

■ Features

- High Power: 350W(Typ.) @ Pin=12.6W(41dBm)
- High Efficiency: 62%(Typ.) @ Pin=12.6W(41dBm)
- Broad Band: 2.7 to 3.2GHz
- Impedance Matched $Z_{in}/Z_{out} = 50 \text{ ohm}$
- Hermetically Sealed Package


■ Description

Sumitomo Electric's GaN-HEMT SGN2732-300L-R offers high power, high efficiency and greater consistency covering 2.7 to 3.2 GHz for S-band radar applications with 50V operation.

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_{stg}	-55 to +125	deg.C
Channel Temperature	T_{ch}	+250	deg.C

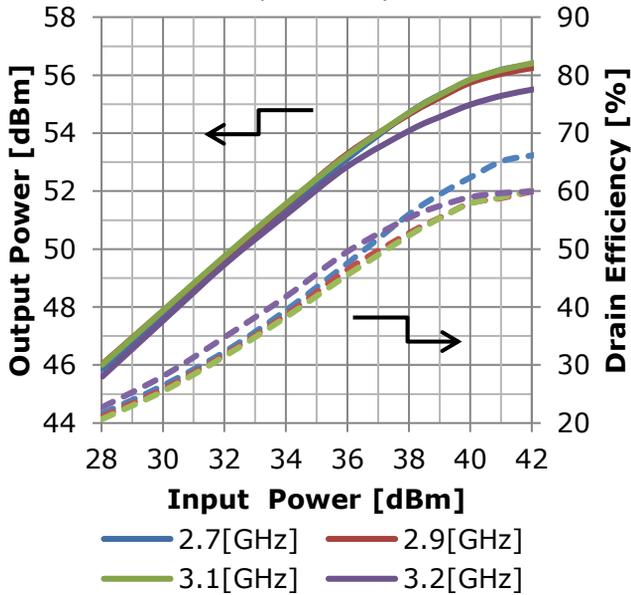
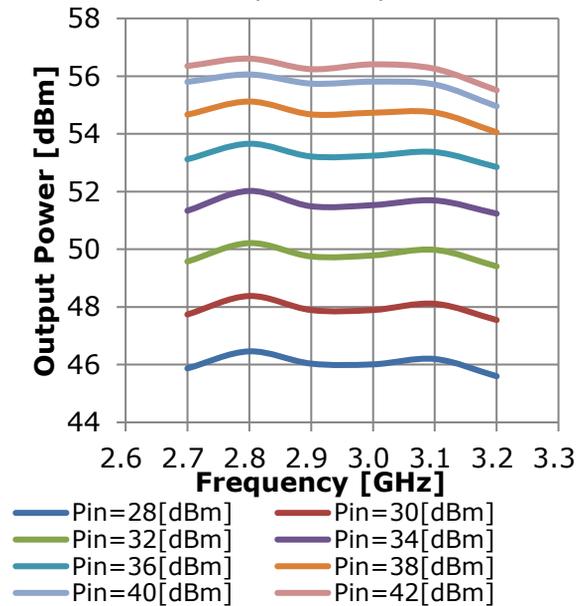
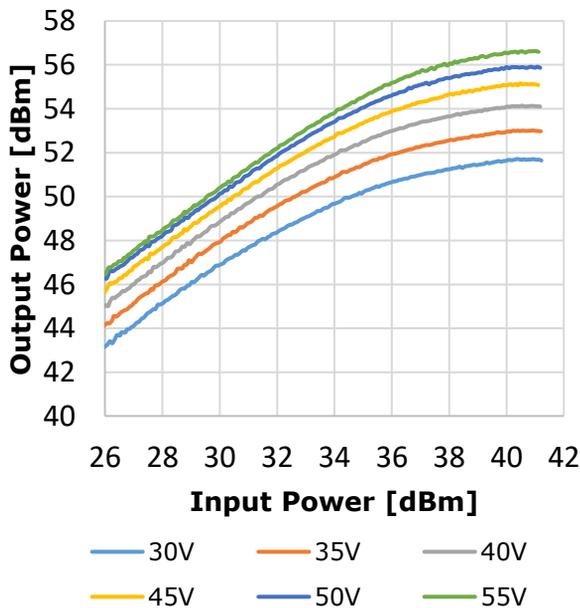
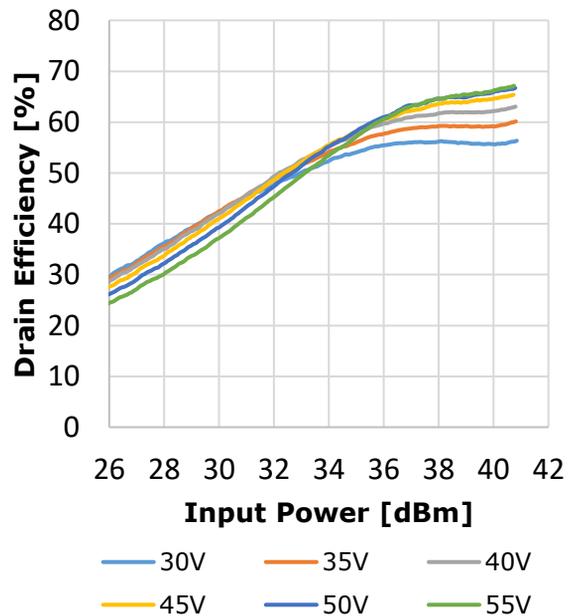
RECOMMENDED OPERATING CONDITION

