IPA082096C

820-960 MHz 50W Power Amplifier

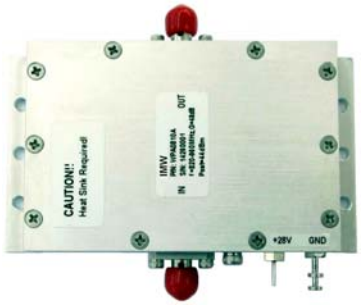
REV B
December 2014

Key Features

- 50 Ohm Impedance
- 820-960 MHz
- 50% Power Added Efficiency
- 46.0 dB Gain
- 47.0 dBm P_{1dB}
- +/- 1.0 dB Gain Flatness
- 1.22:1 VSWR
- 2.5dB Noise Figure
- Unconditional Stable
- Infinite Load VSWR Protection
- Single Power Supply
- RoHS Compliant

Applications

- Cellular, GSM
- Mobile Infrastructures
- Fixed Wireless



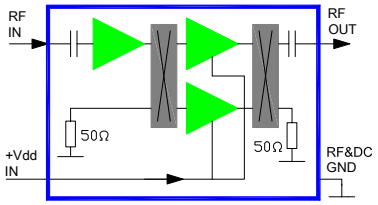
Additional heat sink is required for continuous operation!

Absolute Maximum Ratings

Parameters	Units	Rating
DC Power Supply Voltage	V	30
Drain Current, CW	A	6.0
Total Power Dissipation	W	170
RF Input Power, CW	dBm	7
Storage Temperature	°C	-40 ~ +85
Operating Temperature	°C	-20 ~ +85
Thermal Resistance	°C/W	1.3

Operation of this device above any one of these parameters may cause permanent damage.

Functional Block Diagram



Ordering Information

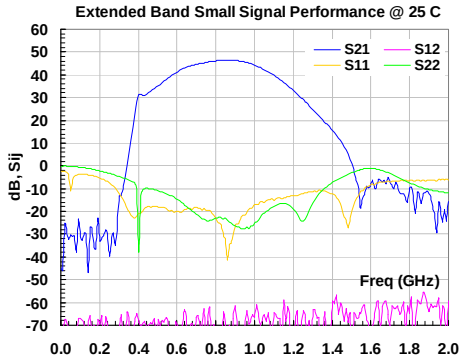
Model Number	IPA082096C

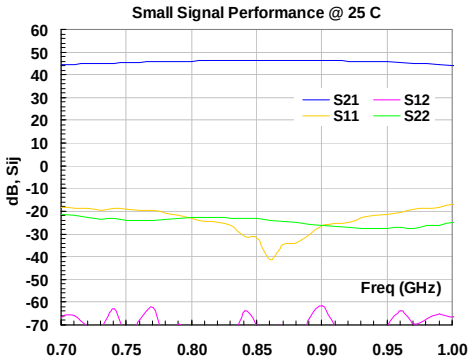
Specifications

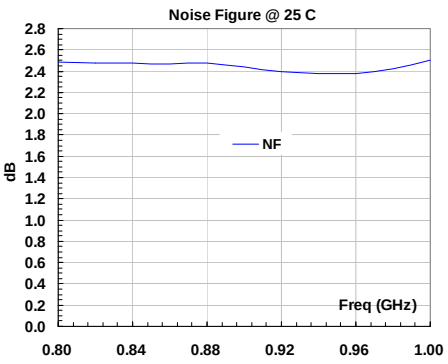
Summary of the electrical specifications IPA082096C at room temperature

Index	Testing Item	Symbol	Test Constraints	Min	Normal	Max	Unit
1	Frequency Range	BW	50 Ohm Impedance	820		960	MHz
2	Small Signal Gain	S_{21}	820 – 960 MHz	44.0	46.0	48.0	dB
3	Gain Variation	ΔG	820 – 960 MHz		+/-0.5	+/- 1.0	dB
4	Output Power 1dB Compression Point	P_{1dB}	820 – 960 MHz	45	47		dBm
5	Input Return Loss	S_{11}	820 – 960 MHz	15	20		dB
6	Output Return Loss	S_{22}	820 – 960 MHz	15	20		dB
7	Reverse Isolation	S_{12}	820 – 960 MHz		70		dB
8	Noise Figure	NF	820 – 960 MHz		2.5		dB
9	Output-Third-Order Interception point	IP_3	Two-Tone, P_{out} = 40 dBm each, 1 MHz separation	55	57		dBm
10	DC Power Added Efficiency	η	Po=50W	45	50		%
11	Current Consumption	I_{dd}	V_{dd}= +28 V, 0.404 A quiescent DC bias			5.5	A
12	Power Supply Voltage	V_{dd}		26	28	30	V
13	Operating Temperature	T_o		-20		+70	°C
14	Thermal Resistance	$R_{th.c}$				1.3	°C/W
15	Maximum Average RF Input Power	$P_{IN, MAX}$	DC – 6 GHz			7	dBm

Typical Performance







Specifications and information are subject to change without notice.

