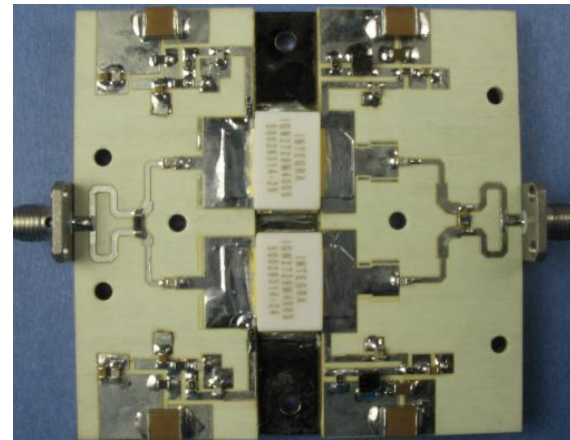


**S-Band Radar Pallet**

Part number IGNP2729M800 is a 50 Ω matched GaN-based high power pulsed radar pallet amplifier for S-Band radar systems operating over the instantaneous bandwidth of 2.7-2.9 GHz. The pallet amplifier supplies a minimum of 800 watts of peak pulse power under the conditions of 300μs 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 50Ω
- Long-term Correlation
- 100% Device RF Screening
- No External Tuning Allowed
- Micro-strip structure

*TYPICAL DATA    TYPICAL DATA    TYPICAL DATA    TYPICAL DATA*

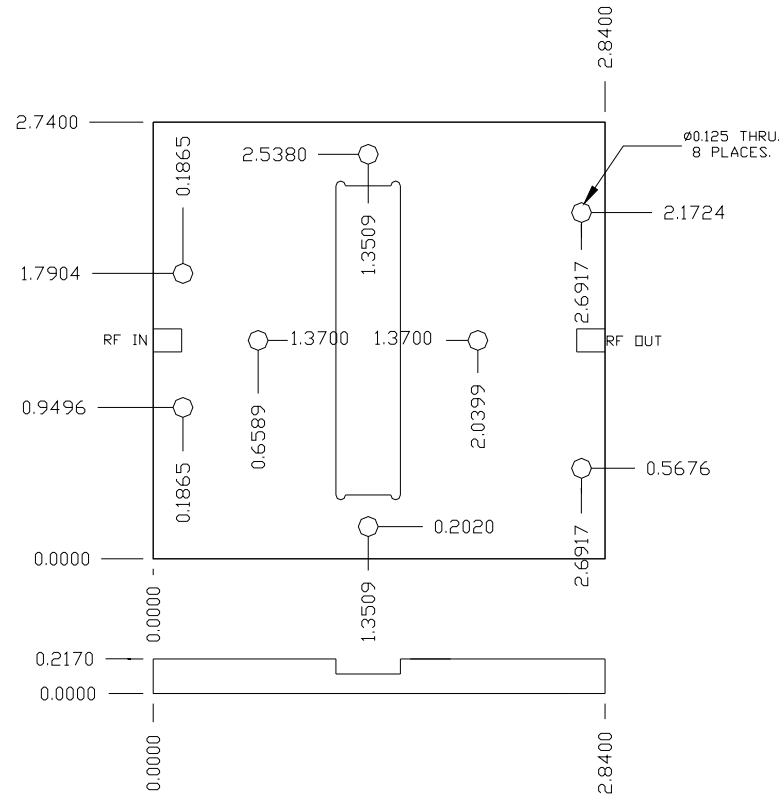
Pallet	Freq (GHz)	V <sub>CC</sub> (V)	P <sub>IN</sub> (W)	IRL (dB)	P <sub>OUT</sub> (W)	G <sub>P</sub> (dB)	I <sub>C</sub> (A)	η <sub>C</sub> (%)	Droop (dB)
D5359-1	2.70	50	68	10.0	870	11.07	29.8	58.41	-0.46
	2.80	50	68	20.0	1043	11.86	35.9	58.11	-0.35
	2.90	50	68	11.5	918	11.31	31.0	59.26	-0.29

Pulse: 300μs/10%. I<sub>DQ</sub>=200mA

**RF ELECTRICAL CHARACTERISTICS**

Screen	Parameter	Symbol	Min	Max	Units	Test Conditions
100%	Input Return Loss	IRL	9	--	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	$P_{out}$	800	--	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	$G_P$	10.69	--	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 ( $P_o/I_c/V_{CC}$ )	$N_C$	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	$I_d$	--	38	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 $P_o$ = Pre test $P_o \pm 5W$
Note 1	$V1 = 50V; I_{DQ1} = 200mA; PW1 = 300us; DF1 = 10\%, P_{IN1} = 68.0 \pm 0.25W$					
Note 2	Test Frequencies: F1 = 2.70 GHz, F2 = 2.80 GHz, F3 = 2.90 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**



<b>Data Sheet Status</b>	
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.
<b>Maximum Ratings</b>	
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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