WHM2060AE

2.0 – 6.0 GHz LOW NOISE WIDE BAND AMPLIFIER

REV A
May 2009

Key Features

- 2.0 ~ 6.0 GHz
- 0.90 dB Noise Figure
- 22.0 dBm output IP_3
- 25.0 dB Gain
- 12.0 dBm P_{1dB}
- 1.5:1 VSWR
- Single Power Supply
- RoHS Compliant
- Unconditional Stable, $k > 1$
- RoHS Compliant
- MLS-1 Moisture Sensitivity Level

Product Description

WHM2060AE integrates WanTcom proprietary low noise amplifier technologies, high frequency micro electronic assembly techniques, and high reliability designs to realize optimum low noise figure, wideband, and high performances together. With single +5.0V DC operation, the amplifier has optimal input and output matching in the specified frequency range at 50-Ohm impedance system. The amplifier has standard 0.35" x 0.25" x 0.085" surface mount package.

The amplifier is designed to meet the rugged standard of MIL-STD-883.

Applications

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

Preliminary

Specifications

Summary of the key electrical specifications at room temperature

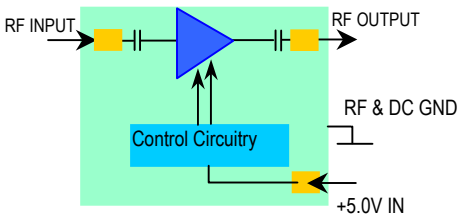
Index	Testing Item	Symbol	Test Constraints	Min	Nom	Max	Unit
1	Gain	S_{21}	2.0 – 6.0 GHz		25		dB
2	Gain Variation	ΔG	2.0 – 6.0 GHz		+/- 1.5		dB
3	Input VSWR	SWR_1	2.0 – 6.0 GHz		1.5	1.8	Ratio
4	Output VSWR	SWR_2	2.0 – 6.0 GHz		1.4	1.8	Ratio
5	Reverse Isolation	S_{12}	2.0 – 6.0 GHz		40		dB
6	Noise figure	NF	2.0 – 6.0 GHz		0.90	1.1	dB
7	Output Power 1dB compression Point	P_{1dB}	2.0 – 6.0 GHz	10	12		dBm
8	Output-Third-Order Interception point	IP_3	Two-Tone, P_{out} = 0 dBm each, 1 MHz separation		22		dBm
9	Current Consumption	I_{dd}	@ 25 °C		40		mA
10	Power Supply Voltage	V_{dd}		+4.7	+5.0	+5.3	V
11	Thermal Resistance	$R_{th,c}$	Junction to case			220	°C/W
12	Operating Temperature	T_o	Case temperature at the bottom of the housing	-40		+85	°C
13	Maximum Average RF Input Power	$P_{IN, MAX}$	DC – 13 GHz			10	dBm
14	Spurious	P_{spur}	DC – 13 GHz	-70			dBc

Absolute Maximum Ratings

Parameters	Units	Ratings
DC Power Supply Voltage	V	6.0
Drain Current	mA	70
Total Power Dissipation	mW	400
RF Input Power	dBm	30
Channel Temperature	°C	150
Storage Temperature	°C	-65 ~ 150
Operating Temperature	°C	-40 ~ +85
Thermal Resistance	°C/W	220

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

Functional Block Diagram



Ordering Information

Model Number	WHM2060AE

ESD resistance tube of 25 pieces is used for the packing. Contact factory for tape and reel packing option for higher volume order.

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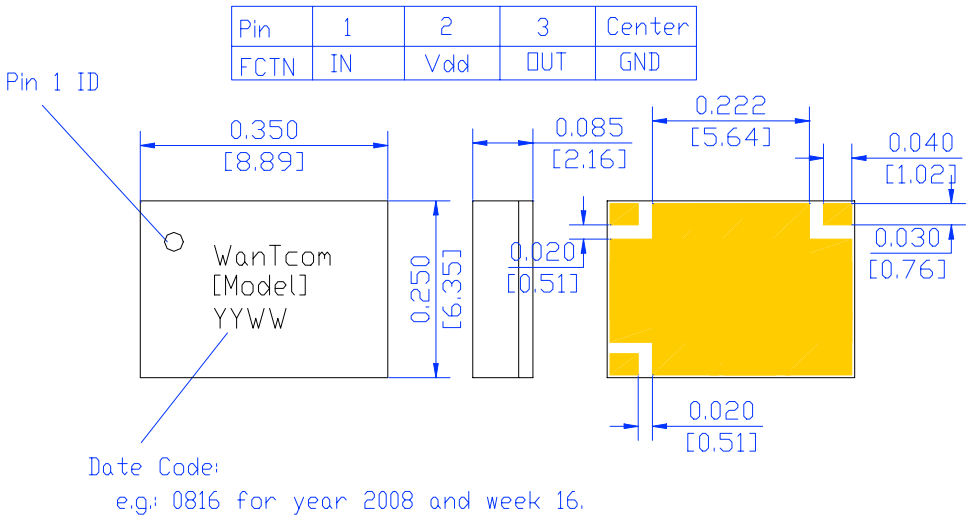
Outline,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FCTN IN Vdd OUT GND
Pin 1 ID
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[8.89]
0.085
[2.16]
0.222
[5.64]
0.040
[1.02]
0.030
[0.76]
0.020
[0.51]
0.250
[6.35]
WanTcom
[Model]
YYWW
0.020
[0.51]
Date Code:
e.g.: 0816 for year 2008 and week 16.

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