



# WPA25-3060C

## 2.4 – 2.6 GHz 30 Watts POWER AMPLIFIER

REV A  
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### Key Features



- 2.4 ~ 2.6 GHz
- 45% Power Added Efficiency
- 33.0 dB Gain
- 30 Watt  $P_{sat}$
- 1.25:1 VSWR
- Output Mismatch Protection
- Single power supply, +12V
- >34 years MTBF
- Unconditional stable
- RoHS compliant

### Product Description

WPA25-3060C integrates WanTcom proprietary low noise amplifier technology, high frequency micro electronic assembly techniques, and high reliability design to realize high power, high power added efficiency, high linearity, and unconditional stable performances together. With single +12V DC operation, the amplifier has optimal input and output matching in the specified frequency range at 50-Ohm impedance system. The amplifier has Class AB operation for higher power added efficiency while maintaining the high linearity.

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

### Applications

- Mobile Infrastructures
- WiMAX
- Defense
- Security System
- Measurement
- Fixed Wireless



### Specifications

Summary of the electrical specifications WPA25-3060C at room temperature

# Preliminary

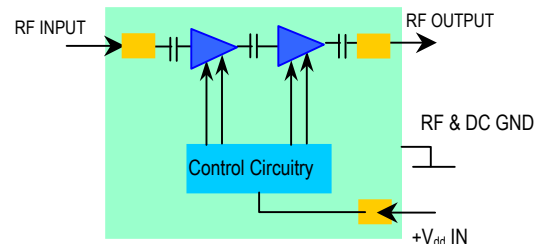
Index	Testing Item	Symbol	Test Constraints	Min	Nom	Max	Unit
1	Gain	$S_{21}$	2.4 – 2.6 GHz		33		dB
2	Gain Variation	$\Delta G$	2.4 – 2.6 GHz		+/- 0.5	+/-1.0	dB
3	Input VSWR	$SWR_1$	2.4 – 2.6 GHz		1.25:1	1.4:1	Ratio
4	Output VSWR	$SWR_2$	2.4 – 2.6 GHz		1.25:1	1.4:1	Ratio
5	Reverse Isolation	$S_{12}$	2.4 – 2.6 GHz	60	70		dB
6	Noise figure	NF	2.4 – 2.6 GHz			2.0	dB
7	Power Added Efficiency	$\eta$	At $P_{sat}$		45		%
8	Output Saturated Power	$P_{sat}$	2.4 – 2.6 GHz	25	30		W
9	Error Vector Magnitude	EVM	$P_o = 37$ dBm		2		%
10	Current Consumption	$I_{dd}$	$V_{dd} = +12$ V, no RF signal at input		2.0		A
11	Power Supply Voltage	$V_{dd}$		+11	+12	+12.5	V
12	Thermal Resistance	$R_{th,c}$	Last stage Power Transistor, Junction to case			2.0	$^{\circ}C/W$
13	Operating Temperature	$T_o$		-40		+85	$^{\circ}C$
14	Maximum Average RF Input Power	$P_{IN,MAX}$	2.4 – 2.6 GHz			20	dBm
15	Output Maximum Load Mismatch	$SWR_{load}$	2.4 – 2.6 GHz			$\infty$	Ratio
16	Enable Control Function	EN	ON	3.7	5	12	V
			OFF	0	NC	0.2	V

### Absolute Maximum Ratings

Parameters	Units	Ratings
DC Power Supply Voltage	V	12.5
Drain Current	A	8
Total Power Dissipation	W	100
RF Input Power	dBm	20
Channel Temperature	$^{\circ}C$	150
Storage Temperature	$^{\circ}C$	-55 ~ 125
Operating Temperature	$^{\circ}C$	-40 ~ 85
Thermal Resistance	$^{\circ}C/W$	2.0

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

### Functional Block Diagram



### Ordering Information

Model Number	WPA25-3060C
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Specifications and information are subject to change without notice.