Item	Symbol	Condition	Limit	Unit
Drain-Source Voltage	V_{DS}		≤ 50	V
Forward Gate Current	I_{GF}	$R_g=5.1 \text{ ohm}$	≤ 152	mA
Reverse Gate Current	I_{GR}	$R_g=5.1 \text{ ohm}$	≥ -6.9	mA
Channel Temperature	T_{ch}		$< +200$	deg.C
Output Power	P_{out}		$\leq P5dB$	dBm

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

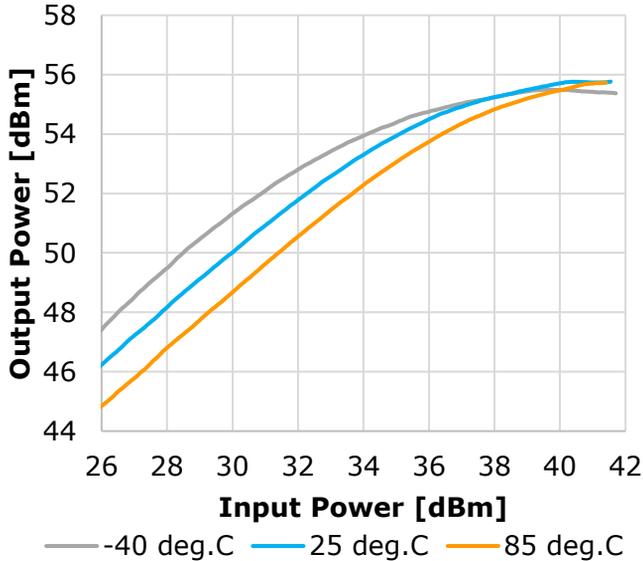
Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Pinch-off Voltage	V_p	$V_{DS}=50V, I_{DS}=62.5mA$	-3.45	-3.00	-2.45	V
Frequency Range	Freq.	$V_{DS}=50V\text{-typ.}$ $I_{DS(DC)}=1.0A\text{-typ.}$ Pulse Width=200 μ sec. Duty=10% Pin=41dBm	2.7	-	3.2	GHz
Output Power	P_{sat}		54.5	55.5	-	dBm
Power Gain	G_p		13.5	14.5	-	dB
Drain Efficiency	DE		-	62.0	-	%
Load Mismatch Ruggedness	VSWR		-	10:1	-	-
Thermal Resistance	R_{th}		Channel to Case at 105W Pdc	-	1.1	1.25

