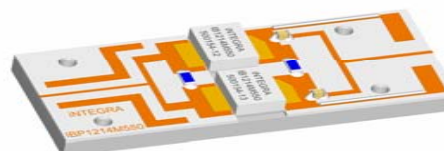


## L-Band Radar Pallet

Part number IBP1214M700 is a 50  $\Omega$  matched high power pulsed radar pallet amplifier for L-Band radar systems operating over the instantaneous bandwidth of 1210-1400 MHz. The pallet amplifier supplies a minimum of 700 watts of peak pulse power under the conditions of 200 $\mu$ s pulse width and 10% duty cycle. All units are 100% screened for large signal RF parameters.



### Silicon Bipolar

- Ultra-high  $f_T$

### Class C Operation

- High Efficiency

### Common Base Configuration

- Single Power Supply

### Gold Metal

- Maximum Reliability

### Emitter Ballasting

- Optimum Thermal Distribution

### Impedance Matched to 50 $\Omega$

- Ease of Use

### Pallet Carrier

- Nickel Plated Copper Carrier

### Maintained

- 100% Device RF Screening
- No External Tuning Allowed

	TYPICAL DATA		TYPICAL DATA		TYPICAL DATA		TYPICAL DATA		
Device	Freq (MHz)	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)	$\eta_c$ (%)	Droop (dB)
	1210	42	72.3	17.5	700	9.87	31.6	52.91	0.0
	1300	42	78.5	11.5	700	9.53	32.5	51.58	0.0
	1400	42	95.7	15.0	700	8.67	32.8	51.16	0.0

Pulse Format = 200 $\mu$ s, 10%

**MAXIMUM RATINGS**

Screen	Parameter	Symbol	Min	Max	Units	Test Conditions
BD	Collector-Emitter Voltage	$V_{CES}$	--	85	V	--
BD	Emitter-Base Voltage	$V_{EBO}$	--	3	V	--
BD	Storage Temperature Range	$T_{STG}$	-40	+150	°C	--
BD	Operating Junction Temperature Range	$T_J$	-40	+200	°C	--
Note	Screen 'BD' = parameter qualified By Design.					

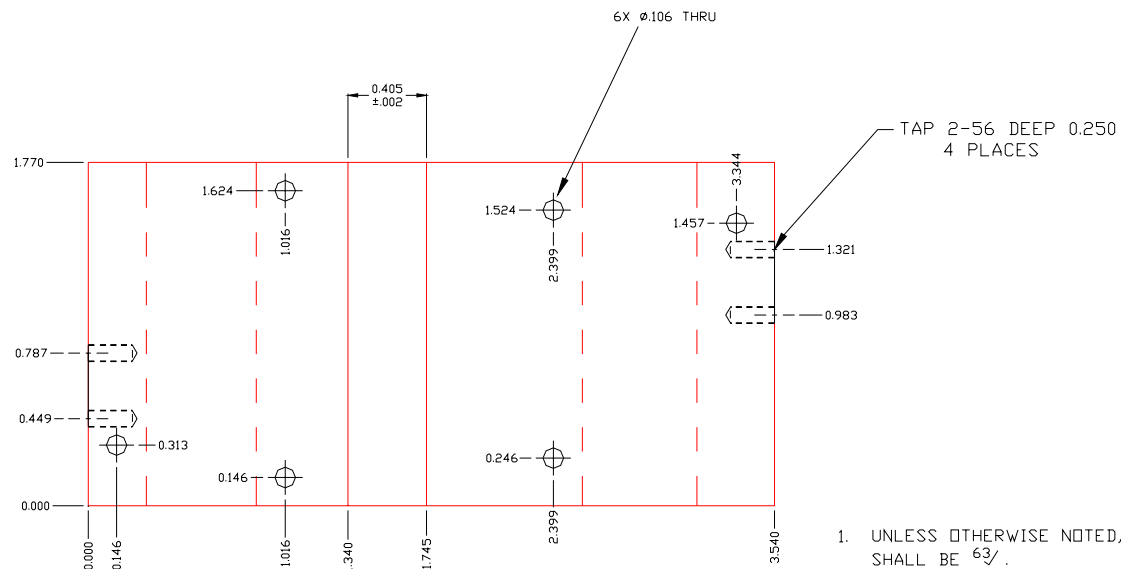
**THERMAL CHARACTERISTICS**

Screen	Parameter	Symbol	Min	Max	Units	Test Conditions
BD	Thermal Resistance	$R_{TH(JC)}$	--	TBD	°C/W	$V_{CC}=42V$ , Pulse format=200 $\mu s$ , 10%, $T_F=25\pm 5^\circ C$ .
Note	Screen 'BD' = parameter qualified By Design.					

