

**WPM0002F****50- 150 MHz 2 Watts WIDE BAND POWER AMPLIFIER****REV B**  
**June 2016**

## Key Features



- 50 Ohm Impedance
- 50 ~ 150 MHz
- 1.8 dB Noise Figure
- 43.0 dBm Output IP<sub>3</sub>
- 35.0 dB Gain
- +/-0.2 dB Gain Flatness
- 33.0 dBm P<sub>sat</sub>
- 1.35:1 VSWR
- Single Power Supply
- >34 Years MTBF
- Unconditional Stable
- RoHS Compliant

## Product Description

WPM0002F is integrated with WanTcom proprietary power amplifier technology, high frequency micro electronic assembly techniques, and high reliability design to realize optimum low noise figure, 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 miniature WPM-3 Gold plated pallet.

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

CAUTION:

ELECTROSTATIC DISCHARGE  
SENSITIVE

## Applications

- FM Communications
- Land Mobiles
- Broadcast
- Security System
- Measurement
- Fixed Wireless

## Specifications

Summary of the electrical specifications WPM0002F at room temperature

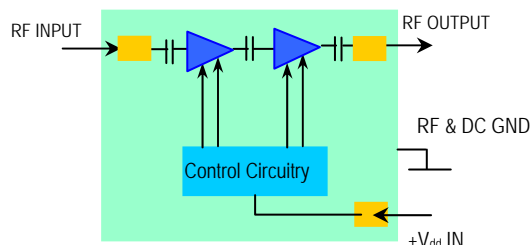
Index	Testing Item	Symbol	Test Constraints	Min	Nom	Max	Unit
1	Gain	S <sub>21</sub>	50 – 150 MHz		35		dB
2	Gain Variation	ΔG	50 – 150 MHz		+/- 0.2	+/-0.4	dB
3	Input Return Loss	S <sub>11</sub>	50 – 150 MHz	13	15		dB
4	Output Return Loss	S <sub>22</sub>	50 – 150 MHz	14	17		dB
5	Reverse Isolation	S <sub>12</sub>	50 – 150 MHz		70		dB
6	Noise Figure	NF	50 – 150 MHz		1.5	3.0	dB
7	Output Power 1dB Compression Point	P <sub>sat</sub>	50 – 150 MHz	32	33		dBm
8	Output-Third-Order Interception Point	IP <sub>3</sub>	Two-Tone, P <sub>out</sub> +10 dBm each, 1 MHz separation	40	43		dBm
9	Current Consumption	I <sub>dd</sub>	V <sub>dd</sub> = +10 V		465		mA
10	Power Supply Voltage	V <sub>dd</sub>		+9.7	+10	+10.5	V
11	Thermal Resistance	R <sub>th,c</sub>	Junction to case, last stage power transistor		15	20	°C/W
12	Operating Temperature	T <sub>o</sub>		-40		+85	°C
13	Maximum CW RF Input Power	P <sub>IN, MAX</sub>	0 – 6 GHz			15	dBm
14	Spurious	P <sub>o, sp</sub>	20 – 6000 MHz, P <sub>o</sub> = P <sub>sat</sub>	-75			dBc

## Absolute Maximum Ratings

Parameters	Units	Ratings
DC Power Supply Voltage	V	-0.5, 12
Drain Current	mA	500
Total Power Dissipation	W	5.0
RF Input Power	dBm	15
Channel Temperature	°C	150
Storage Temperature	°C	-55 ~ 125
Operating Temperature	°C	-40 ~ 85
Thermal Resistance	°C/W	20

