



# WPM0130M

## 1 – 90 MHz LOW NOISE WIDE BAND 1 WATT AMPLIFIER

REV B

February 2017

### Key Features



- 50 Ohm Impedance
- 1 ~ 90 MHz
- 1.5 dB Noise Figure
- 43.0 dBm Output  $IP_3$
- 43.0 dB Gain
- +/-0.3 dB Gain Flatness
- 30.0 dBm  $P_{1dB}$
- 1.25:1 VSWR
- Single DC Power Supply
- >34 Years MTBF
- Unconditional Stable
- RoHS Compliant

### Product Description

WPM0130M is integrated with WanTcom proprietary low noise amplifier technology, high frequency micro electronic assembly techniques, and high reliability design to realize optimum low noise figure, wide bandwidth, high linearity, and unconditional stable performances together. With single DC voltage operation, the amplifier has optimal input and output matching in the specified frequency range at 50-Ohm impedance system. The amplifier has standard SMA connectorized WP-5 Gold plated housing.

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

CAUTION:



ELECTROSTATIC DISCHARGE SENSITIVE

### Applications

- SW Communications
- Land Mobiles
- Defense
- Security System
- Measurement
- Fixed Wireless



### Specifications

Summary of the electrical specifications WPM0130M at room temperature

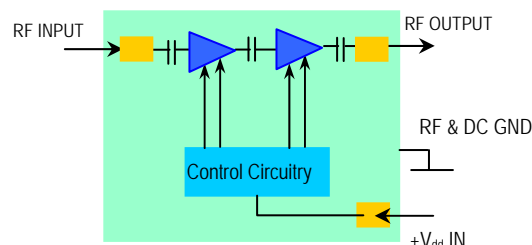
Index	Testing Item	Symbol	Test Constraints	Min	Nom	Max	Unit
1	Gain	$S_{21}$	1 – 90 MHz		43		dB
2	Gain Variation	$\Delta G$	1 – 90 MHz		+/- 0.3	+/-0.5	dB
3	Input VSWR	$SWR_1$	1 – 90 MHz		1.25:1	1.5:1	Ratio
4	Output VSWR	$SWR_2$	1 – 90 MHz		1.25:1	1.5:1	Ratio
5	Reverse Isolation	$S_{12}$	1 – 90 MHz		58		dB
6	Noise Figure	NF	10 – 30 MHz			2.5	dB
			30 – 90 MHz		0.8	1.2	
7	Output 1dB Gain Compression Point	$P_{1dB}$	1 – 90 MHz	29	30		dBm
8	Output Third Order Interception Point	$IP_3$	Two-tone, $P_{out}=+10$ dBm each, 1 MHz sep.	40	43		dBm
9	Current Consumption	$I_{dd}$	$V_{dd}$		260		mA
10	Power Supply Voltage	$V_{dd}$		+9.7	+10	+10.5	V
11	Thermal Resistance, Junction to Case	$R_{th,c}$	Last stage transistor $V_{ds} = 10V$ , $I_{ds} = 210$ mA,		20	30	°C/W
12	Operating Temperature	$T_o$	--	-40		+85	°C
13	Maximum Input CW RF Power	$P_{IN, MAX}$	DC – 6 GHz			15	dBm

### Absolute Maximum Ratings

Parameters	Units	Ratings
DC Power Supply Voltage	V	-0.5, +12
Drain Current	mA	300
Total Power Dissipation	mW	3500
Input CW RF Power	dBm	15
Channel Temperature	°C	150
Storage Temperature	°C	-55 ~ 125
Operating Temperature	°C	-40 ~ 85
Thermal Resistance	°C/W	30

