



Product Features

- 910 ~ 920MHz (ISM band)
- 550W CW Peak Power @ 50V
- 66% Drain Efficiency @ 50V
- Excellent Ruggedness
- Excellent Thermal Stability

Applications

- Industrial Heating and Drying
- Scientific
- Medical
- Plasma Generator



Description

The RNP09550-20 is designed for Industrial, Scientific, Medical (ISM) and Plasma Generator applications at 915MHz. This Amplifier is suitable for use in CW, pulse and linear applications. This high efficiency rugged device is targeted to replace Industrial magnetrons and other vacuum tubes currently powering industrial heating, drying, plasma lighting and medical systems.

Electrical Specifications @ $V_{DS} = 50V, T = 25^{\circ}C, 50\Omega$ System

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency	MHz	910	-	920	fo
Operating Bandwidth	MHz	-	10	-	OBW
CW Output Power	dBm	57.4	-	-	Po
Input Power	dBm	-	-2.6	-	PI
Power Gain	dB	57	60	-	Gp
Gain Flatness	dB	-	-	±0.5	Gf
Input Return Loss	dB	-	-	-20	S11
Operating Voltage	V	V _{DC1} : 5.6±1%			-
		V _{DC2} : 50 ±1%			
Current Consumption	5.6V	-	0.35	0.4	IDD
	50V	-	16.6	-	
Efficiency @ 57.4dBm	%	63	66	-	Eff

* Custom design available

Environmental Characteristics

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Case Temperature	°C	0	-	60	Ta
Storage Temperature	°C	-40	-	100	Tstg
Relative humidity w/o condensation	%	-	-	95	RH

Mechanical Specifications

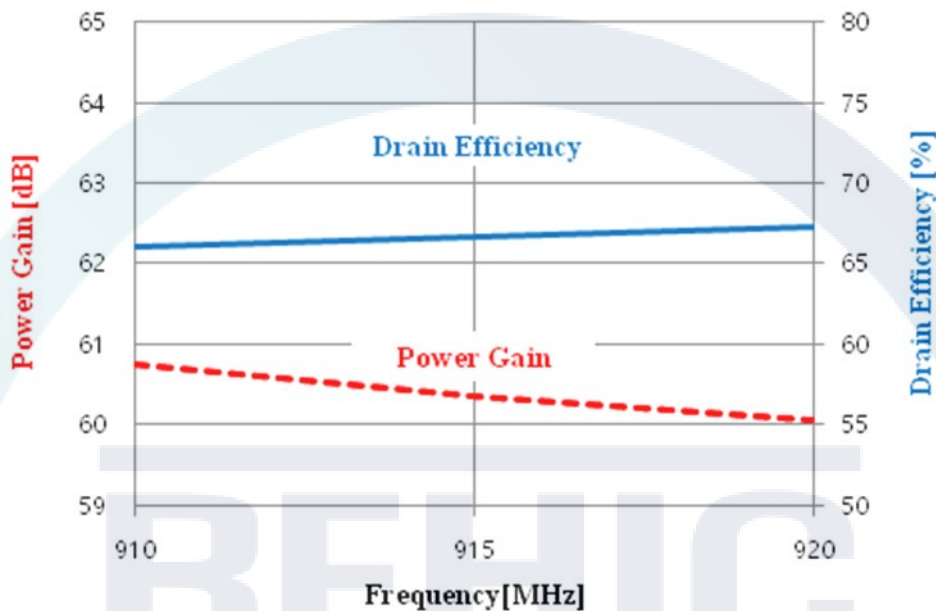
PARAMETER	UNIT	VALUE
Dimensions (L x W x H)	mm	240 x 198 x 26
Weight	Kg	1.15
RF Input Connector	-	SMA (Female)
RF Output Connector	-	N-type (Female)
I/O Connector	-	DS1016-20MASIBB (SHENZHEN JINLING ELECTRONICS)
Cooling	-	External Heat-sink & Airflow

