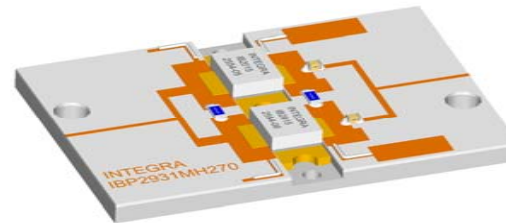


## S-Band Radar Pallet

Part number IBP2931MH270 is a 50  $\Omega$  matched high power pulsed radar pallet amplifier for S-Band radar systems operating over the instantaneous bandwidth of 2.9-3.1 GHz. The pallet amplifier supplies a minimum of 270 watts of peak pulse power under the conditions of 100 $\mu$ s pulse width and 10% duty cycle. All devices 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

- Ni Plated Copper Carrier
- High Er PCB

### BeO Based Transistor Package

- Unmatched Thermal Reliability

### US Patent Number

- 6181200B1

### TYPICAL DATA

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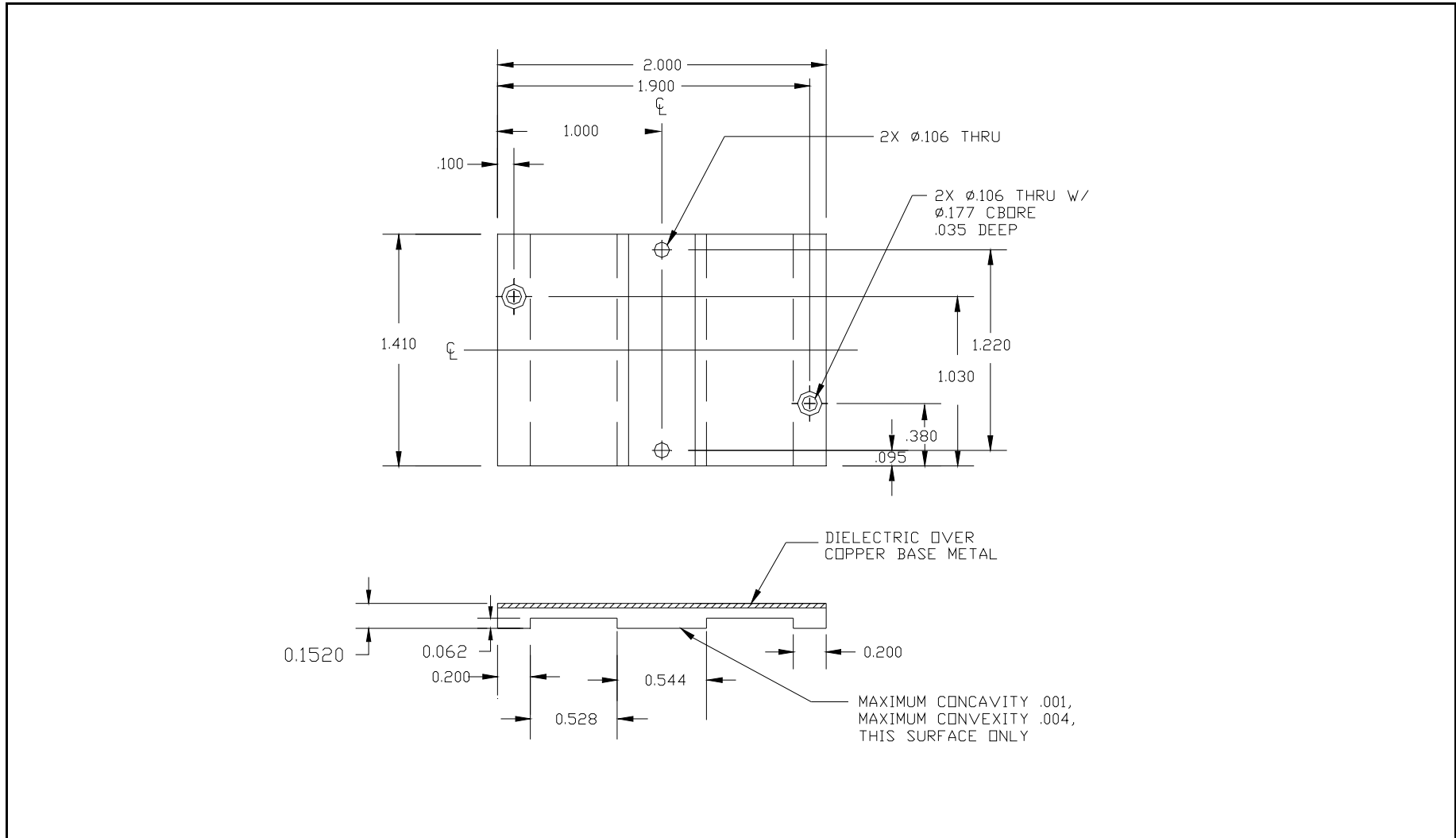
Pallet	Freq (GHz)	V <sub>CC</sub> (V)	P <sub>OUT</sub> (W)	IRL (dB)	P <sub>IN</sub> (W)	G <sub>P</sub> (dB)	I <sub>C</sub> (A)	n <sub>C</sub> (%)	Droop (dB)
D4556-5	2.90	36	319	11	50	8.0	22.18	40	-0.24
	3.00	36	319	19	50	8.0	21.44	41	-0.34
	3.10	36	317	10	50	8.0	18.90	47	-0.18

