

WPA0810C

820 – 960 MHz, 50 Watt Power Amplifier

August 2014, REV A



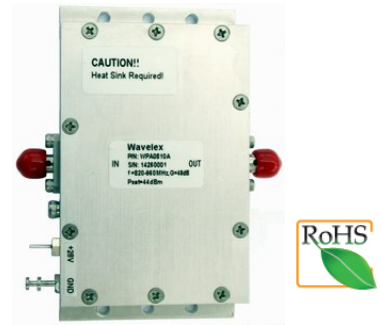
Key Features

- 820 ~ 960 MHz, 50 Ohm Impedance
- 47.0 dBm P_{1dB}
- 46.0 dB Gain
- 1.22:1 VSWR
- 2.5 dB Noise Figure
- 57.0 dBm Output IP₃
- Unconditional Stable
- Infinite Load VSWR Protection
- Single DC Power Supply
- Precision Machined Housing
- RoHS Compliant

Applications

- Cellular, GSM
- Mobile Infrastructures
- Fixed Wireless Communication

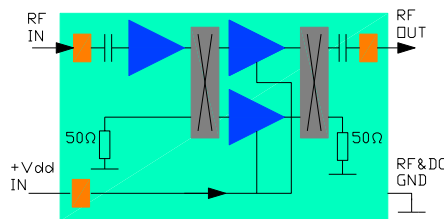
Additional heat sink is required for continuous operation!



Absolute Maximum Ratings

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

Functional Block Diagram



Ordering Information

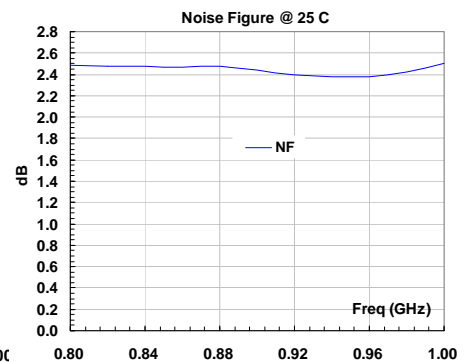
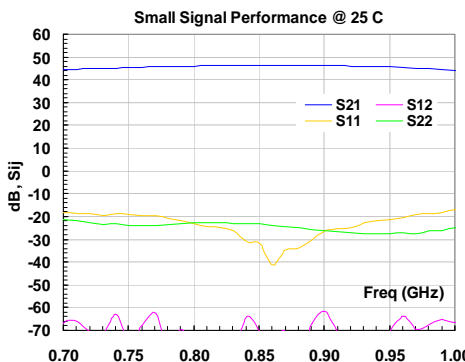
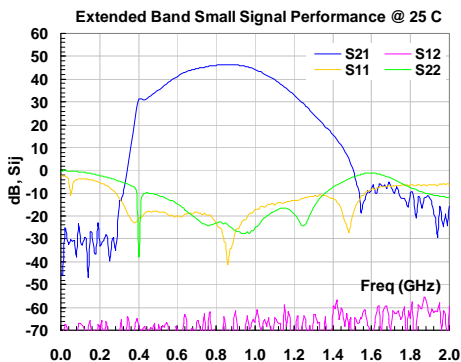
Model	Connectors
WPA0810C	SMA Female

Marking: WPA0810C

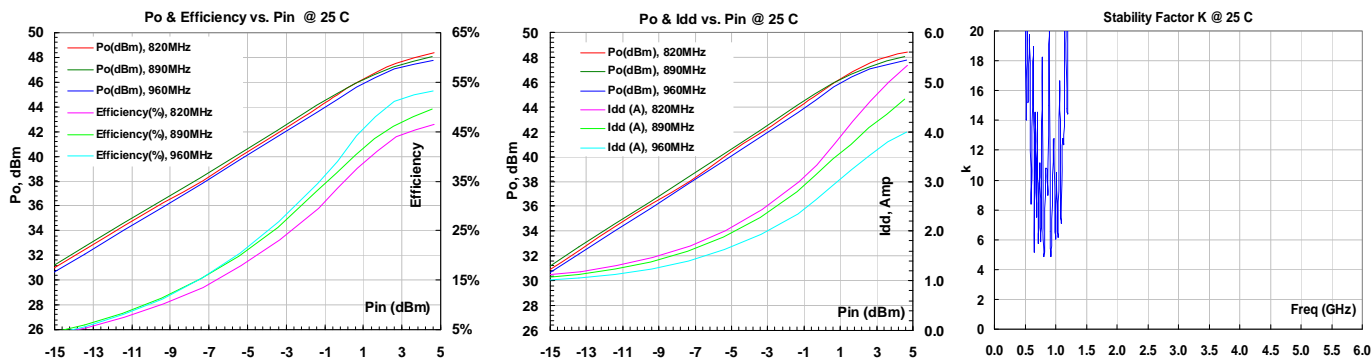
Specifications (Tested at +25°C)

