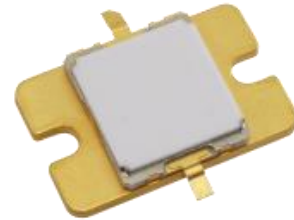


■ Features

- High Power: 150W(Typ.) @ Pin=7.9W(39dBm)
- High Efficiency: 63%(Typ.) @ Pin=7.9W(39dBm)
- Broad Band: 2.7 to 3.1GHz
- Pre-matched Input/Output
- Small Hermetically Sealed Package: I2D-Package



■ Description

Sumitomo GaN-HEMT SGN2731-120H-R offers high power, high efficiency and greater consistency for S-band radar applications with 50V operation. The low thermal resistance allows to use long pulse up to 5msec pulse width with duty of 10%.

ABSOLUTE MAXIMUM RATING (Case Temperature $T_c=25$ deg.C)

Item	Symbol	Rating	Unit
Operating Voltage	V_{DS}	55	V
Drain-Source Voltage	V_{DS}	250 @ $V_{GS}=10V$	V
Gate-Source Voltage	V_{GS}	-15	V
Storage Temperature	T_{stg}	-55 to +125	deg.C
Channel Temperature	T_{ch}	+250	deg.C

RECOMMENDED OPERATING CONDITION

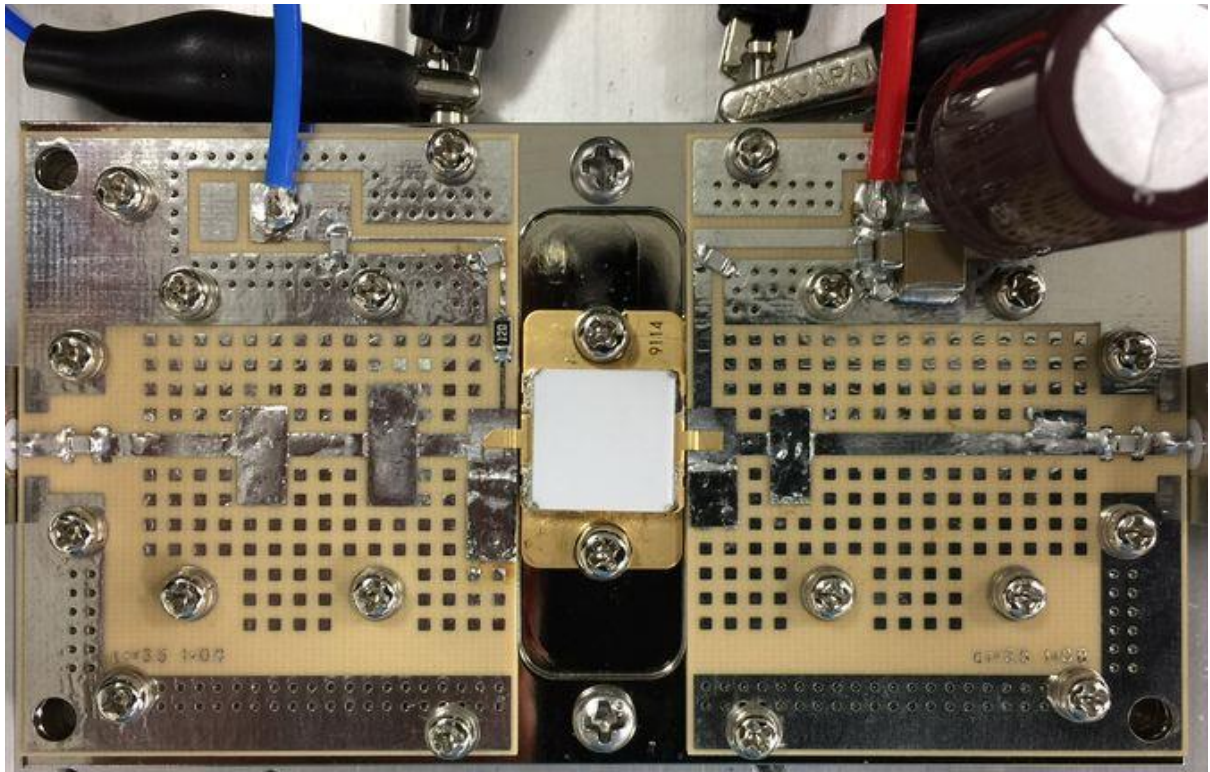
Item	Symbol	Condition	Limit	Unit
Drain-Source Voltage	V_{DS}		≤ 50	V
Forward Gate Current	I_{GF}	$R_g=12\Omega$	≤ 122	mA
Reverse Gate Current	I_{GR}	$R_g=12\Omega$	≥ -5.2	mA
Peak Channel Temperature	$T_{ch-peak}$		≤ 200	deg.C
Pulse Width	PW	Duty 10%	≤ 5000	μ sec
		Duty 25%	≤ 1000	μ sec

ELECTRICAL CHARACTERISTICS (Case Temperature $T_c=25$ deg.C)

Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Pinch-off Voltage	V_P	$V_{DS}=50V, I_{DS}=36mA$	-4.0	-3.0	-2.0	V
Output Power	P_{out}	$V_{DS}=50V, I_{DS(DC)}=500mA,$ Pin=7.9W(39dBm), $f=2.7, 2.8, 2.9, 3.0, 3.1GHz,$ PW=200 μ sec, Duty=10%	50.8	51.8	-	dBm
Drain Efficiency	DE		-	63.0	-	%
Power Gain	G_p		11.8	12.8	-	dB
Gain Flatness	GF		-	1.0	1.5	%
Load Mismatch Ruggedness	VSWR		10:1	-	-	dB
Thermal Resistance	R_{th}	Channel to Case at 45W P_{DC}	-	1.1	1.3	deg.C/W

CASE STYLE	I2D
RoHS Compliance	YES

■ Evaluation Board (2.7-3.1GHz Application)

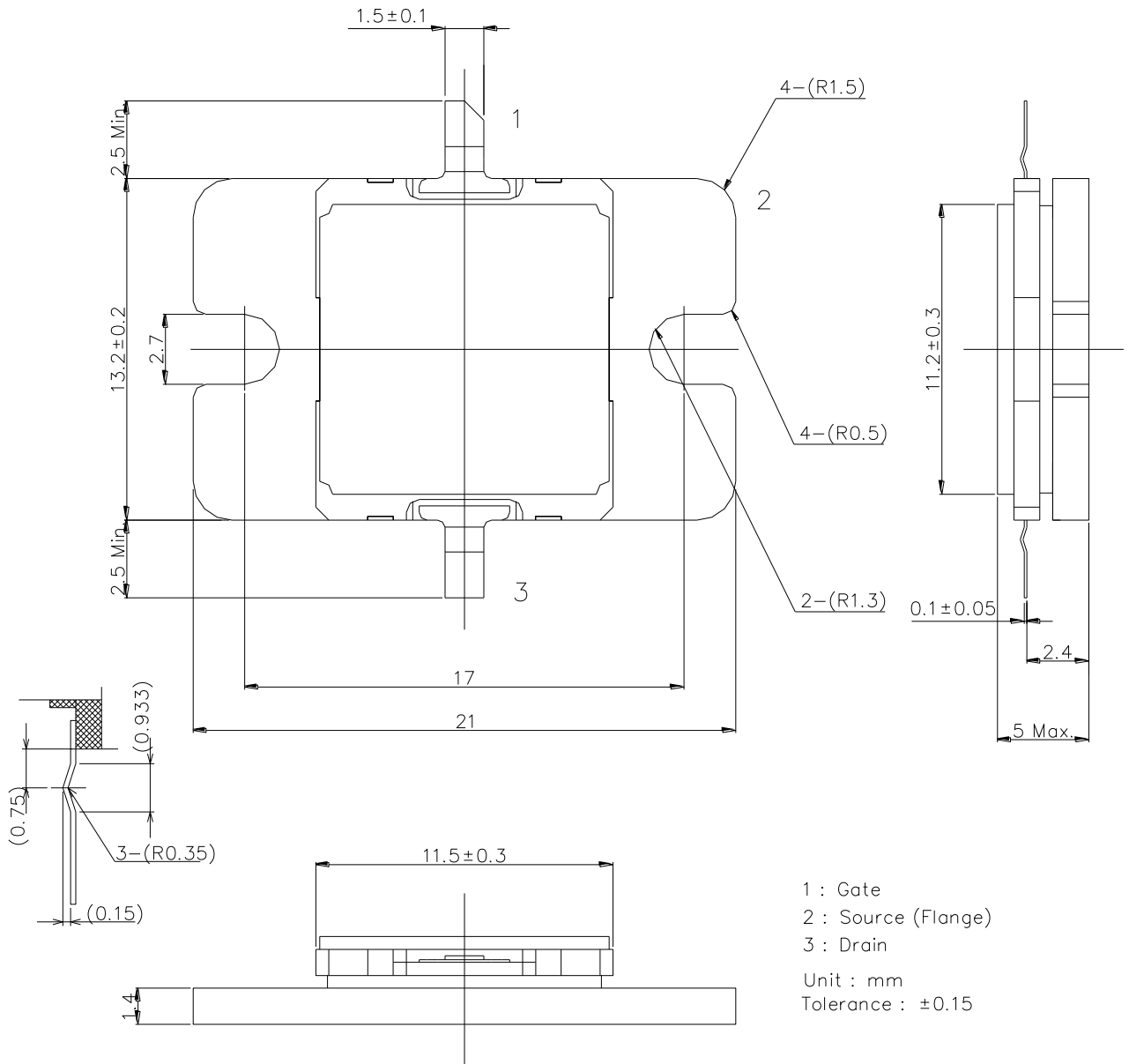


PCB : $h=0.8\text{mm}$, $\epsilon_r=3.5$, $\text{Cu}=18\mu\text{m}$



■ **Package Outline**

Case Style: I2D



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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