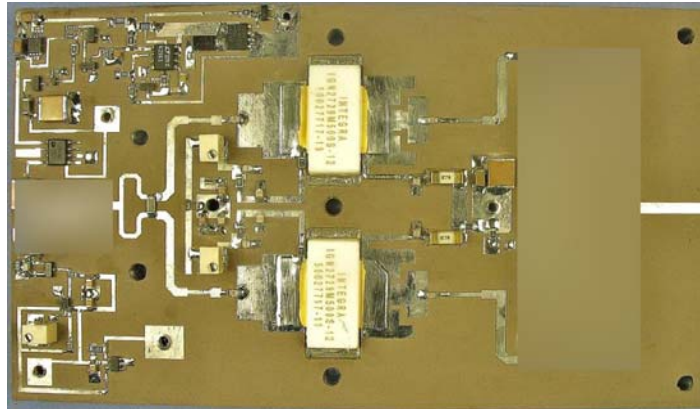


S-Band Radar Pallet Amplifier

IGNP2729M1KW-GPS is a single 50V supply, 50 Ω matched, GaN-based pulsed power pallet amplifiers for S-Band radar systems operating in the 2.70-2.90 GHz instantaneous frequency band. The pallet amplifier supplies a minimum of 1000 watts of peak pulsed output power under the conditions of 300 μ s pulse width and 10% duty cycle. The pallet contains bias sequencing and RF-activated gate biasing circuitry to reduce output noise and simplify system integration. All units are 100% screened for large signal RF parameters.



- GaN on Silicon Carbide HEMT**
- High Power Gain
 - Excellent Thermal Stability
 - Gold Metal

Pulsed Operation

- Class AB Operation**
- High Efficiency
 - RF Activated Gate Bias

- On-Board Power Management**
- Bias Sequencing
 - RF-Activated Gate Bias
 - Single Supply Operation