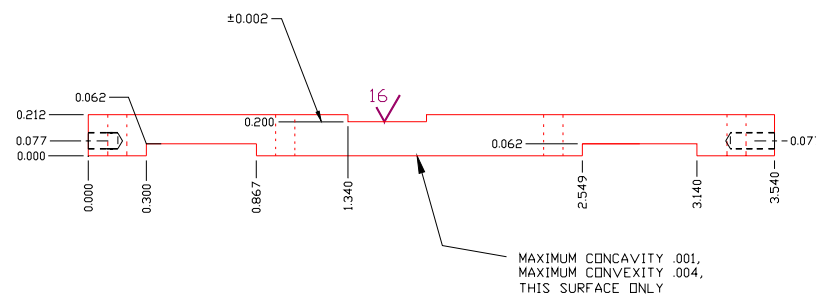
**RF ELECTRICAL CHARACTERISTICS**

Screen	Parameter	Symbol	Min	Max	Units	Test Conditions
100%	Input Return Loss	IRL	10	--	dB	$V_{CC}=42V$ , $P_{OUT}=700W$ , Pulse = Note 2, $T_F=25\pm5^\circ C$ , $F=F1, F2, F3$ .
100%	Output Power	$P_{OUT}$	700	--	W	$V_{CC}=42V$ , Pulse = Note 2, $T_F=25\pm5^\circ C$ , $F=F1, F2, F3$ .
100%	Power Gain	$G_P$	8	--	dB	$V_{CC}=42V$ , $P_{OUT}=700W$ , Pulse = Note 2, $T_F=25\pm5^\circ C$ , $F=F1, F2, F3$ .
100%	Collector Efficiency ( $P_{OUT}/I_C/V_{CC}$ )	$N_C$	50	--	%	$V_{CC}=42V$ , $P_{OUT}=700W$ , Pulse = Note 2, $T_F=25\pm5^\circ C$ , $F=F1, F2, F3$ .
100%	Pulse Amplitude Droop	D	--	-0.5	dB	$V_{CC}=42V$ , $P_{OUT}=700W$ , Pulse = Note 2, $T_F=25\pm5^\circ C$ , $F=F1, F2, F3$ .
100%	Gain Flatness	GF	--	1.5	dB	$V_{CC}=42V$ , $P_{OUT}=700W$ , Pulse = Note 2, $T_F=25\pm5^\circ C$ , $F= F3$ .
100%	Delta Insertion Phase Variation	$\Delta IP$	-20	+20	deg	$V_{CC}=42V$ , $P_{OUT}=700W$ , Pulse = Note 2, $T_F=25\pm5^\circ C$ , $F=F1, F2, F3$ .
100%	Stability	VSWR-S	1.5:1	--	--	$V_{CC}=42V$ , $P_{OUT}=700W$ , Pulse = Note 2, $T_F=25\pm5^\circ C$ , $F=F1, F2, F3$ . No oscillatory or pulse break-up characteristics allowed on detected output pulse.
100%	Load Mismatch Tolerance - Ruggedness	LMT	2:1	--	--	$V_{CC}=42V$ , $P_{OUT}=700W$ , Pulse = Note 2, $T_F=25\pm5^\circ C$ , $F=F1, F2, F3$ . Rotate 2:1 output VSWR through 360° phase. Survival.
Note 1	F1 = 1.21 GHz, F2 = 1.3 GHz, F3 = 1.4 GHz					
Note 2	Pulse format = 200 $\mu$ s, 10%					
Note 3	$T_F$ = Device flange temperature.					
Note 4	Screen 'BD' = parameter qualified By Design.					

**PALLET DIMENSIONAL OUTLINE DRAWING**



1. UNLESS OTHERWISE NOTED, ALL MACHINED SURFACES SHALL BE  $63\sqrt{}$ .
2. REMOVE BURRS AND SHARP EDGES.
3. ALL EXPOSED COPPER TO BE PLATED WITH 0.000150" MINIMUM OF MIL-STD-C-26074C NICKEL. PLATING TO PASS A TAPE PEEL TEST.
4. MATERIAL - COPPER.



**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 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**

<b>Product and environmental safety - toxic materials</b>
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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