CASE STYLE	IV
RoHS Compliance	YES

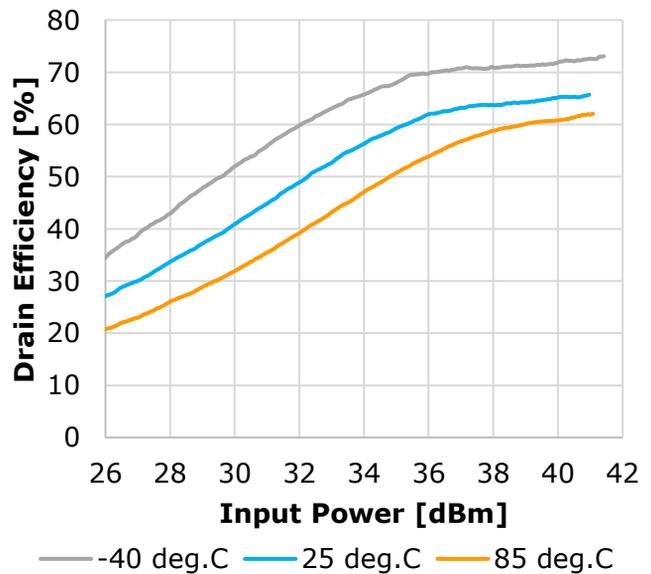
RF Characteristics
Output Power & Drain Efficiency vs. Input Power
 $V_{DS}=50V, I_{DS(DC)}=1.0A$
 $PW=200\mu sec., Duty=10\%$

Output Power vs. Frequency
 $V_{DS}=50V, I_{DS(DC)}=1.0A$
 $PW=200\mu sec., Duty=10\%$

Output Power vs. Input Power by Drain Voltage
 $f=2.9GHz, I_{DS(DC)}=1.0A$
 $PW=200\mu sec., Duty=10\%$

Drain Efficiency vs. Input Power by Drain Voltage
 $f=2.9GHz, I_{DS(DC)}=1.0A$
 $PW=200\mu sec., Duty=10\%$


RF Characteristics
**Output Power vs. Input Power
by case temperature**

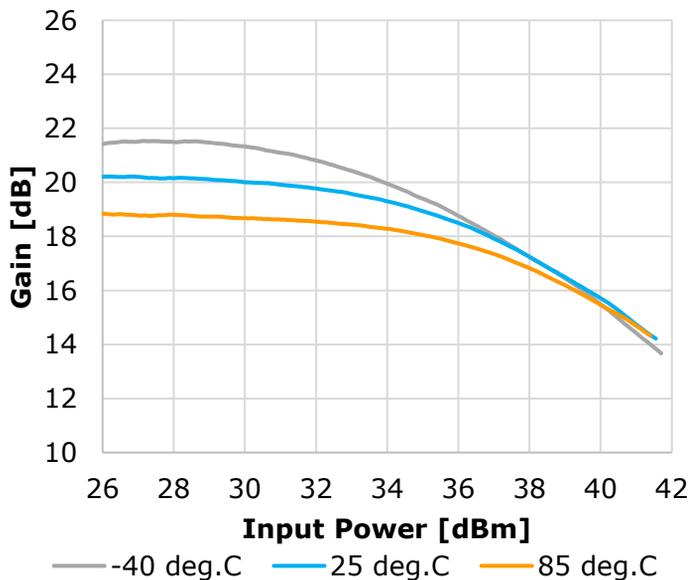
$f=2.9\text{GHz}$, $V_{DS}=50\text{V}$, $I_{DS(DC)}=1.0\text{A}$
 $PW=200\mu\text{sec.}$, Duty=10%


**Drain Efficiency vs. Input Power
by case temperature**

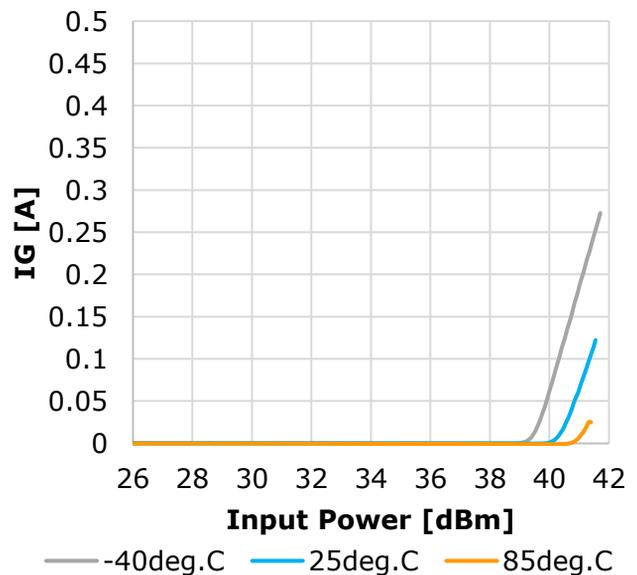
$f=2.9\text{GHz}$, $V_{DS}=50\text{V}$, $I_{DS(DC)}=1.0\text{A}$
 $PW=200\mu\text{sec.}$, Duty=10%


