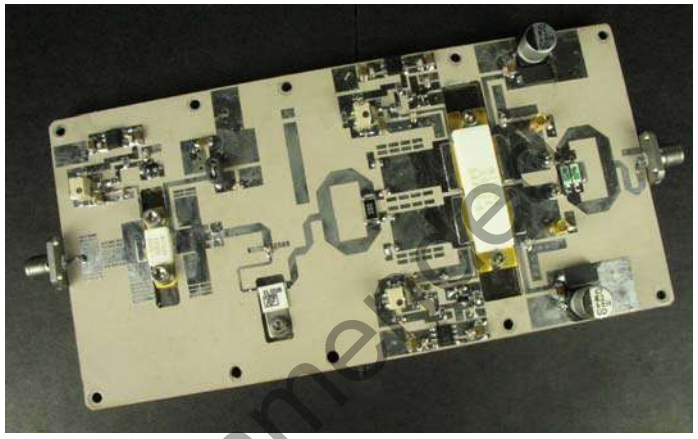
Part Number: ILP1214EL200

Integra
TECHNOLOGIES, INC.

L-Band Radar Pallet

Part number ILP1214EL200 is a 50 Ω matched 2-stage high power pulsed radar pallet amplifier for L-Band radar systems operating over the instantaneous bandwidth of 1215-1400MHz. The pallet amplifier supplies a minimum of 200 watts of peak pulse power under the conditions of 16ms pulse width and 50% duty cycle. All units are 100% screened for large signal RF parameters.



TYPICAL DATA *TYPICAL DATA* *TYPICAL DATA* *TYPICAL DATA*

Device	Freq (MHz)	V_{DD} (V)	P_{IN} (W)	IRL (dB)	P_{OUT} (W)	G_P (dB)	I_d (A)	ΔG (dB)	Droop (dB)
4520-1	1215	30	1.25	-18.0	241.0	22.85	19.74		-0.15
	1300	30	1.25	-16.0	250.0	23.01	18.92	0.72	-0.17
	1400	30	1.25	-16.0	212.0	22.29	17.44		-0.17

Pulse Format = 16ms, 50%. V_{bias}=30V, I_{DQ}<600mA.

Note: I_d= Total current peak

Silicon LDMOS
- Ultra-high f_T

Class AB Operation
- Total Bias Current < 600mA

Single Bias Voltage
- Operates with single 30V supply voltage. Gate Bias provided via voltage regulator.

Common Source Configuration

Gold Metal
- Maximum Reliability

Impedance Matched to 50Ω
- Ease of Use

Pallet Carrier
- Nickel Plated Copper Carrier

Maintained
- 100% RF Screening
- No External Tuning Allowed

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MAXIMUM RATINGS

Screen	Parameter	Symbol	Min	Max	Units	Test Conditions
BD	Bias Voltage, Drain	V_{DD}	--	55	V	Non-Operating
BD	Bias Voltage, Gate	V_{GG}	-0.5	12	V	Non-Operating
BD	Storage Temperature Range	T_{STG}	-40	+150	°C	--
BD	Operating Temperature Range	T_J	-40	+110	°C	--
Note	Screen 'BD' = parameter qualified By Design.					

THERMAL CHARACTERISTICS

Screen	Parameter	Symbol	Min	Max	Units	Test Conditions
BD	Thermal Resistance – Output Stage Transistor	$R_{TH(JC)}$	--	0.25	°C/W	V_{dd}=30V, P_{IN}=1.25W, Pulse = Note 2, T_F=25±5°C, F=F1, F2, F3.
Note	Screen 'BD' = parameter qualified By Design.					

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RF ELECTRICAL CHARACTERISTICS

Screen	Parameter	Symbol	Min	Max	Units	Test Conditions
100%	Input Return Loss	IRL	9	--	dB	V_{bias}=30V, P_{IN}=1.25±0.15W, Pulse = Note 2, T_F=25±5°C, F=F1, F2, F3.
100%	Output Power	P_{OUT}	200	--	W	V_{bias}=30V, P_{IN}=1.25±0.15W, Pulse = Note 2, T_F=25±5°C, F=F1, F2, F3.
100%	Power Gain	G_P	21.55	--	dB	V_{bias}=30V, P_{IN}=1.25±0.15W, Pulse = Note 2, T_F=25±5°C, F=F1, F2, F3.
100%	Peak Current	I_{PK}	--	25.0	A	V_{bias}=30V, P_{IN}=1.25±0.15W, Pulse = Note 2, T_F=25±5°C, F=F1, F2, F3.
100%	Pulse Amplitude Droop	D	--	-0.7	dB	V_{bias}=30V, P_{IN}=1.25±0.15W, Pulse = Note 2, T_F=25±5°C, F=F1, F2, F3.
100%	Stability	VSWR-S	1.5:1	--	--	V_{bias}=30V, P_{IN}=1.25±0.15W, Pulse = Note 2, T_F=25±5°C, F=F1, F2, F3. No oscillatory or pulse break-up characteristics allowed on detected output pulse.
100%	Load Mismatch Tolerance - Ruggedness	LMT	2:1	--	--	V_{bias}=30V, P_{IN}=1.25±0.15W , Pulse = Note 2, T_F=25±5°C, F=F1, F2, F3. Rotate 2:1 output VSWR through 360° phase. Survival.
BD	Harmonics	nf_o	--	-20	dBc	V_{bias}=30V, P_{IN}=1.25±0.15W, Pulse = Note 2, T_F=25±5°C, F=F1, F2, F3.
Note 1	F1 = 1215 MHz, F2 = 1300 MHz, F3 = 1400 MHz					
Note 2	Pulse format = 16ms, 50%					
Note 3	Total Bias Current: I_{DQ} ≤600mA					
Note 4	T_F = Device flange temperature.					
Note 5	Screen 'BD' = parameter qualified By Design.					