Pulse Format = 100us, 10%

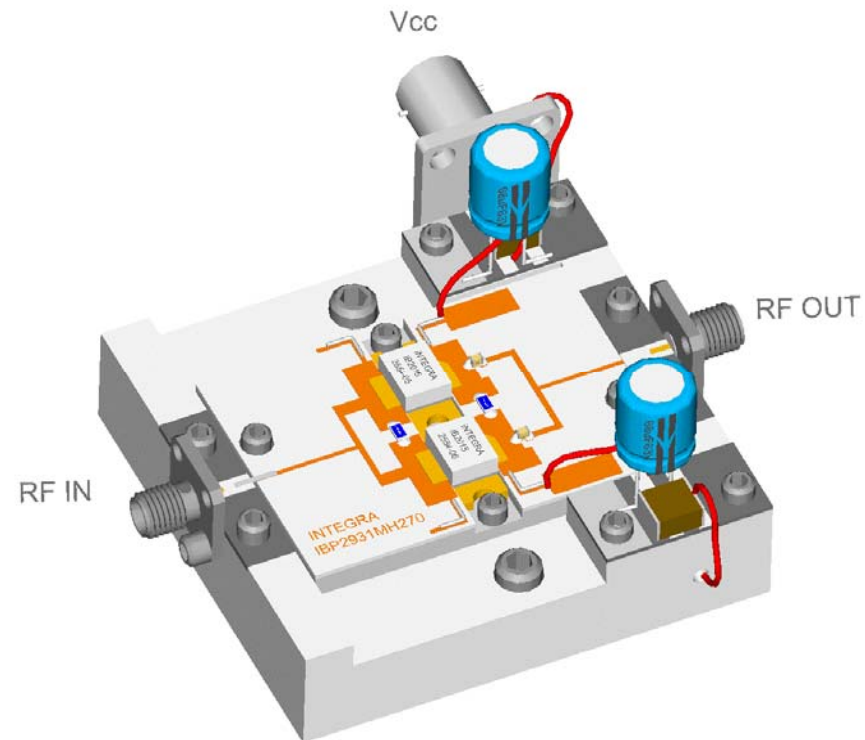
**RF ELECTRICAL CHARACTERISTICS**

Screen	Parameter	Symbol	Min	Max	Units	Test Conditions
100%	Output Power	$P_{OUT}$	270	350	W	$V_{CC}=36V$ , $P_{IN}=50W$ , Pulse = Note 2, $T_F=25\pm 5^\circ C$ , F=F1, F2, F3.
100%	Power Gain	$G_P$	7.5	--	dB	$V_{CC}=36V$ , $P_{IN}=50W$ , Pulse = Note 2, $T_F=25\pm 5^\circ C$ , F=F1, F2, F3.
100%	Collector Efficiency ( $P_O/I_C/V_{CC}$ )	$N_C$	35	--	%	$V_{CC}=36V$ , $P_{IN}=50W$ , Pulse = Note 2, $T_F=25\pm 5^\circ C$ , F=F1, F2, F3.
100%	Input Return Loss	IRL	-30	-7	dB	$V_{CC}=36V$ , $P_{IN}=50W$ , Pulse = Note 2, $T_F=25\pm 5^\circ C$ , F=F1, F2, F3.
100%	Pulse Amplitude Droop	D	--	0.7	dB	$V_{CC}=36V$ , $P_{IN}=50W$ , Pulse = Note 2, $T_F=25\pm 5^\circ C$ , F=F1, F2, F3.
100%	Delta Insertion Phase Variation	$\Delta IP$	-20	+20	deg	$V_{CC}=36V$ , $P_{IN}=50W$ , Pulse = Note 2, $T_F=25\pm 5^\circ C$ , F=F1, F2, F3. With respect to an established Phase Reference.
BD	Pulse Rise Time	$T_r$	--	150	ns	$V_{CC}=36V$ , $P_{IN}=50W$ , Pulse = Note 2, $T_F=25\pm 5^\circ C$ , F=F1, F2, F3. Measure between 10% and 90% detected power points.
100%	Stability into 1.5:1 VSWR	VSWR-S	--	1.5:1	--	$V_{CC}=36V$ , $P_{IN}=50W$ , Pulse = Note 2, $T_F=25\pm 5^\circ C$ , F=F1, F2, F3. Rotate 1.5:1 output VSWR through 360° phase. No oscillatory or pulse break-up characteristics allowed on detected output pulse.
100%	Load Mismatch Tolerance	LMT	--	2:1	--	$V_{CC}=36V$ , $P_{IN}=50W$ , Pulse = Note 2, $T_F=25\pm 5^\circ C$ , F=F1, F2, F3. Rotate 2:1 output VSWR through 360° phase. Survival.
100%	Gain Flatness over Frequency	GF	--	0.8	dB	$V_{CC}=36V$ , $P_{IN}=50W$ , Pulse = Note 2, $T_F=25\pm 5^\circ C$ , F=F1, F2, F3. Calculate from min/max gains
Note 1	F1 = 2.90GHz, F2 = 3.00GHz, F3 = 3.10 GHz.					
Note 2	Pulse format = 100 $\mu$ s, 10%					
Note 3	$T_F$ = Pallet base plate temperature.					
Note 4	Screen 'BD' = parameter qualified By Design.					

**PALLET DIMENSIONAL OUTLINE DRAWING**



**PALLET TEST FIXTURE:**



**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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