Preliminary

GaN Power Amp Pallet RNP24150-20

Product Features

- 2400 ~ 2500MHz (ISM band)
- 150W CW Peak Power @ 50V
- 60% Drain Efficiency @ 50V
- Excellent Ruggedness
- Excellent Thermal Stability

Applications

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

Description

The RNP24150-20 is designed for Industrial, Scientific, Medical (ISM) and Plasma Lighting applications at 2450MHz. 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_{GS} =-3.5V, V_{DS} =50V, T=25°C, 50Ω System

PARAMETER		UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency		MHz	2400	-	2500	f_O
Operating Bandwidth		MHz	-	100	-	OBW
CW Output Power		dBm	51.8	-	-	Po
Power Gain		dB	52	-	-	G_P
Gain Flatness		dB	-	-	±0.5	G_F
Input Return Loss		dB	-	-	-10	S_{11}
Operating Voltage		V	V_{DC1}: 5.6±1%			-
			V_{DC2}:50 ±1%			
Current Consumption	5.6V	-	-	0.4	0.5	IDD
	50V		-	-	4.9	
Efficiency @ 51.8dBm		%	60	-	-	Eff

* Custom design available

Environmental Characteristics

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

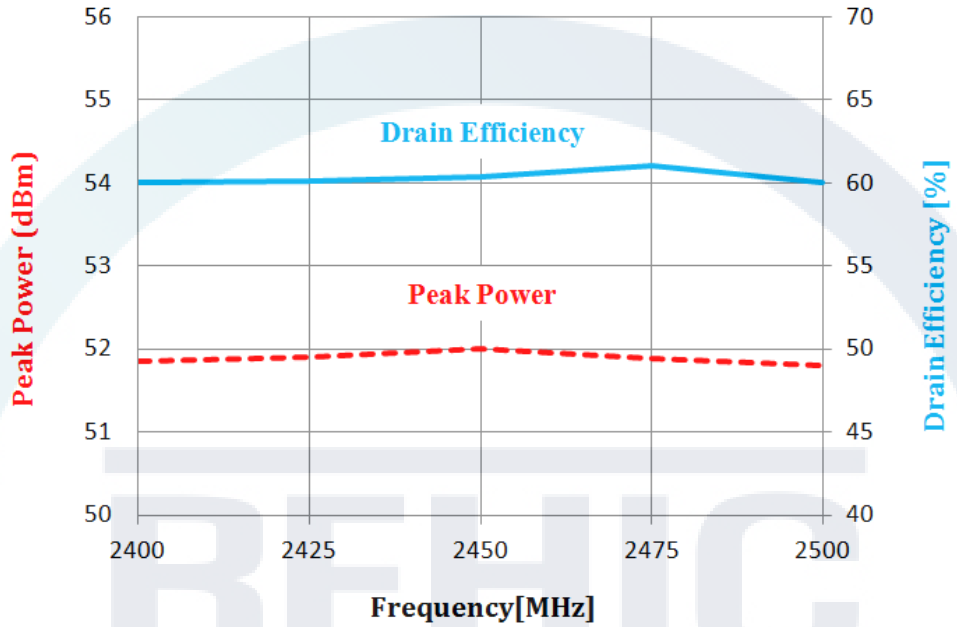
Mechanical Specifications

PARAMETER	UNIT	VALUE
Dimensions (L x W x H)	mm	160 x 65 x 32
Weight	Kg	1.4
RF Input Connector	-	SMA (Female)
RF Output Connector	-	N-type (Female)
I/O Connector	-	7W2 Combo Connector
Cooling	-	External Heat-sink & Airflow