Item	Symbol	Test Constraints	Min	Nom	Max	Unit
Frequency Range	BW	50 Ohm Impedance	820		960	MHz
Small Signal Gain	S ₂₁	820 – 960 MHz	44.0	46.0	48.0	dB
Input VSWR	SWR ₁	820 – 960 MHz		1.22:1	1.45:1	Ratio
Output VSWR	SWR ₂	820 – 960 MHz		1.22:1	1.45:1	Ratio
Gain Flatness	ΔG	820 – 960 MHz		+/- 0.5	+/- 1.0	dB
Reverse Isolation	S ₁₂	820 – 960 MHz		70		dB
Noise Figure	NF	820 – 960 MHz		2.5		dB
Output Power 1dB Compression Point	P _{1dB}	820 – 960 MHz	45.0	47.0		dBm
Output-Third-Order Interception point	IP ₃	Two-Tone, P _{out} = 40 dBm each, 1 MHz separation	55	57		dBm
DC Power Added Efficiency	η	P _o = 50W	40	45		%
Current Consumption	I _{dd}	V _{dd} = +28 V, 0.88 A quiescent DC bias			5.5	A
Power Supply Operating Voltage	V _{dd}		+26		+30	V
Operating Temperature	T _o	Base plate	-20		+70	°C
Thermal Resistance	R _{th,c}	Junction to case			1.3	°C/W
Maximum CW RF Input Power	P _{IN, MAX}	DC – 6 GHz			7	dBm

Typical Performance

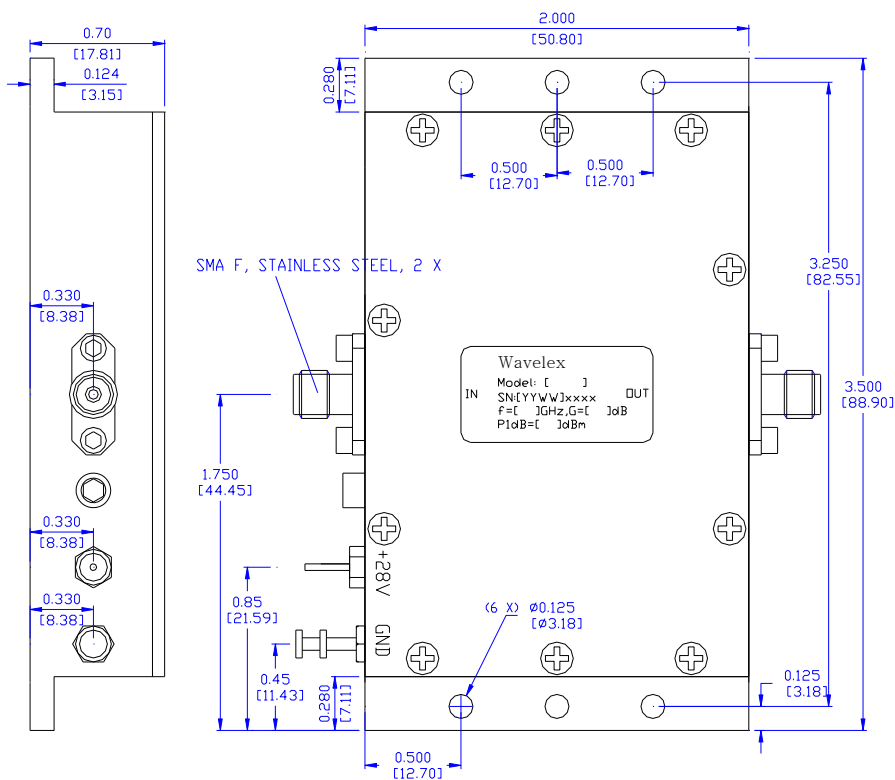


Specifications and information are subject to change without notice.



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.