RFHIC
www.rfhic.com

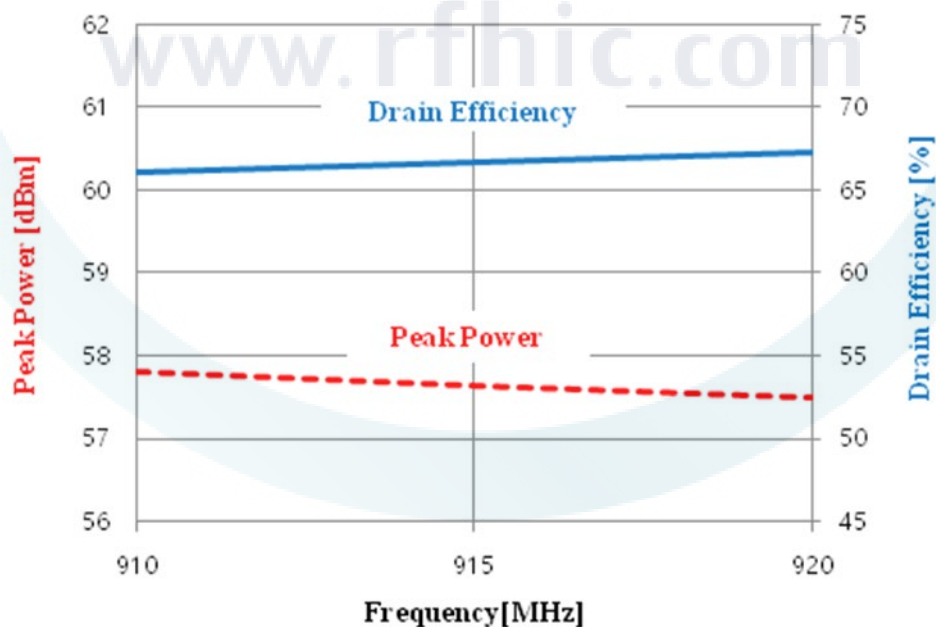
Typical CW Performance Charts

* Bias condition (VDS=50V, Tc=25°C)

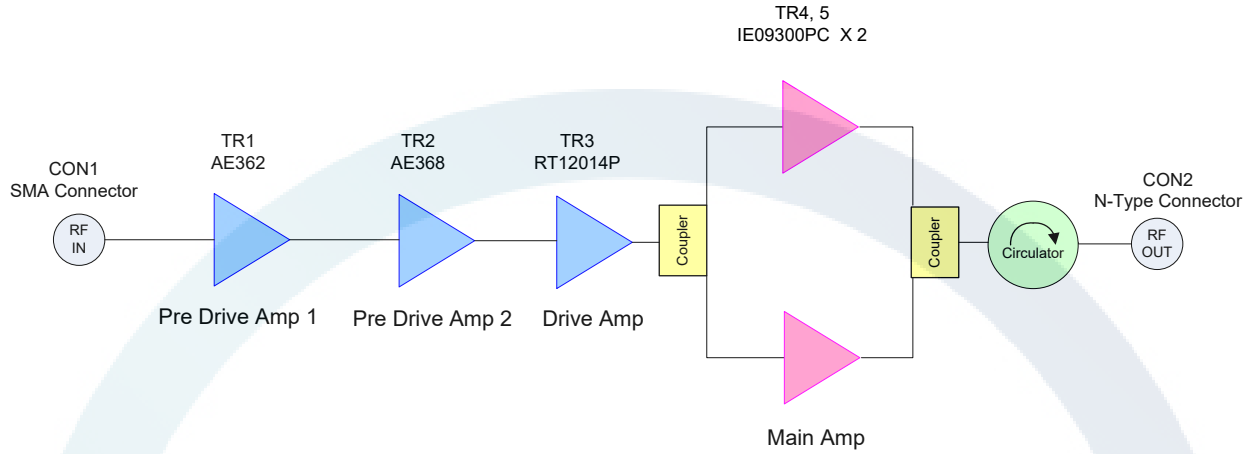
Peak Power, Drain Efficiency vs. Frequency