- Gold Metal System**
- Maximum Reliability

- Pallet Carrier**
- Nickel-Plated Aluminum

TYPICAL DATA

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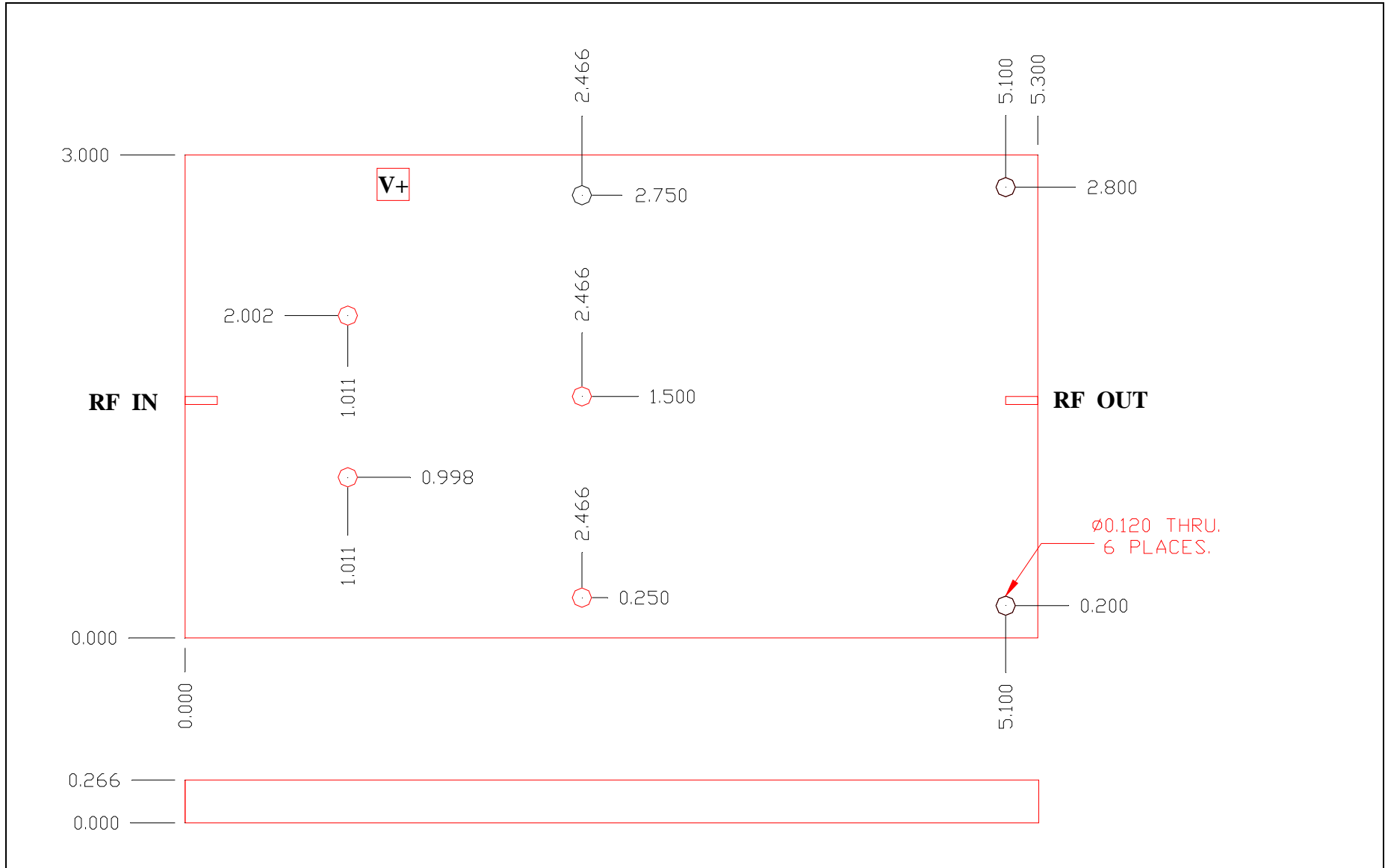
Pallet	Freq (GHz)	V _{CC} (V)	P _{IN} (W)	IRL (dB)	P _{OUT} (W)	G _P (dB)	I _d (A)	N _d (%)	Droop (dB)
D5394-1	2.70	50	74	10.0	1017	11.38	39.70	51.25	-0.32
	2.80	50	74	20.0	1209	12.13	44.20	54.73	-0.34
	2.90	50	74	20.0	1068	11.60	39.20	54.51	-0.25

Pulse: 300 μ s/10%. I_{DQ}=200mA

RF ELECTRICAL CHARACTERISTICS

Screen	Parameter	Symbol	Min	Max	Units	Test Conditions
100%	Input Return Loss	IRL	10	--	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}	1000	--	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	11.30	--	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 Flatness 10*(Pout Max /Pout Min)	OPF	--	1.5	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_d	50	--	%	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=25\pm5^\circ C, P_{IN}=P_{IN1}, F=F1, F2, F3.$
100%	Peak Current	I_d	--	50	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	-0.6	--	%	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=25\pm5^\circ C, P_{IN}=P_{IN1}, F=F1, F2, F3.$
100%	Delta Insertion Phase Variation	d-IP	-20	+20	deg	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=25\pm5^\circ C, P_{IN}=P_{IN1}, F=F1, F2, F3.$
100%	2:1 Load Mismatch Stability	VSWR-S	--	2:1	--	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=25\pm5^\circ C, P_{IN}=P_{IN1}, F=F1, F2, F3.$ Rotate 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 -65 dBc.
100%	3:1 Load Mismatch Tolerance	LMT	--	3:1	--	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=25\pm5^\circ C, P_{IN}=P_{IN1}, F=F1, F2, F3.$ Rotate 3:1 output VSWR through 360° phase. Post test $P_O = \text{Pre test } P_O \pm 5W$
Note 1	$V1 = 50V; I_{DQ1} = 200mA; PW1 = 300us; DF1 = 10\%, P_{IN1} = 74$					
Note 2	Test Frequencies: F1 = 2.70 GHz, F2 = 2.80 GHz, F3 = 2.90 GHz.					
Note 3	$T_{F1} = 25\pm5^\circ C = \text{Device flange temperature.}$					
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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