WPM0015A

0.01 ~ 1.5 GHz 1 WATTS WIDE BAND POWER AMPLIFIER

REV A
February 2017

Key Features

- 10 ~ 1500 MHz
- 4.5 dB Noise Figure
- 45.0 dBm Output IP_3
- 15.5 dB Gain
- +/-0.3 dB Gain Flatness
- 29.0 dBm P_{1dB}
- 1.8:1 VSWR
- Flange Mount Package
- >68 Years MTBF
- RoHS Compliant

Product Description

CAUTION: ELECTROSTATIC DISCHARGE SENSITIVE

WPM0015A is integrated with WanTcom proprietary power amplifier technology, high frequency micro electronic assembly techniques, and high reliability design to realize optimum power added efficiency, wideband, high linearity, and unconditional stable performances together. With single +10.0V DC operation, the amplifier has optimal input and output matching in the specified frequency range at 50-Ohm impedance system. The amplifier has standard WanTcom WPM-3 Gold plated pallet.

The amplifier is designed to meet the rugged standard of MIL-STD-202g.

Applications

- Mobile Infrastructures
- GPS
- Cellular
- Defense
- Security System
- Measurement
- Fixed Wireless

Specifications

Summary of the electrical specifications WPM0015A at room temperature

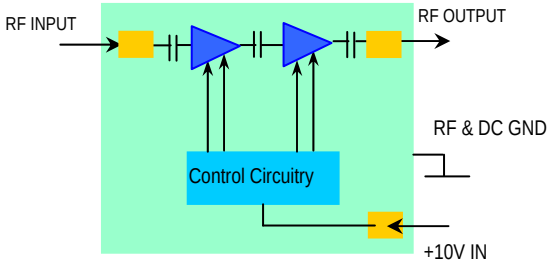
Index	Testing Item	Symbol	Test Constraints	Min	Nom	Max	Unit
1	Gain	S_{21}	10 – 1500 MHz	12.7	13.5	15	dB
2	Gain Variation	ΔG	10 – 1500 MHz		+/-0.2	+/-0.3	dB
3	Input VSWR	SWR_1	10 – 1500 MHz			2:1	Ratio
4	Output VSWR	SWR_2	10 – 1500 MHz			2:1	Ratio
5	Reverse Isolation	S_{12}	10 – 1500 MHz	25			dB
6	Noise Figure	NF	100 – 150 MHz, Vdd = 8.0V, Idd = 210 mA		4.5		dB
7	Output 1dB Gain Compression Point	P_{1dB}	10 – 150 MHz, Vdd = 10.0V, Idd = 210 mA	28	29		dBm
8	Output-Third-Order Interception Point	IP_3	Two-Tone, P_{out} = 10 dBm each, 1 MHz separation	43	45		dBm
9	Current Consumption	I_{dd}	V_{dd}= +10.0 V		210		mA
10	Power Supply Voltage, Positive	V_{dd}		+6	+10	+12	V
11	Thermal Resistance	$R_{th,c}$	Junction to case			32	°C/W
12	Operating Temperature	T_o		-40		+85	°C
13	Maximum RF CW Input Power	$P_{IN, MAX}$	DC – 6.0 GHz			20	dBm

Absolute Maximum Ratings

Parameters	Units	Ratings
DC Power Supply Voltage	V	12
Drain Current	mA	300
Total Power Dissipation	W	3
RF Input Power	dBm	20
Channel Temperature	°C	150
Storage Temperature	°C	-55 ~ 125
Operating Temperature	°C	-40 ~ 85
Thermal Resistance, last stage	°C/W	32

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

Functional Block Diagram



Ordering Information

Model Number	WPM0015A

Specifications and information are subject to change without notice.

