

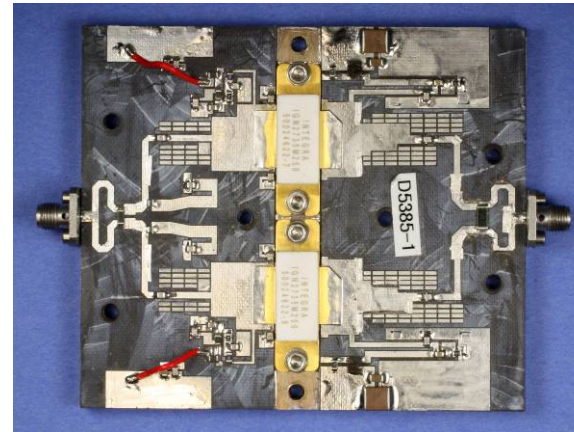
Part Number: **IGNP2735M500**

Integra

TECHNOLOGIES, INC.

S-Band Radar Pallet

Part number IGNP2735M500 is a 50 Ω matched GaN-based high power pulsed radar pallet amplifier for S-Band radar systems operating over the instantaneous bandwidth of 2.7-3.5 GHz. The pallet amplifier supplies a minimum of 500 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

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

- Nickle Plated Copper

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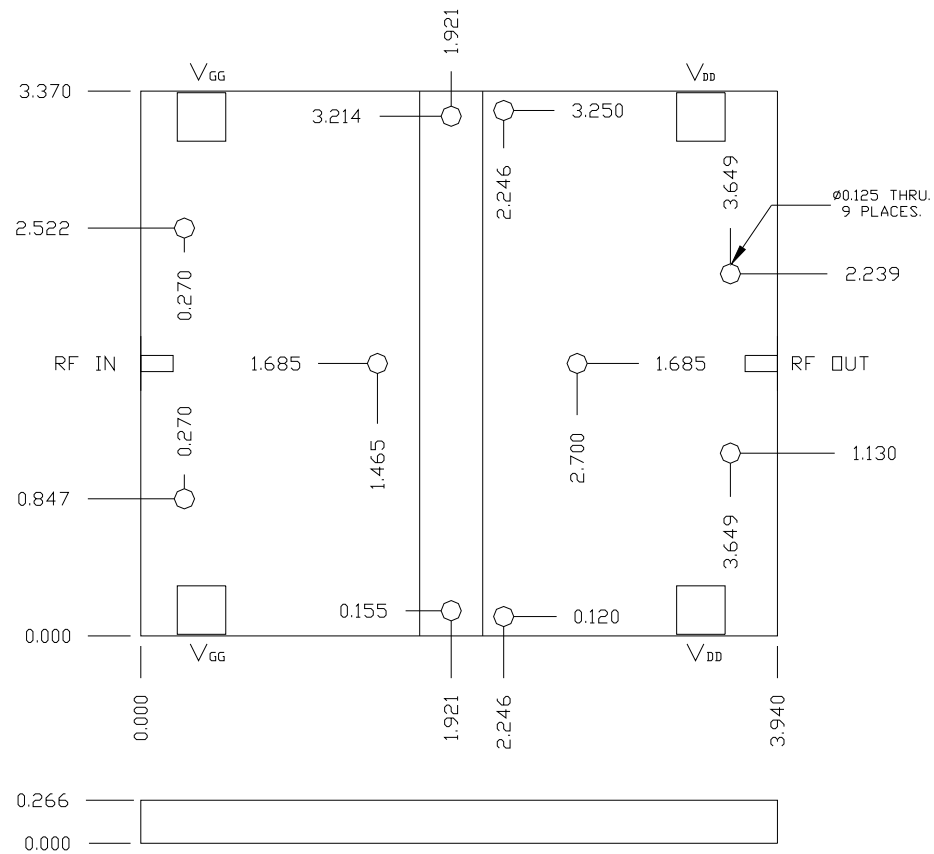
Pallet	Freq (GHz)	V _{CC} (V)	P _{OUT} (W)	IRL (dB)	P _{IN} (W)	G _P (dB)	I _C (A)	η_c (%)	Droop (dB)
D5359-1	2.70	32	500	8	43	10.66	27.90	56.01	-0.34
	2.90	32	500	15	46	10.37	25.70	60.85	-0.27
	3.10	32	500	16	47	10.27	28.90	54.10	-0.27
	3.30	32	500	18	45	10.15	25.90	60.35	-0.27
	3.50	32	500	18	50	10.10	25.18	62.16	-0.30

Pulse = 300 μ s, 10%, I_{DQ}=300mA (150mA each side)

RF ELECTRICAL CHARACTERISTICS

Screen	Parameter	Symbol	Min	Max	Units	Test Conditions
100%	Input Return Loss	IRL	8	--	dB	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=T_{F1}, P_{OUT}=P_{OUT1}, F=F1, F2, F3, F4, F5$
100%	Output Power	P_{out}	500	--	W	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=T_{F1}, P_{OUT}=P_{OUT1}, F=F1, F2, F3, F4, F5$
100%	Power Gain	G_P	10	--	dB	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=T_{F1}, P_{OUT}=P_{OUT1}, F=F1, F2, F3, F4, F5$
100%	Output Power Flatness 10*(Pout Max /Pout Min)	OPF	--	1.5	dB	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=T_{F1}, P_{OUT}=P_{OUT1}, F=F1, F2, F3, F4, F5$
100%	Efficiency ($P_o/I_c/V_{CC}$)	N_d	50	--	%	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=T_{F1}, P_{OUT}=P_{OUT1}, F=F1, F2, F3, F4, F5$
100%	Peak Current	I_d	--	31.25	A	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=T_{F1}, P_{OUT}=P_{OUT1}, F=F1, F2, F3, F4, F5$
100%	Pulse Amplitude Droop	Droop	-0.6	--	%	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=T_{F1}, P_{OUT}=P_{OUT1}, F=F1, F2, F3, F4, F5$
100%	Delta Insertion Phase Variation	d-IP	-20	+20	deg	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=T_{F1}, P_{OUT}=P_{OUT1}, F=F1, F2, F3, F4, F5$
100%	2:1 Load Mismatch Stability	VSWR-S	--	2:1	--	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=T_{F1}, P_{OUT}=P_{OUT1}, F=F1, F2, F3, F4, F5$. 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	VSWR -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 $P_o\pm5W$
Note 1	$V1 = 32V; I_{DQ1} = 300mA; PW1 = 300us; DF1 = 10\%, P_{OUT1} = 500W, T_{F1} = 25\pm5^\circ C$					
Note 2	Test Frequencies: F1 = 2.70 GHz, F2 = 2.90 GHz, F3 = 3.10 GHz, F4 = 3.30 GHz, F5 = 3.50 GHz.					
Note 3	$T_{F1} = 25\pm5^\circ C$ = 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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