

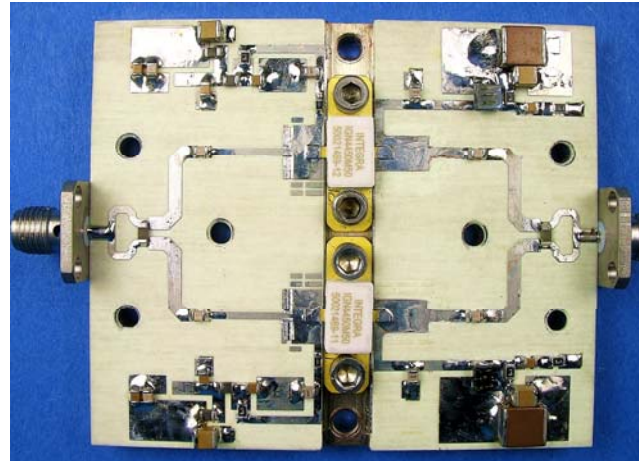
Part Number: **IGNP4450M100**

Integra

TECHNOLOGIES, INC.

C-Band Radar Pallet

Part number IGNP4450M100 is a 50 Ω matched GaN-based high power pulsed radar pallet amplifier for C-Band radar systems operating over the instantaneous bandwidth of 4.4-5.0 GHz. The pallet amplifier supplies a minimum of 100 watts of peak pulse power under the conditions of 300 μ s pulse width and 10% duty cycle. All devices are 100% screened for large signal RF parameters.



GaN pHEMT Technology

- Ultra-high f_T

Pulsed Operation

Class AB Operation

- High Efficiency

Bias Sequencing Required

- Negative Gate Voltage to Bias
- See App Note to Prevent Damage

Gold Metal System

- Maximum Reliability

Pallet Carrier

- Nickel Plated Copper

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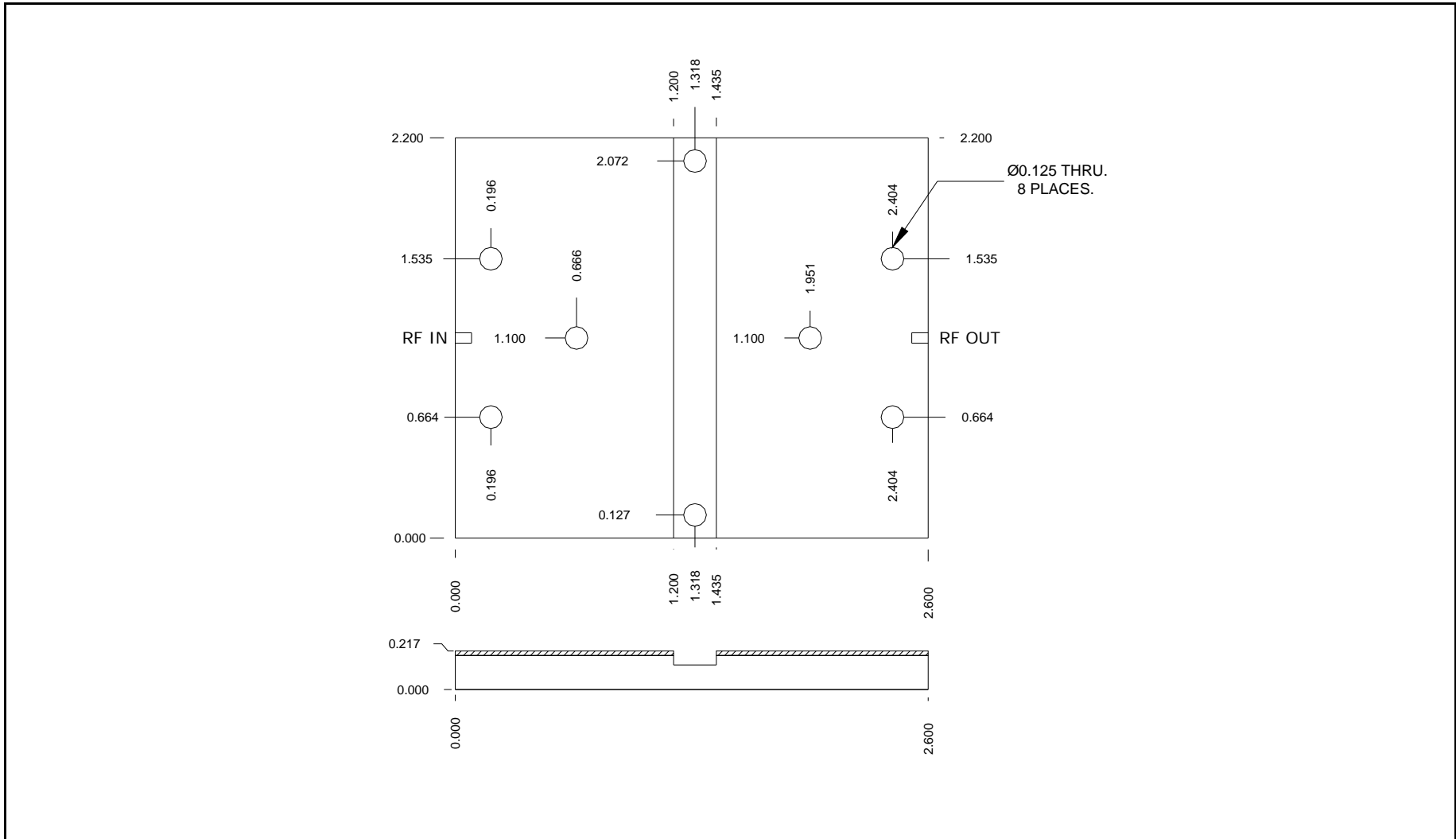
Device	Freq (GHz)	V _{CC} (V)	P _{IN} (W)	IRL (dB)	P _{OUT} (W)	G _P (dB)	I _C (A)	η_c (%)	Droop (dB)
	4.40	36	4.0	13.8	105.3	14.20	5.62	46.8	-0.16
D5548-1	4.70	36	4.0	14.5	111.2	14.44	6.16	45.1	-0.16
	5.00	36	4.0	12.9	114.4	14.56	5.84	49.0	-0.14