**Gain vs. Input Power
by case temperature**

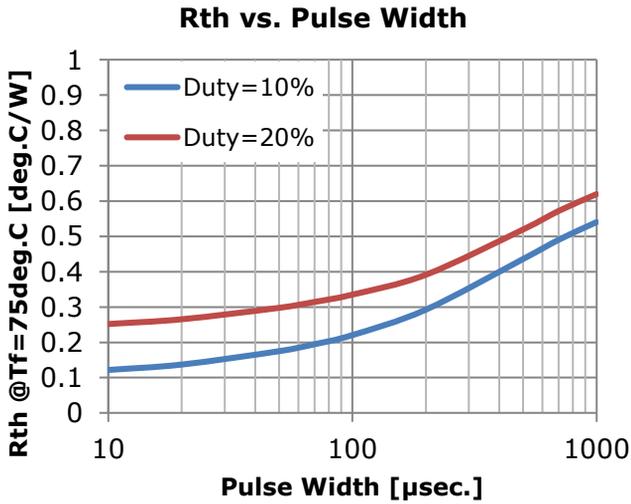
$f=2.9\text{GHz}$, $V_{DS}=50\text{V}$, $I_{DS(DC)}=1.0\text{A}$
 $PW=200\mu\text{sec.}$, Duty=10%


**IG vs. Input Power
by case temperature**

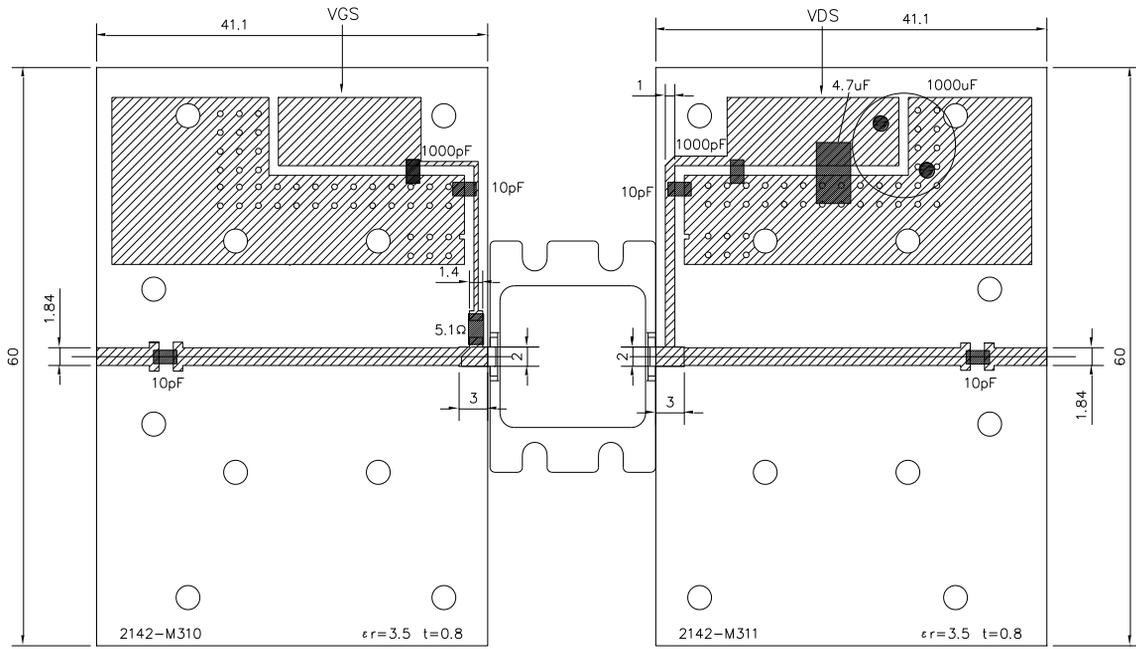
$f=2.9\text{GHz}$, $V_{DS}=50\text{V}$, $I_{DS(DC)}=1.0\text{A}$
 $PW=200\mu\text{sec.}$, Duty=10%



