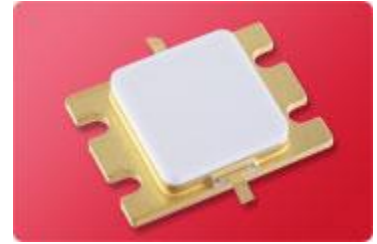


FEATURES

- High Power : 190W (typ.) @ Pin=8W (39dBm)
- High Efficiency: 62% (typ.) @ Pin=8W (39dBm)
- Broad Band: 3.0 to 3.5 GHz
- Impedance Matched $Z_{in}/Z_{out} = 50 \text{ ohm}$

DESCRIPTION

Sumitomo GaN-HEMT SGN3035-150H-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 5 msec pulse width with duty of 10%.



RoHS COMPLIANCE	Yes
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ABSOLUTE MAXIMUM RATINGS (Case Temperature $T_c=25 \text{ deg.C}$)

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

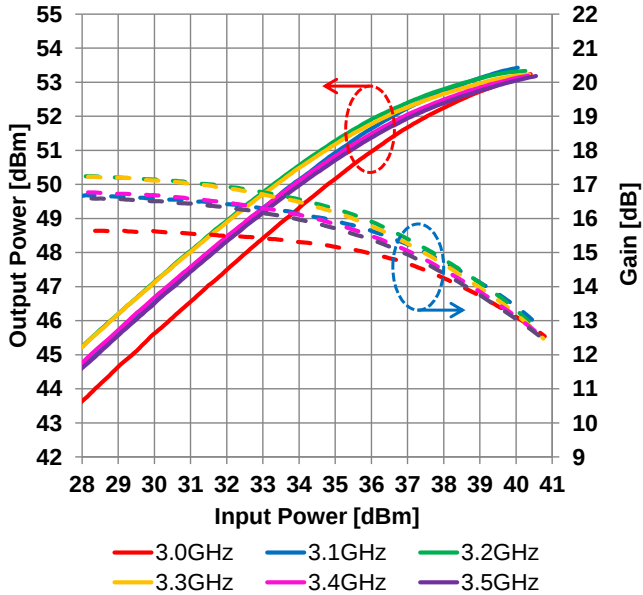
RECOMMENDED OPERATING CONDITION

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

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

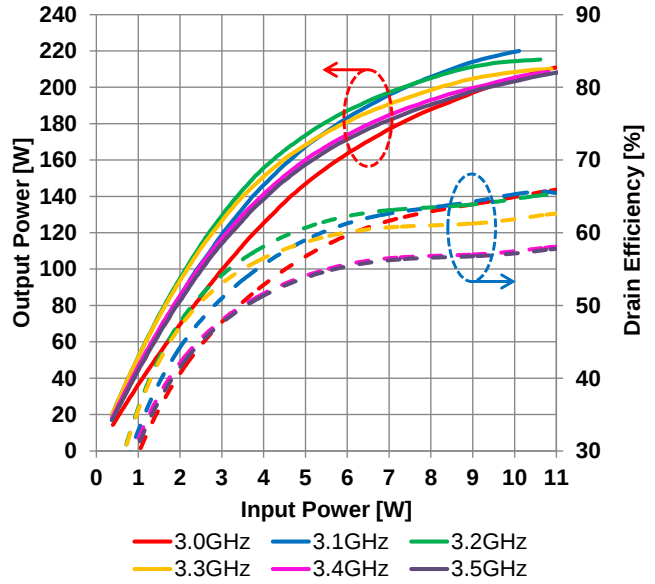
Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Pinch-Off Voltage	V_p	$V_{DS}=50V$ $I_{DS}=36 \text{ mA}$	-4.0	-3.0	-2.0	V
Output Power	P_{out}	$V_{DS}=50V$	51.8	52.8	-	dBm
Drain Efficiency	DE	$I_{DS(DC)}=500 \text{ mA}$	-	62	-	%
Power Gain	G_p	$P_{in}= 39 \text{ dBm}$	12.8	13.8	-	dB
Gain Flatness	GF	$f=3.0, 3.1, 3.2, 3.3, 3.4, 3.5 \text{ GHz}$	-	0.6	1.2	dB
Load Mismatch Ruggedness	VSWR	PW=200 μsec , Duty=10%	10:1	-	-	-
Thermal Resistance	R_{th}	Channel to Case at 45W P_{DC}	-	1.1	1.3	deg.C/W