Power Gain, Drain Efficiency vs. Frequency



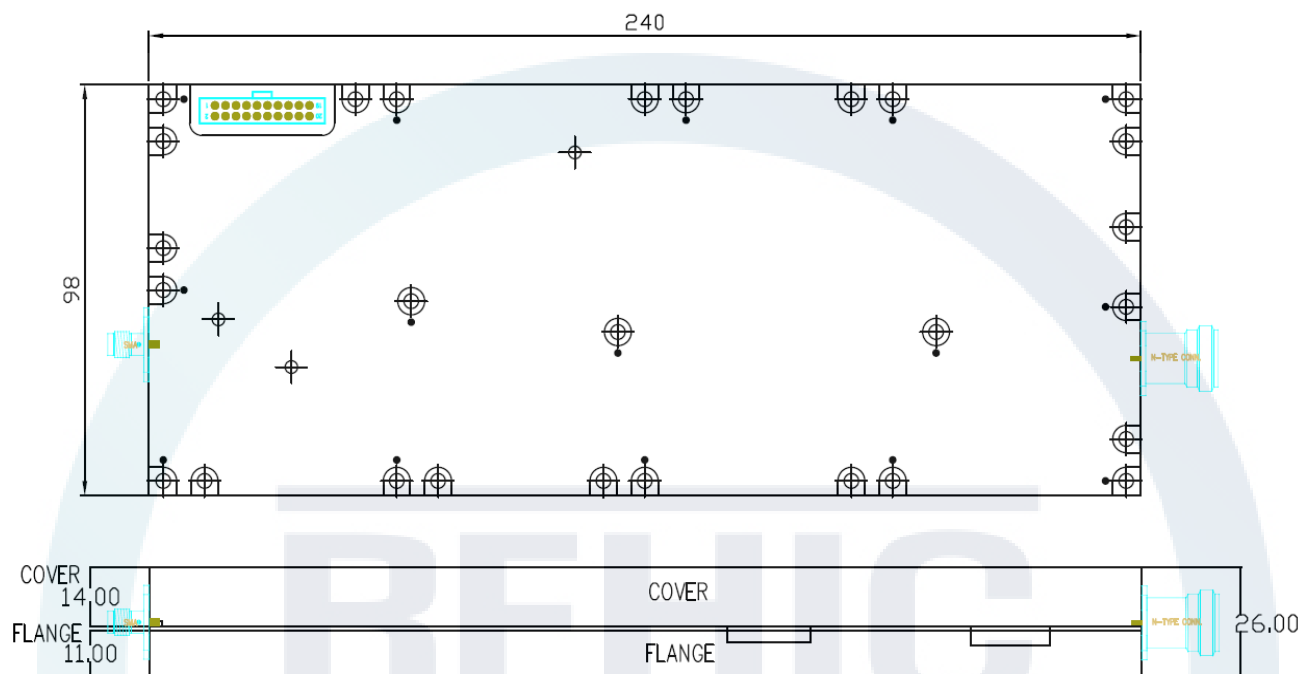
Block Diagram



Characteristic	Unit	RF IN	Attenuator	Pre Driver 1	Pre Driver 2	Driver Amplifier	Main Amplifier	Circulator	RF Out
Pout	dBm	-2.6	-15.1	0.9	18.9	39.9	57.9	57.4	57.4
Power Gain	dB	-	-12.5	16	18	21	18	-0.5	60
Current	A	-	-	-	-	0.5	16.1	-	-
Package	-	-	-	-	-	NS-CS01	NS-AS01	-	-

Outline Drawing

* Unit: mm | Tolerance: ±0.2



Note
Connector positions and module mount holes may be subjected change.

Interface Connector

20 Pin-Control (DS1016-20MASIBB)

Pin No	Description	Pin No	Description
1	+5.6V	11	Ground
2	0 ~+5V (Analog ATT)	12	Vdd (+50V)
3	Reverse power detecting	13	Vdd (+50V)
4	Temperature monitor	14	Vdd (+50V)
5	Forward power detecting	15	Vdd (+50V)
6	Ground	16	Vdd (+50V)
7	Ground	17	Vdd (+50V)
8	Ground	18	Vdd (+50V)
9	Ground	19	Vdd (+50V)
10	Ground	20	Vdd (+50V)

Revision History

Part Number	Release Date	Version	Description	Data Sheet Status
RNP09550-20	Aug, 2017	1.0	Initial release of datasheet	Preliminary



RFHIC Corporation reserves the right to make changes to any products herein or to discontinue any product at any time without notice. While product specifications have been thoroughly examined for reliability, RFHIC Corporation strongly recommends buyers to verify that the information they are using is accurate before ordering. RFHIC Corporation does not assume any liability for the suitability of its products for any particular purpose, and disclaims any and all liability, including without limitation consequential or incidental damages. RFHIC products are not intended for use in life support equipment or application where malfunction of the product can be expected to result in personal injury or death. Buyer uses or sells such products for any such unintended or unauthorized application, buyer shall indemnify, protect and hold RFHIC Corporation and its directors, officers, stockholders, employees, representatives and distributors harmless against any and all claims arising out of such unauthorized use.

Sales, inquiries and support should be directed to the local authorized geographic distributor for RFHIC Corporation. For customers in the US, please contact the US Sales Team at 919-677-8780. For all other inquiries, please contact the International Sales Team at 82-31-8069-3036.