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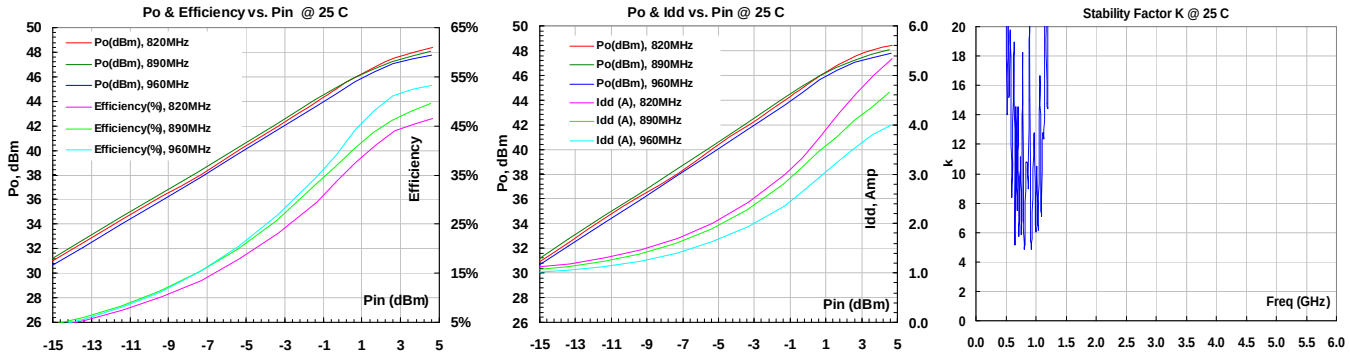
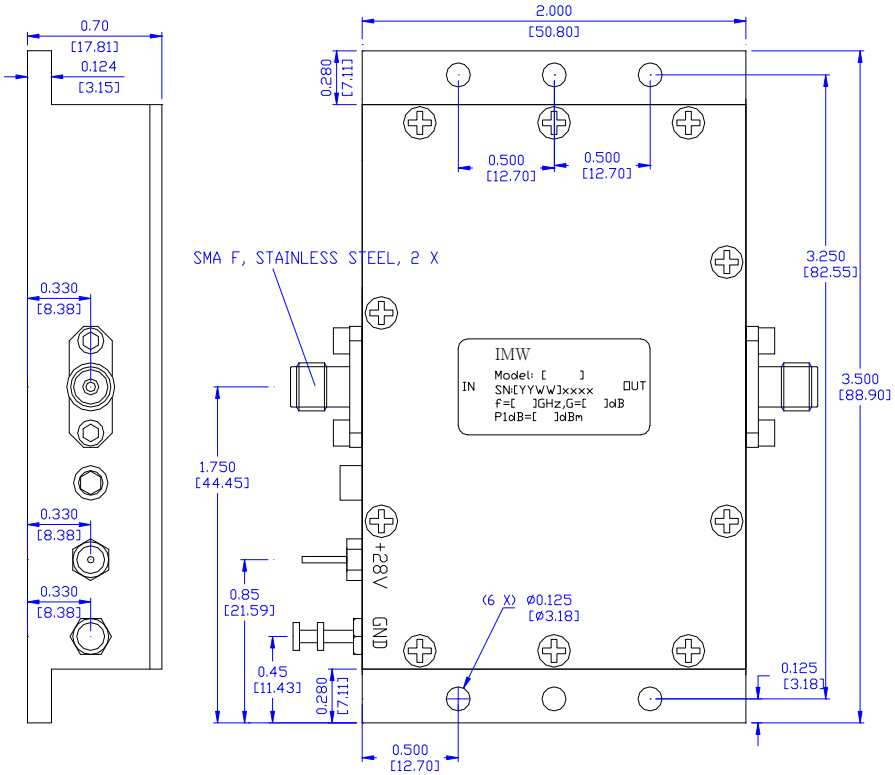


Outline, WP-1M Housing

Units:	INCH
	[mm]
Body:	Aluminum Alloy
Finish:	Clear Plating
RF Connector:	SMA F Stainless
+28V DC I/O:	Feedthru



Application Notes:

A. SMA Torque Wrench Selection

Always use a torque wrench with 5 ~ 6 inch-lb coupling torque setting for mating the SMA cables to the amplifier. Never use torque more than 8 inch-lb wrench for tightening the mating cable to the connector. Otherwise, the permanent damage will occur to the SMA connectors of the amplifier. 8710-1582 (5 inch-lb) is one of the ideal torque wrench choice from Agilent Technology.

B. Mounting the Amplifier

Use six pieces of #4-40 with longer than 3/8" screws for mounting the amplifier on a metal-based chase. Flat and spring washers are needed to prevent the screw loosening during the shock and vibration. Always use the appropriate torque setting of the power screwdriver to mount them. Proper heat sink is required for continuous operation.

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