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

### Functional Block Diagram



### Ordering Information

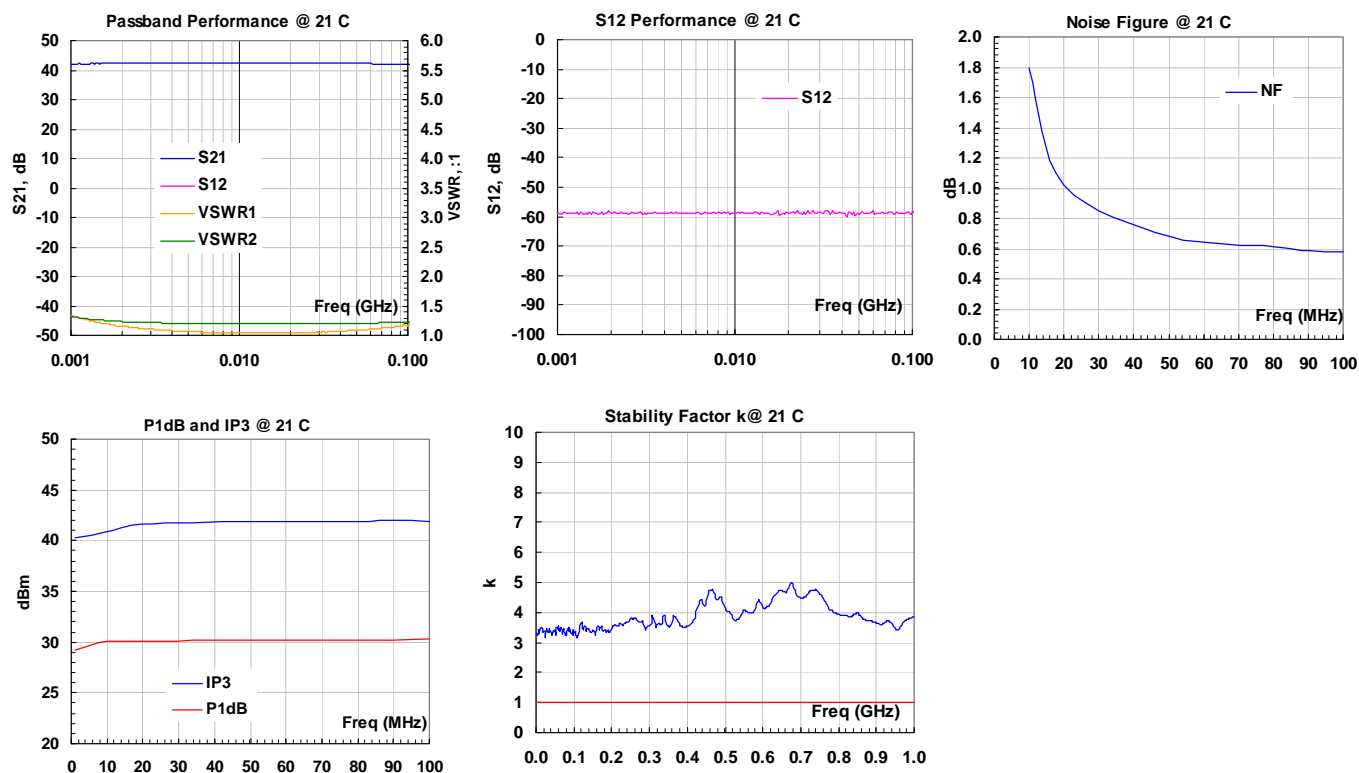
Model Number	WPM0130M
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Specifications and information are subject to change without notice.

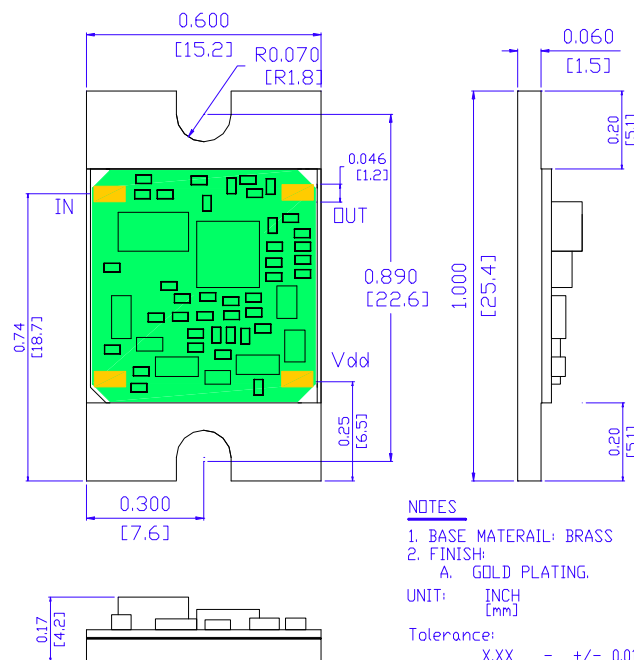
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**Typical Data****Outline, WPM-3**

UNITS: INCH  
[mm]  
BODY: Brass  
Finish: Gold Plating  
RF Launches: Microstrip  
V<sub>dd</sub> 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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