



IPA017140A

175 - 1400 MHz, 1 W POWER AMPLIFIER

REV A
March 2014

Key Features



- 175 ~ 1400 MHz, 50 Ohm Impedance
- 29 dBm P_{1dB}
- 14 dB Gain
- 1.8:1 VSWR
- 43 dBm IP₃
- Precision Machined Housing
- Single DC Power Supply
- Meet MIL-STD-202g

Applications

- VHF, UHF, Avionics and GPS
- PA Driver Amplifiers
- RF Bench Tests
- Fixed Wireless Applications



Absolute Maximum Ratings

Parameters	Units	Ratings
DC Power Supply Voltage	V	-0.5, 16
RF Input CW Power	dBm	24
Storage Temperature	°C	-40 ~ +85
Operating Temperature	°C	-40 ~ +85

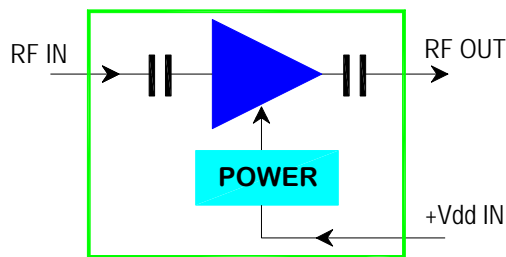
Additional heat sink is required for continuous operation!

Specifications

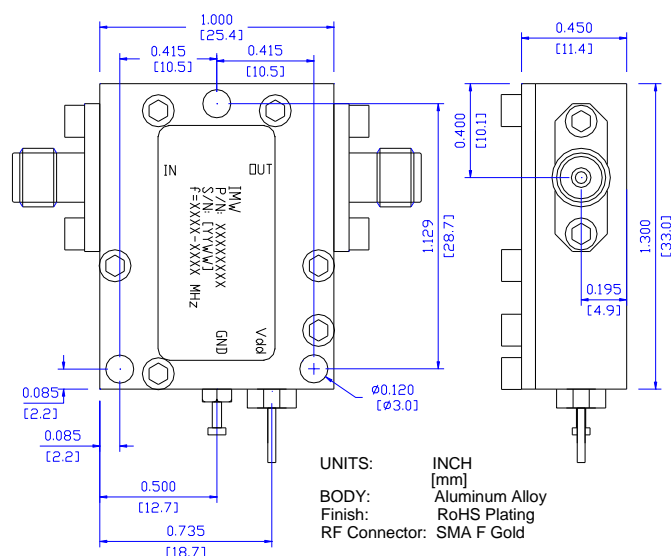
Summary of the key electrical specifications at 25°C

Index	Testing Item	Symbol	Test Constraints	Min	Nom	Max	Unit
1	Frequency Range	BW	50 Ohm Impedance	175		1400	MHz
2	Gain	S ₂₁	175 – 1400 MHz	12	13.5	15	dB
3	Gain Variation	ΔG	175 – 1400 MHz		+/- 0.5		dB
4	VSWR	SWR _i	175 – 1400 MHz all RF ports		1.8:1	2:1	Ratio
5	Reverse Isolation	S ₁₂	175 – 1400 MHz		25		dB
6	Noise Figure	NF	175 – 1400 MHz		3.7		dB
7	Output Power 1dB Compression Point	P _{1dB}	175 – 1400 MHz	27	29		dBm
8	Output-Third-Order Interception Point	IP ₃	Two-Tone, P _{out} = 10 dBm each, 1 MHz Separation	40	43		dBm
9	Current Consumption	I _{dd}	V _{dd} = +12.0 V		220		mA
10	Power Supply Operating Voltage	V _{dd}		+12		+16	V
11	Operating Temperature	T _o		-40		+85	°C
12	Thermal Resistance	R _{th,c}	Junction to case			32	°C/W

Functional Block Diagram



Outline, IP-3 Housing



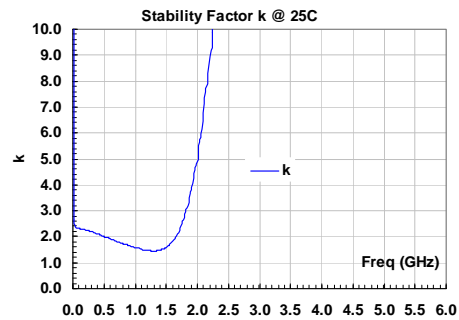
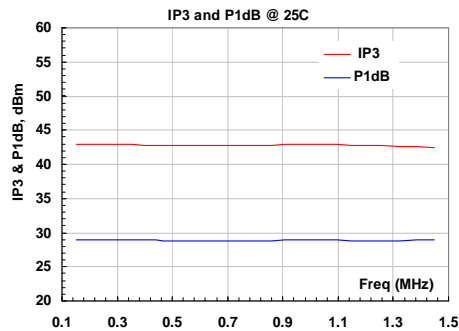
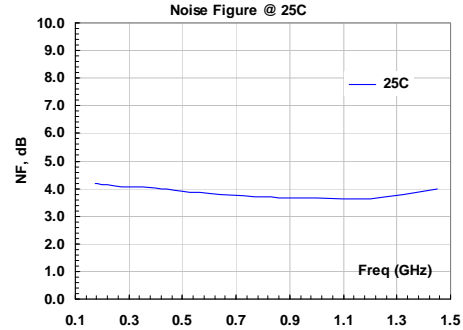
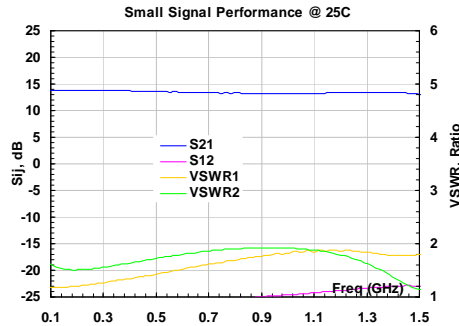
Ordering Information

Model Number	Connectors	
	IN	OUT
IPA017140A	SMA Female	SMA Female

Specifications and information are subject to change without notice.



Typical Data



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 three pieces of #2-56 with longer than 9/16" 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.
