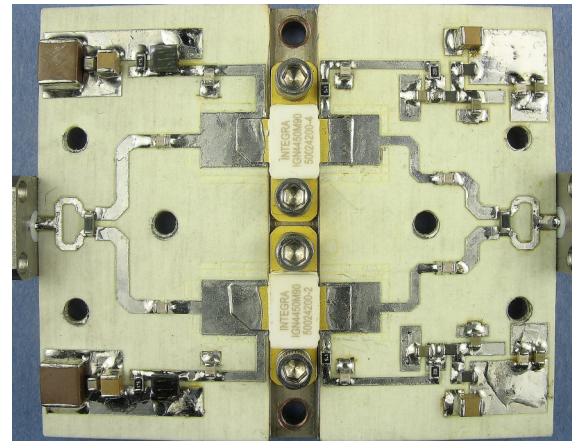


C-Band Radar Pallet

Part number IGNP4450M180 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 165 watts (Typically 180 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 on Silicon Carbide FET

- High Power Gain
- Excellent Thermal Stability
- Gold Metal

Depletion Mode Device

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

Gold Metal System

- Maximum Reliability

Class AB Operation

RF Test Fixture

- Broadband
- Matched to 50 Ω
- Long-term Correlation
- 100% Device RF Screening
- No External Tuning Allowed
- Micro-strip structure

TYPICAL DATA TYPICAL DATA TYPICAL DATA TYPICAL DATA

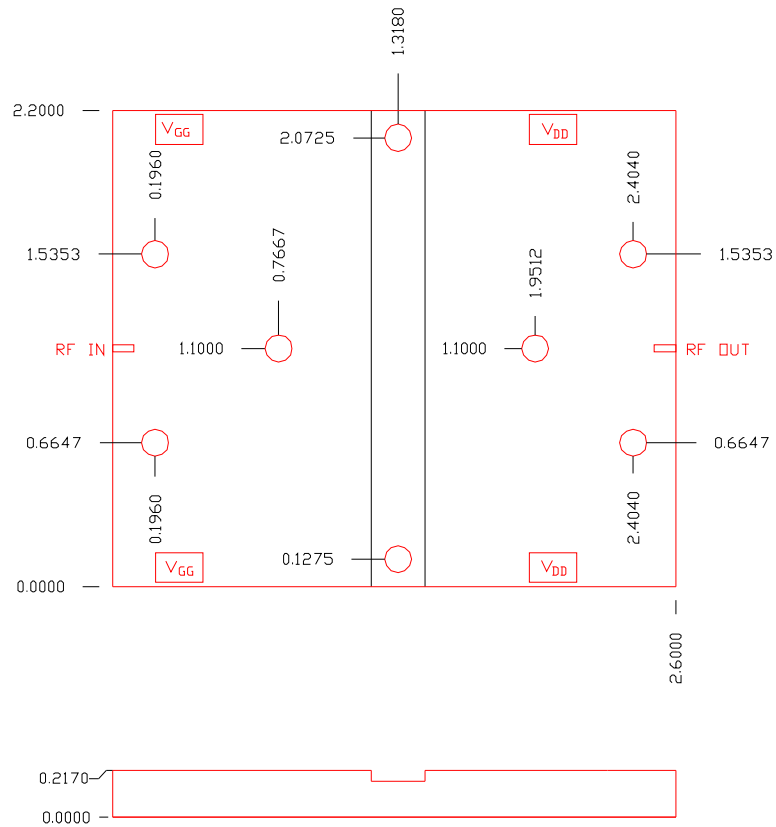
Pallet	Freq (GHz)	V _{CC} (V)	P _{IN} (W)	IRL (dB)	P _{OUT} (W)	G _p (dB)	I _c (A)	η_c (%)	Droop (dB)
D5347-1	4.40	36	10.5	14.0	207	12.95	9.01	63.7	-0.12
	4.70	36	10.5	13.0	196	12.72	9.89	55.2	-0.18
	5.00	36	10.5	13.0	188	12.53	9.09	57.4	-0.17

Pulse: 300 μ s/10%. I_{DQ}=80mA

RF ELECTRICAL CHARACTERISTICS

Screen	Parameter	Symbol	Min	Max	Units	Test Conditions
100%	Input Return Loss	IRL	8	--	dB	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=25\pm5^\circ C, P_{IN}=P_{IN1}, F=F1, F2, F3.$
100%	Output Power	P_{out}	165	--	W	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=25\pm5^\circ C, P_{IN}=P_{IN1}, F=F1, F2, F3.$
100%	Power Gain	G_P	11.86	--	dB	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=25\pm5^\circ C, P_{IN}=P_{IN1}, F=F1, F2, F3.$
100%	Efficiency ($P_O/I_C/V_{CC}$)	N_C	45	--	%	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=25\pm5^\circ C, P_{IN}=P_{IN1}, F=F1, F2, F3.$
100%	Peak Current	I_d	--	10.18	A	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=25\pm5^\circ C, P_{IN}=P_{IN1}, F=F1, F2, F3.$
100%	Pulse Amplitude Droop	Droop	--	-0.5	%	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=25\pm5^\circ C, P_{IN}=P_{IN1}, F=F1, F2, F3.$
100%	Output Power Flatness = $10 \cdot \text{LOG}(P_{OMAX}/P_{OMIN})$	OPF	--	1.0	dB	Calculate from P_o at each frequency F.
100%	3:1 Load Mismatch Stability	VSWR-S	S	--	--	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=25\pm5^\circ C, P_{IN}=P_{IN1}, F=F1, F2, F3.$ Rotate 3:1 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 -65 dBc.
100%	Delta Insertion Phase	DIP	-30	+30	DEG	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=25\pm5^\circ C, P_{IN}=P_{IN1}, F=F3.$
Note 1	$V1 = 36V; I_{DQ1} = 80mA; PW1 = 300\mu s; DF1 = 10\%, P_{IN1} = 10.5 \pm 0.25W$					
Note 2	Test Frequencies: F1 = 4.40 GHz, F2 = 4.70 GHz, F3 = 5.00 GHz.					
Note 3	$T_{F1} = 25 \pm 5^\circ C$ = Device flange temperature.					
Note 4	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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