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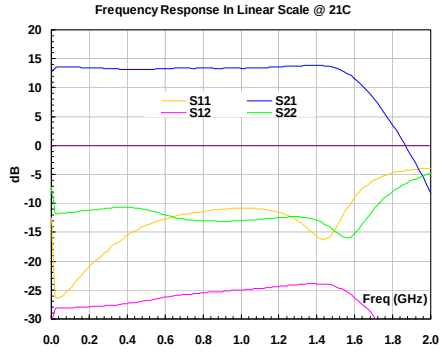
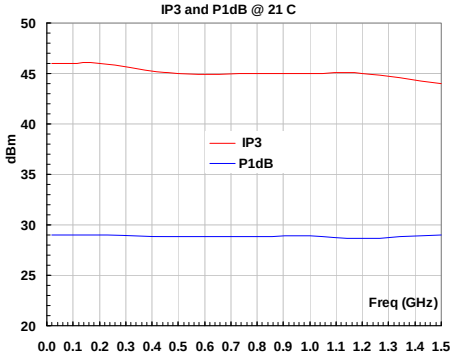
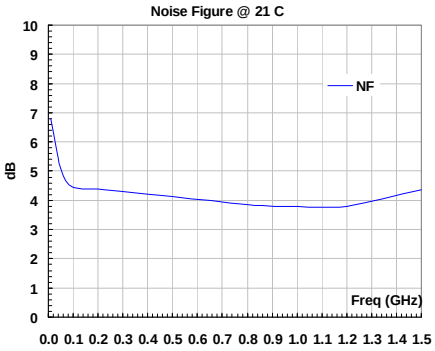
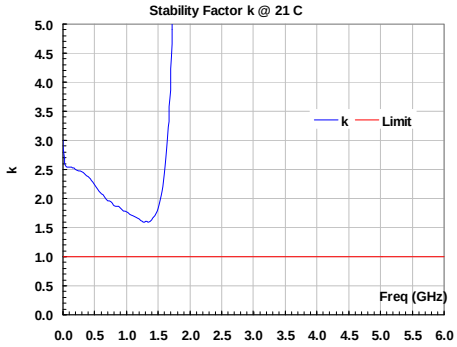
Typical Data





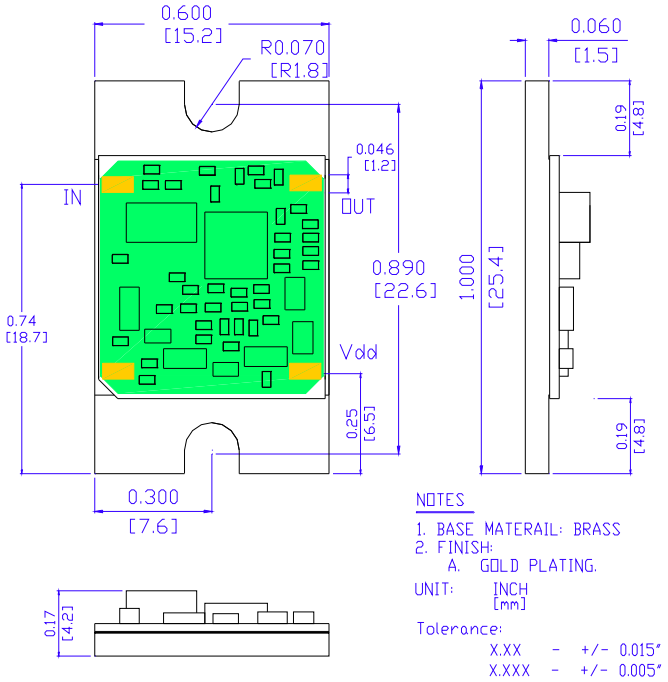




Outline,

1. WPM-3

UNITS:	INCH [mm]
BODY:	Brass
Finish:	Gold Plating
RF Launches:	Microstrip
V_{dd} PWR:	Microstrip



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Application Notes:

A. Mounting the Amplifier

Use two pieces of #4-40 or M3 with longer than 3/8" screws for mounting the amplifier on a metal-based chase or heat sink. The thermal compound or film is recommended between the bottom of the pallet and heat sink for maximum heat dissipation. The sufficient heat sink is required. 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 the amplifier.

Always be very careful to solder the RF and DC connections to the amplifier. Use 0.01" diameter soldering iron tip to solder the connections. Do not touch any components of the amplifier.

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