

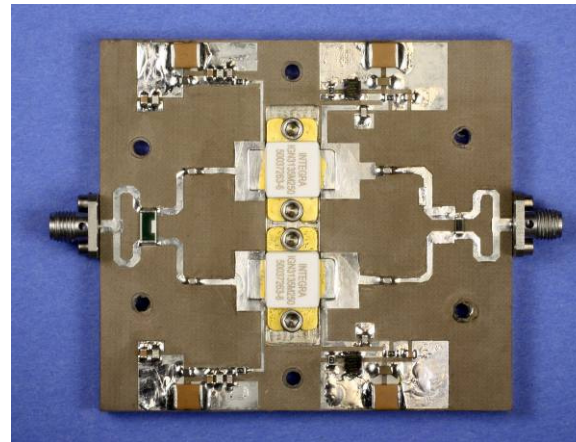
## Part Number: **IGNP3135M500** (preliminary)

# Integra

**TECHNOLOGIES, INC.**

### S-Band Radar Transistor

IGNP3135M500 is a 50  $\Omega$  matched GaN-based pulsed power pallet amplifier for S-Band radar systems operating in the 3.10-3.50 GHz instantaneous frequency band. The pallet amplifier supplies a minimum of 500 watts of peak pulsed output power under the conditions of 300us pulse width and 10% duty cycle. All units 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

- Nickel-Plated Aluminum

*PRELIMINARY DATA*

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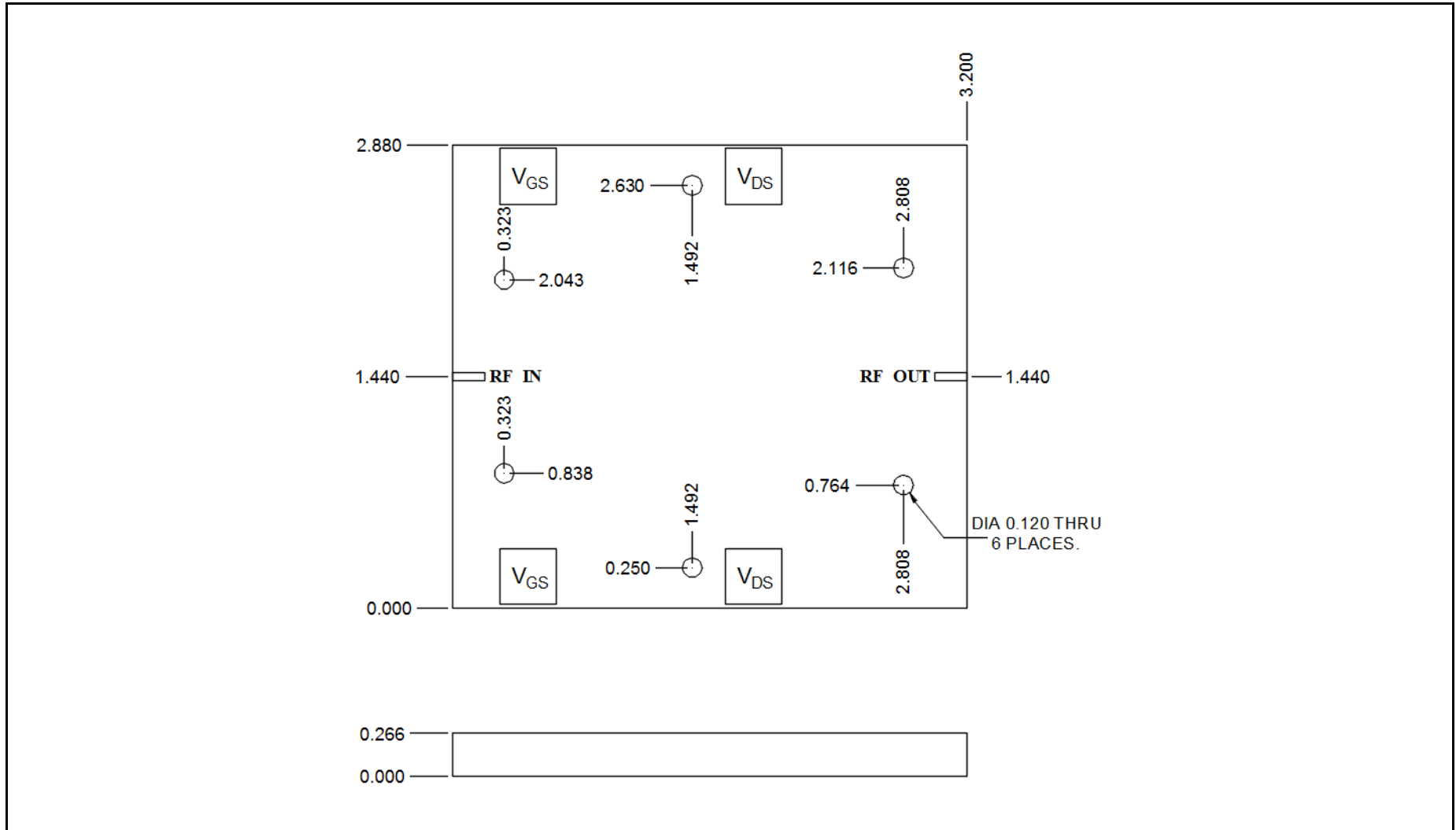
*PRELIMINARY DATA*

**TBD**

RF ELECTRICAL CHARACTERISTICS

Screen	Parameter	Symbol	Min	Max	Units	Test Conditions
100%	Input Return Loss	IRL	--	-8	dB	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=T_{F1}, P_{IN}=P_{IN1}, F=F1, F2, F3.$
100%	Power Gain	Gp	11.50	--	dB	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=T_{F1}, P_{IN}=P_{IN1}, F=F1, F2, F3.$
100%	Drain Efficiency	$N_D$	50	--	%	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=T_{F1}, P_{IN}=P_{IN1}, F=F1, F2, F3.$
100%	Pulse Amplitude Droop	D	-0.50	--	dB	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=T_{F1}, P_{IN}=P_{IN1}, F=F1, F2, F3.$
100%	Output Power	Pout	500	--	W	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=T_{F1}, P_{IN}=P_{IN1}, F=F1, F2, F3.$
100%	Output Power Flatness = $10 \cdot \text{LOG}(P_{OMAX}/P_{OMIN})$	OPF	--	1.30	dB	Calculate from Gp at each frequency F.
100%	Insertion Phase	IP	-20	+20	Deg	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=T_{F1}, P_{IN}=P_{IN1}, F=F3,$ Mark in 5° increments.
100%	Load Mismatch Stability	VSWR-S	2:1	--	--	$V_{DD}=V1, I_{DQ}=I_{DQ1}, PW=PW1, DF=DF1, T_F=T_{F1}, P_{IN}=P_{IN1}, F=F1, F2, F3,$ Rotate 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 -60 dBc.
Note 1	$V1 = 50V; I_{DQ1} = 200mA; PW1 = 300us; DF1 = 10\%, P_{IN1} = 35W.$					
Note 2	Test Frequencies: $F1 = 3.10GHz, F2 = 3.30GHz, F3 = 3.50GHz.$					
Note 3	$T_{F1} = 25 \pm 5^\circ C =$ Device flange temperature.					
Note 4	Parts are binned and marked in 5 degree increments for Insertion Phase IP.					
Note 4	Screen 'BD' = parameter qualified By Design.					

**PALLET OUTLINE DRAWING**



**DEFINITIONS**

<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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