\text{kohm}$)



● **Package Outline**

Case Style: IK



1. Gate
2. Source
3. Drain
4. Source
Unit: mm
Tolerance: \pm 0.15

For Safety, Observe the Following Procedures Environmental Management

- Do not put this product into the mouth.
- Do not alter the form of this product into a gas, powder, or liquid through burning, crushing, or chemical processing as these by-products are dangerous to the human body if inhaled, ingested, or swallowed.
- Respect all applicable laws of the country when discarding this product.
This product must be disposed in accordance with methods specified by applicable hazardous waste procedures.

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