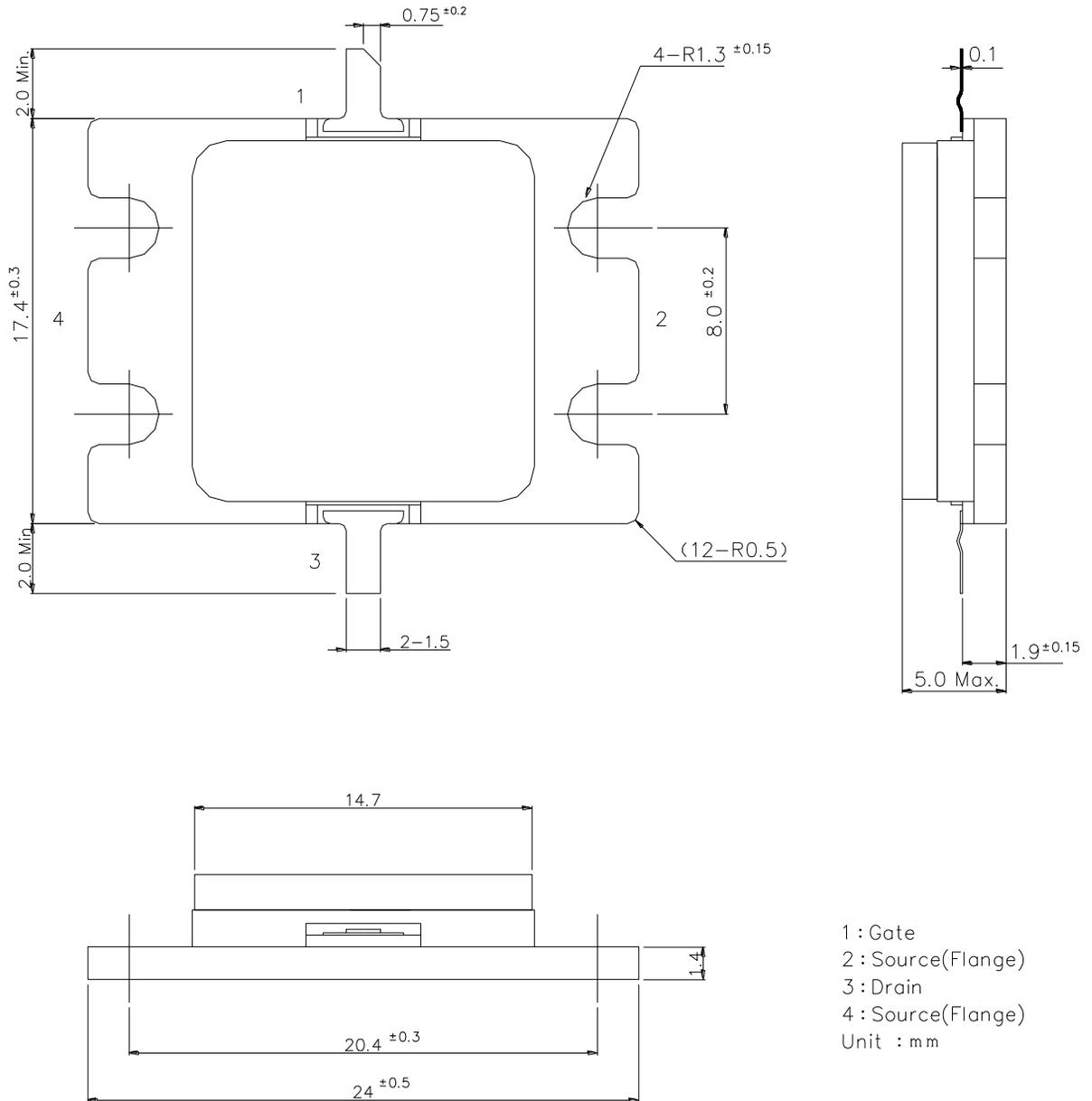
■ **Thermal Characteristics In Pulsed Operation**



■ Test Fixture



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

■ Package Outline
Case Style : IV


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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