Pulse: 300 μ s / 10%. I_{DQ}=80mA

RF ELECTRICAL CHARACTERISTICS

Screen	Parameter	Symbol	Min	Max	Units	Test Conditions
100%	Input Return Loss	IRL	10	--	dB	$V_{CC}=V1$, $IDQ1=80\text{mA}$, $PW=PW1$, $DF=DF1$, $T_F=25\pm5^\circ\text{C}$, $P_{IN}=4\text{W}$, $F=F1$, $F2$, $F3$.
100%	Output Power	P_{out}	100	--	W	$V_{CC}=V1$, $IDQ1=80\text{mA}$, $PW=PW1$, $DF=DF1$, $T_F=25\pm5^\circ\text{C}$, $P_{IN}=4\text{W}$, $F=F1$, $F2$, $F3$.
100%	Power Gain	G_P	13.98	--	dB	$V_{CC}=V1$, $IDQ1=80\text{mA}$, $PW=PW1$, $DF=DF1$, $T_F=25\pm5^\circ\text{C}$, $P_{IN}=4\text{W}$, $F=F1$, $F2$, $F3$.
100%	Collector Efficiency ($P_O/I_C/V_{CC}$)	N_C	45	--	%	$V_{CC}=V1$, $IDQ1=80\text{mA}$, $PW=PW1$, $DF=DF1$, $T_F=25\pm5^\circ\text{C}$, $P_{IN}=4\text{W}$, $F=F1$, $F2$, $F3$.
100%	Pulse Amplitude Droop	D	-0.5	--	dB	$V_{CC}=V1$, $IDQ1=80\text{mA}$, $PW=PW1$, $DF=DF1$, $T_F=25\pm5^\circ\text{C}$, $P_{IN}=4\text{W}$, $F=F1$, $F2$, $F3$.
100%	Gain Flatness	GF	--	1.5	dB	Calculate from min/max gains at frequencies $F1$, $F2$ and $F3$.
100%	Delta Insertion Phase Variation	d-IP	-20	+20	Deg	$V_{CC}=V1$, $IDQ1=80\text{mA}$, $PW=PW1$, $DF=DF1$, $T_F=25\pm5^\circ\text{C}$, $P_{IN}=4\text{W}$, $F=F1$, $F2$, $F3$.
100%	Stability into 2:1 VSWR	VSWR-S	--	--	--	$V_{CC}=V1$, $IDQ1=80\text{mA}$, $PW=PW1$, $DF=DF1$, $T_F=25\pm5^\circ\text{C}$, $P_{IN}=4\text{W}$, $F=F1$, $F2$, $F3$. Rotate 2:1 output VSWR through 360° phase. No oscillatory or pulse break-up characteristics allowed on detected output pulse. All non-harmonically related signals must be at least -50 dBc.
Note	$V1 = 36\text{V}$; $IDQ1=80\text{mA}$, $PW1 = 300\mu\text{s}$; $DF1 = 10\%$; $F1 = 4.40$ GHz, $F2 = 4.70$ GHz, $F3 = 5.00$ GHz.					
Note	$T_F =$ Device flange temperature.					
Note	Screen 'BD' = parameter qualified By Design.					

PALLET DIMENSIONAL OUTLINE DRAWING



Data Sheet Status	
Proposed Specification	This data sheet contains proposed specifications.
Preliminary Specification	This data sheet contains specifications based on preliminary measurements and data.
Product Specification	This data sheet contains final product specifications.
Maximum Ratings	
Stress above one or more of the maximum ratings may cause permanent damage to the device. These are maximum ratings only. Operation of the device at these or at any other conditions above those given in the characteristics sections of the specification is not implied. Exposure to maximum values for extended periods of time may affect device reliability.	

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