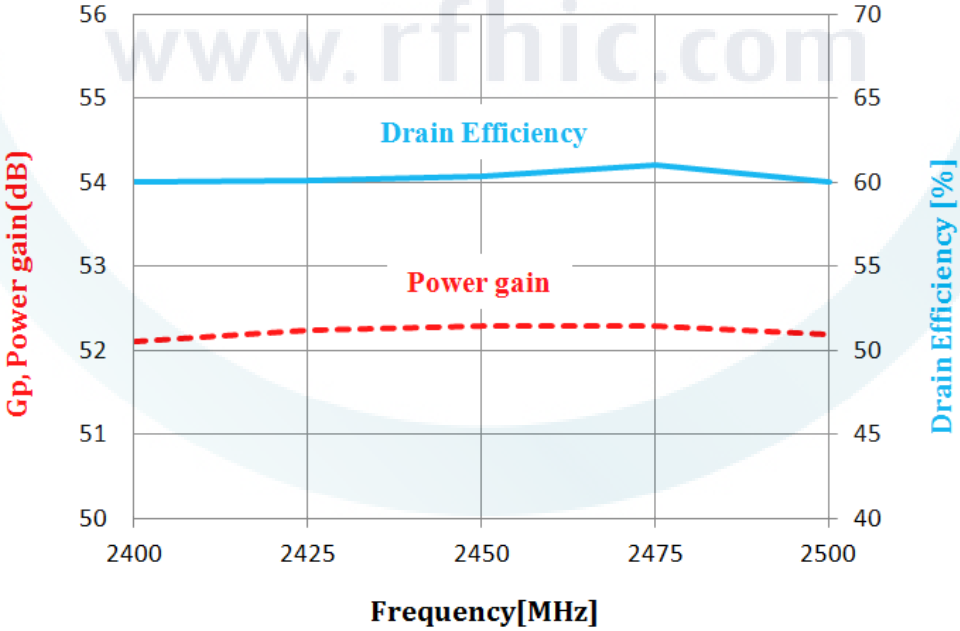
Typical CW Performance Charts

*** Bias condition** (VGS=-3.5V, VDS=50V, Tc=25℃)

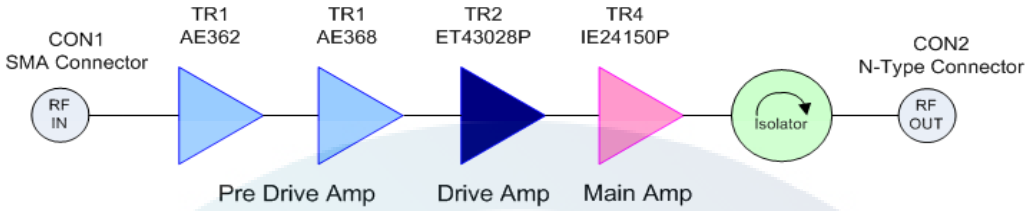
Peak Power, Drain Efficiency vs. Frequency



Power Gain, Drain Efficiency vs. Frequency

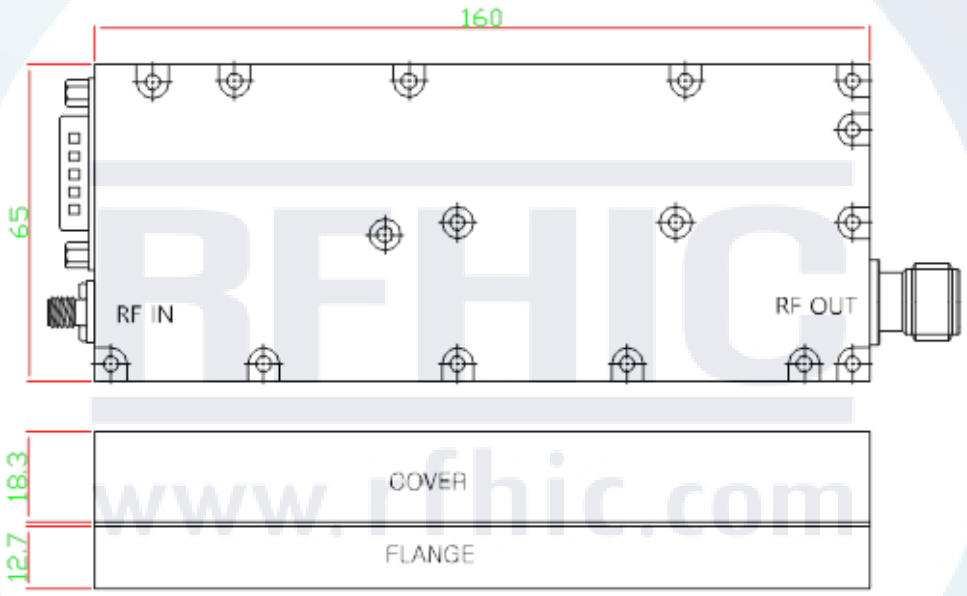


Block Diagram



Outline Drawing

* Unit: mm | Tolerance: ±0.2

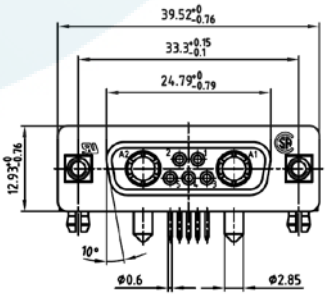


Note
Connector positions and module mount holes may be subjected change.

Interface Connector

Pin-Control (7W2 Combo Connector)

Pin No	Description
A1	Vdd (+50V)
A2	Ground
1	+5.6V
2	Forward power detecting
3	Reverse power detecting
4	Temperature monitor
5	Ground



Revision History

Part Number	Release Date	Version	Description	Data Sheet Status
RNP24150-20	June, 2017	1.0	Initial release of datasheet	Preliminary