IPA003009A

30 - 90 MHz, 1 W POWER AMPLIFIER

REV A
March 2014

Key Features

- 30 ~ 90 MHz, 50 Ohm Impedance
- 30 dBm P_{1Db}
- 17 dB Gain
- 1.5:1 VSWR
- 43 dBm IP_3
- Precision Machined Housing
- Single DC Power Supply
- Meet MIL-STD-202g

Applications

- VHF
- 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

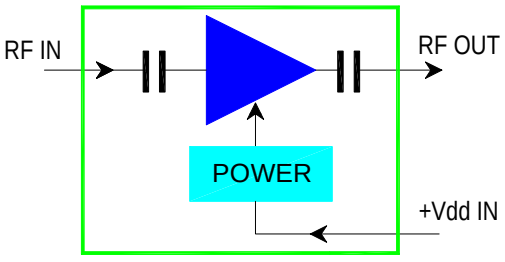
Additional heat sink is required for continuous operation!

Specifications

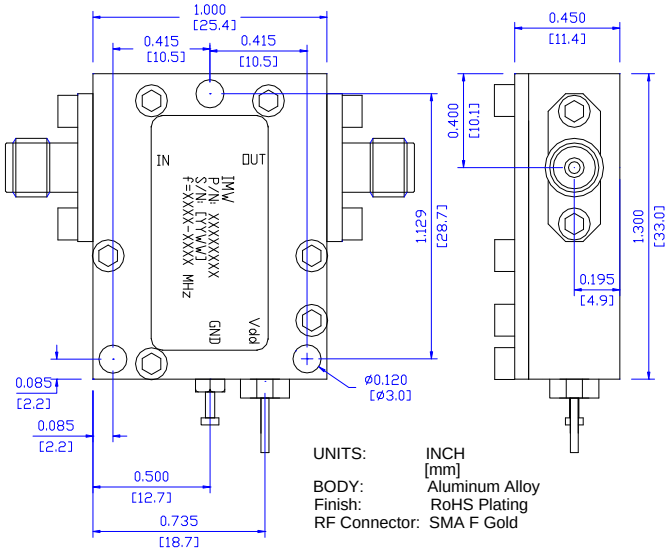
Summary of the key electrical specifications at 25°C

Index	Testing Item	Symbol	Test Constraints	Min	Nom	Max	Unit
1	Frequency Range	BW	50 Ohm Impedance	30		90	MHz
2	Gain	S_{21}	30 – 90 MHz	15	17	19	dB
3	Gain Variation	ΔG	30 – 90 MHz		+/- 0.2		dB
4	VSWR	SWR_i	30 – 90 MHz all RF ports		1.5:1	2:1	Ratio
5	Reverse Isolation	S_{12}	30 – 90 MHz		25		dB
6	Noise Figure	NF	30 – 90 MHz		2.5		dB
7	Output Power 1dB Compression Point	P_{1dB}	30 – 90 MHz	28	30		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
IPA003009A	SMA Female	SMA Female

Specifications and information are subject to change without notice.

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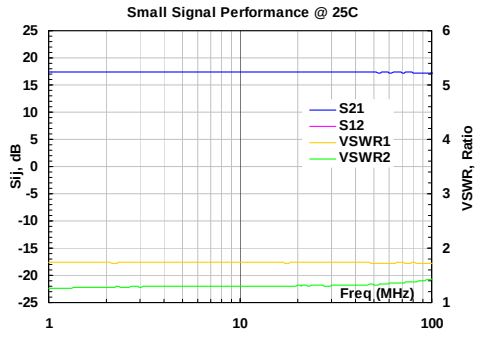
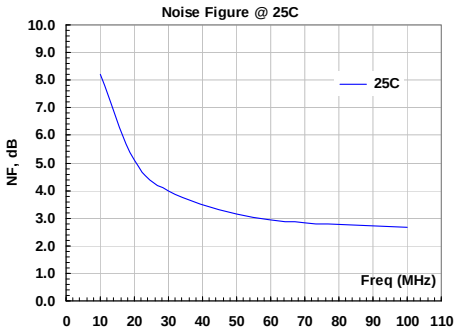
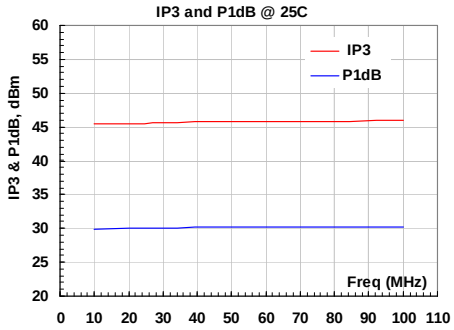
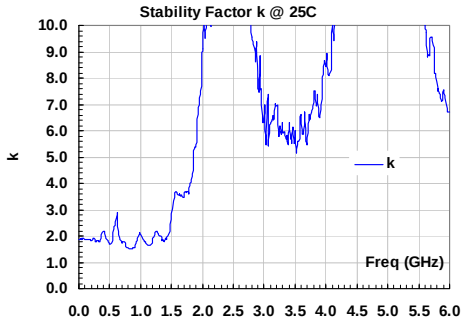
Typical Data









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.

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