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

## Functional Block Diagram



## Ordering Information

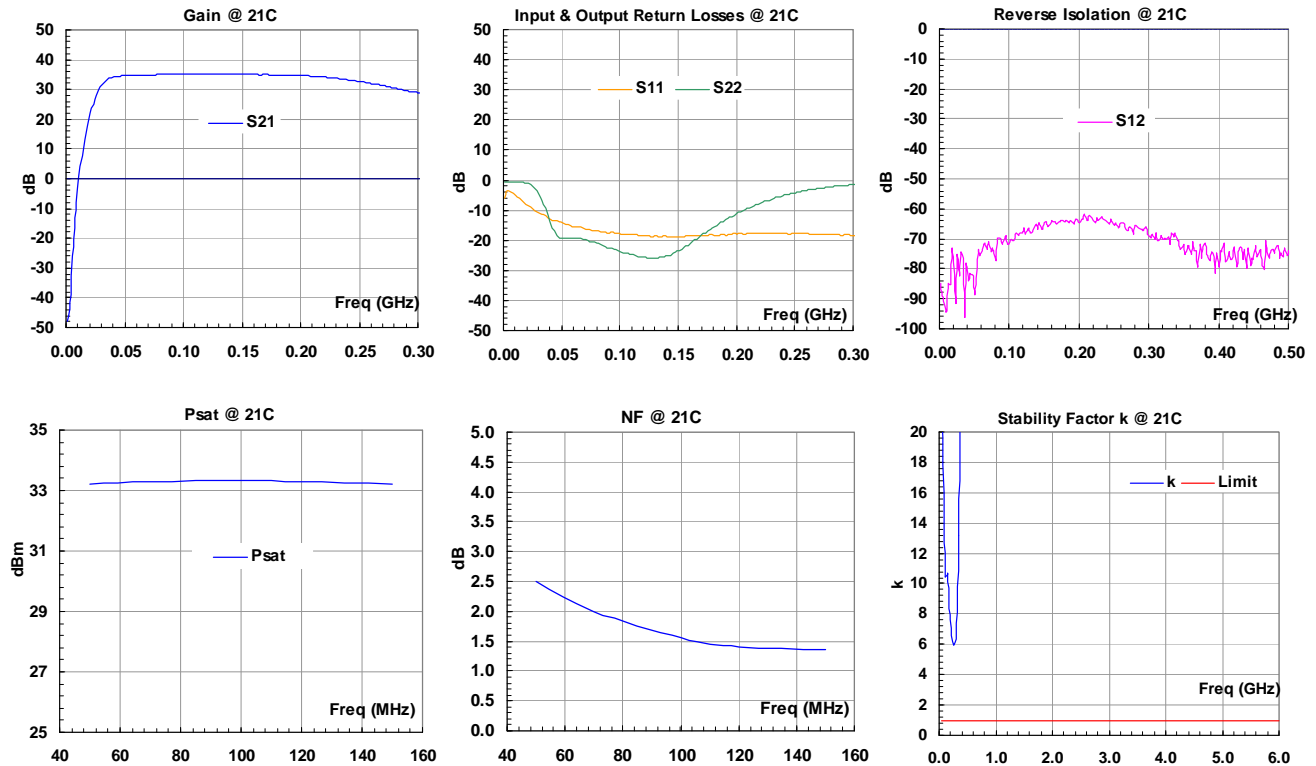
Model Number	WPM0002F
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Specifications and information are subject to change without notice.

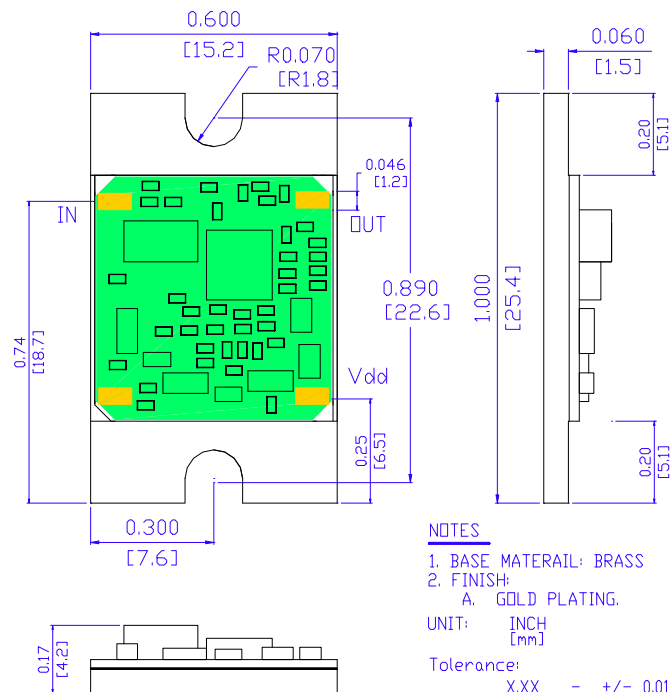
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## Typical Data



## Outline, WPM-3

RF & V<sub>dd</sub> I/O: 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 T-gon 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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