TYPICAL PERFORMANCE



$V_{DS}=50V$, $I_{DS}(DC)=0.5A$, $PW=200\mu sec$, Duty 10%

Figure 1. Output Power and Gain vs Input Power

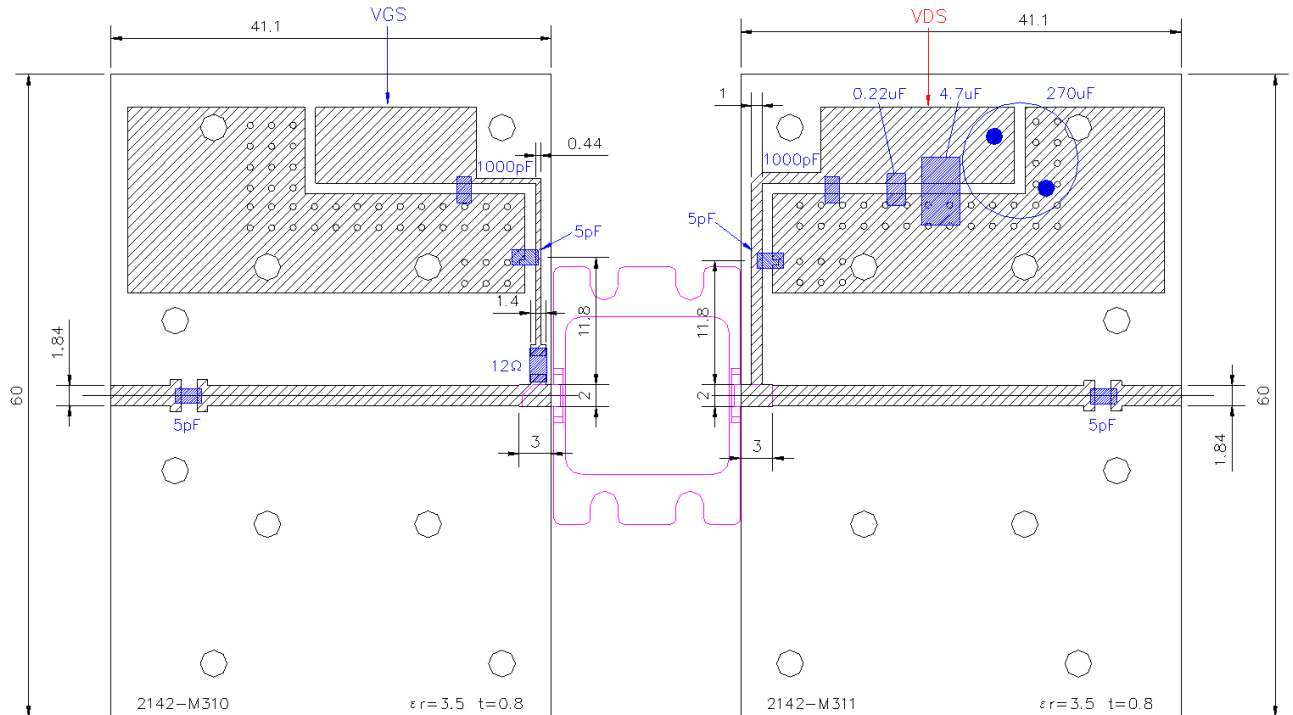


$V_{DS}=50V$, $I_{DS}(DC)=0.5A$, $PW=200\mu sec$, Duty 10%

Figure 2. Output Power and Drain Efficiency vs Input Power

TEST FIXTURE

TF/SGN3035-150H-R



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

IV Package Outline Metal-Ceramic Hermetic Package