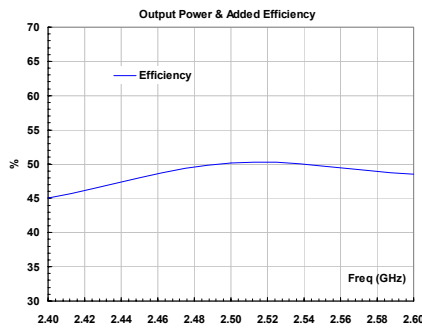
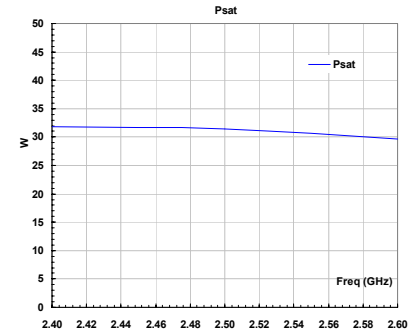
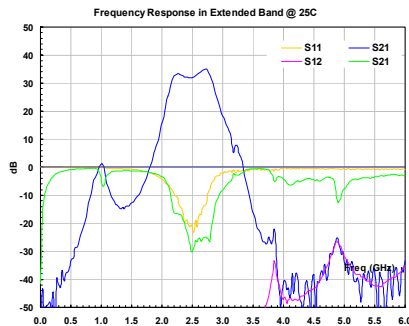
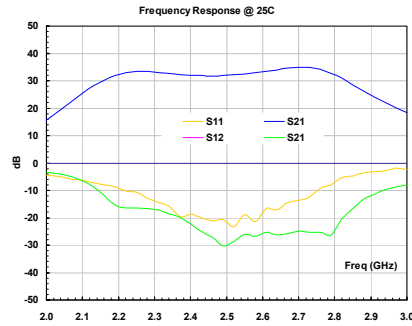


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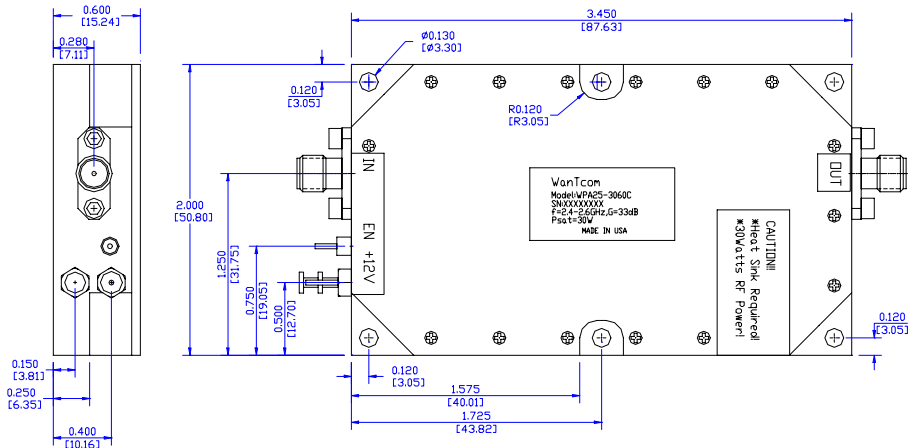
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### Typical Data



### Outline

UNITS: INCH  
[mm]  
BODY: Aluminum 6061  
Finish: Clear Plating,  
RoHS compliant  
RF Connector: SMA F Stainless  
V<sub>dd</sub> PWR: Feed through



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## **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 good torque wrench choice from Agilent Technology.

### **B. DC Power Line Connection**

Strip the insulation layer at the end of DC power supply wire. The stripped distance should be in the range of 0.100" to 0.200". The 18 ~ 22 American Wire Gauge wire is suitable. Wound the stripped terminal wire about 1 to 2 turns on the DC feed thru center pin. Solder the wounded wire and the center pin together. Clean the soldering area by Q-tip with alcohol to remove the flux and residue. Too long wire will cause DC voltage drop across the line and thus reduce the output RF power.

Repeat the process to solder the DC return wire on the ground turret.

### **C. Mounting the Amplifier**

Use three pieces of #4-40 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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