



1.5 – 2.8 GHz 2 WATTS LOW NOISE POWER AMPLIFIER WBPA1530A¹

WBPA1530A is a low noise figure, wideband, and high linearity class A power amplifiers with unconditional stable design. The amplifier offers typical 1.5 dB noise figure, 33.0 dBm output P_{1dB} , 38.0 dB gain, and 45 dBm output IP_3 at the frequency range from 1.5 GHz to 2.8 GHz.

WBPA1530A is most suitable for cellular base stations, wireless data communications, tower top amplifiers, cellular micro-cells, last-mile wireless communication systems, MMDS, WLL, and wireless measurement applications.

WBPA1530A is designed to meet the rugged standards of MIL-STD-202G.



Key Features:

Additional heat sink required!

Impedance:	50 Ohm
MTBF ² :	>150,000 hrs (17 Years)
Unconditional Stable:	k>1
Built-In Output Load Protection:	up to 10:1 VSWR
Low Noise:	1.5 dB
Output IP_3 :	45.0 dBm typical
Gain:	38.0 dB
Input VSWR:	1.5:1
Output VSWR:	1.6:1
P_{1dB} :	33 dBm typical
Single Power Supply:	600 mA, @ +10V
Frequency Range:	1.7 ~ 2.8 GHz
Operating Temperature:	-40 ~ +85 °C
Built-In Functions:	DC blocks at input and output, DC-DC converter, sequencing biases, temperature compensation circuits, and auto DC biases.

Preliminary

Absolute Maximum Ratings³:

Symbol	Parameters	Units	Absolute Maximum
V_{dd}	DC Power Supply Voltage	V	10.5
I_{dd}	DC Current	mA	700
P_{diss}	Total Power Dissipation	W	7.0
$P_{in,Max}$	RF Input Power	dBm	10
T_{ch}	Channel Temperature	°C	175
T_{STG}	Storage Temperature	°C	-55 ~ 125
$T_{O,MAX}$	Maximum Operating Temperature	°C	-40 ~ 65
$R_{th,c}$	Case-Channel Thermal Resistance	°C/W	20

¹ Specifications are subject to change without notice.

² MTBF: Mean Time Between Failure, Per TR-NWT-000332, ISSUE 3, SEPTEMBER, 1990, T=40°C

³ Operation of this device above any one of these parameters may cause permanent damage.



Specifications:

a) Table 1 Summary of the electrical specifications of WBPA1530A at room temperature

Index	Testing Item	Symbol	Test Constraints	Nom	Min	Max	Unit
1	Gain	S_{21}	1.5 – 2.8 GHz	38	36		dB
2	Gain Variation	ΔG	1.5 – 2.8 GHz	+/- 0.5		+/- 1.0	dB
3	Input VSWR	SWR_1	1.5 – 2.8 GHz	1.5:1	1.6:1		
4	Output VSWR	SWR_2	1.5 – 2.8 GHz	1.6:1	1.8:1		
5	Reverse Isolation	S_{12}	1.5 – 2.8 GHz	70	60		dB
6	Noise figure	NF	1.5 – 2.8 GHz	1.5		1.8	dB
7	Output P_{1dB} compression	P_{1dB}	1.5 – 2.8 GHz	33	31		dBm
8	Output-Third-Order Interception point	$TOIP_3$	Two-Tone, $P_{out} = +20$ dBm each, 1 MHz separation	45	43		dBm
9	Maximum RF Input Power	$P_{IN,MAX}$	1.5 – 2.8 GHz			10	dBm
10	Maximum Load Mismatch	$SWR_{2,MAX}$	1.5 – 2.8 GHz			10:1	
11	Current Consumption	I_{dd}	$V_{dd} = +10$ V	600			mA
12	Power Supply Voltage	V_{dd}		+10	+9	+10.5	V
13	Operating Temperature	T_o			-40	+65	°C

WBPA1530A Mechanical Outline: WP-9

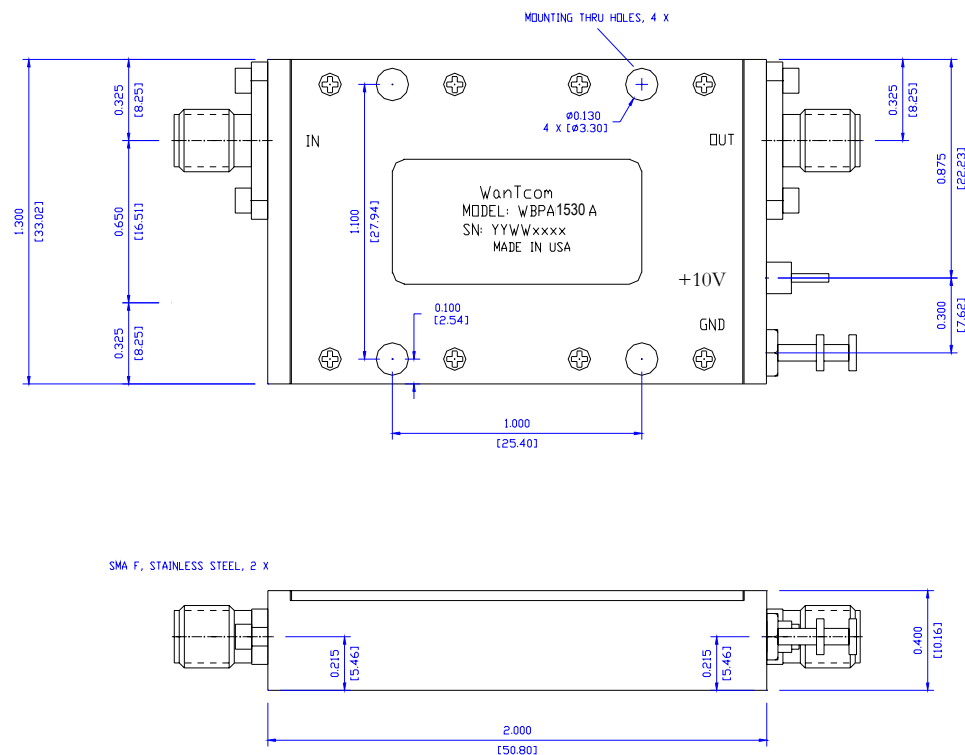


FIG. 1 WP-9 Outline

Ordering Information

Model Number:	WBPA1530A
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