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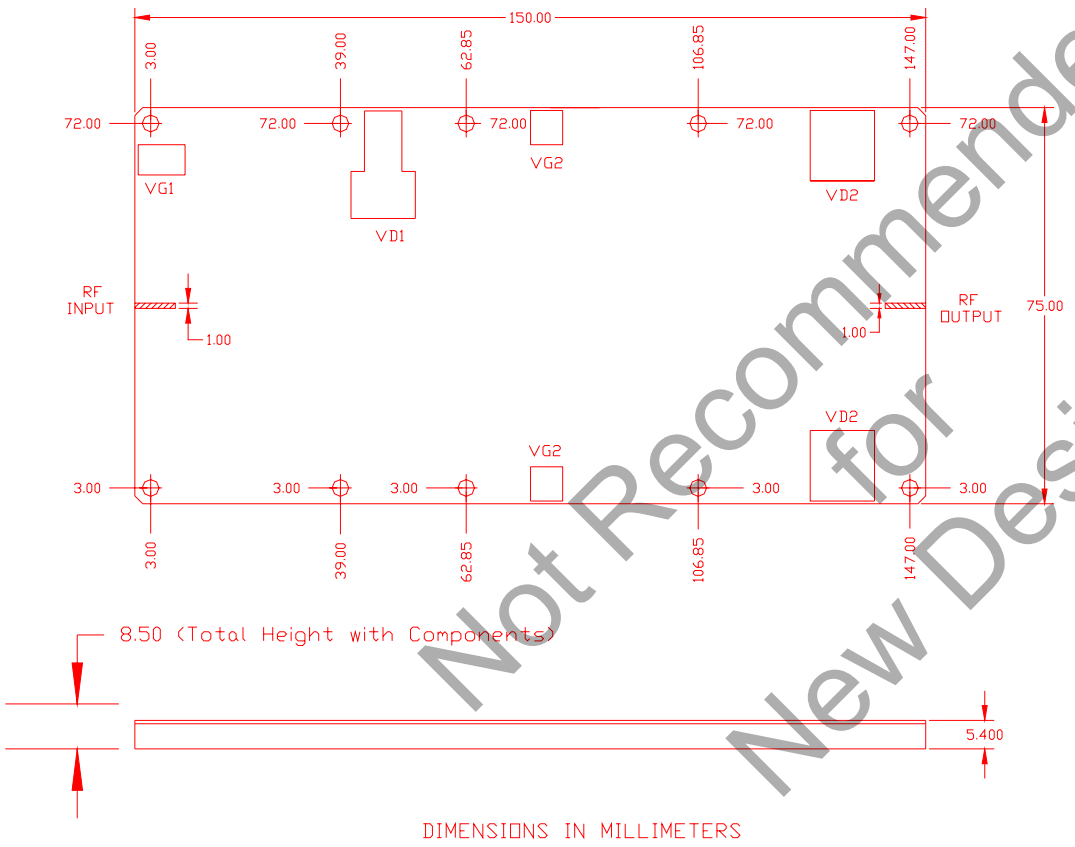
PALLET DIMENSIONAL OUTLINE DRAWING



1. PC Board Type: ROGERS 6010 0.025" CLAD TO THICK 0.187" COPPER.
2. VG1=DRIVER GATE BIAS; VG2=OUTPUT GATE BIAS
   VD1=DRIVER DRAIN BIAS; VD2=OUTPUT DRAIN BIAS

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DEFINITIONS

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 and 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.

WARNING

Product and environmental safety - toxic materials
This product contains beryllium oxide. The product is entirely safe provided that the BeO base is not damaged. All persons who handle, use or dispose of this product should be aware of its nature and of the necessary safety precautions. After use, dispose of as chemical or special waste according to the regulations applying at the location of the user. It must never be thrown out with general or domestic waste.

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