

Product Features

- Frequency from 1.2 ~ 1.4GHz
- High Output Power: $P_{out} = 550W$ (Typ.)
- High Gain: $GP = 13.5dB$ (Typ.)
- High Efficiency: 65% (Typ.)
- GaN HEMT
- 10% Duty Cycle, 100us Pulse Width

Applications

- Radar system

**Description**

The RRP1214550-14 is designed for Radar system application frequencies from 1.2GHz to 1.4GHz and GaN HEMT technology has been used that performs high breakdown voltage, wide bandwidth and high efficiency. Since it is high efficiency amplifier, it can perform at max. 15% duty cycle and 500us of pulse width.

Electrical Specifications @ $V_{DS1} = 50V$, $V_{DS2} = 5V$, $T = 25^{\circ}C$, 50 Ω System

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency	MHz	1200	-	1400	f_o
Operating Bandwidth	MHz	-	200	-	BW
Output Pulse Power	W	500	550	-	P_o
Input Pulse Power	dBm	-	44	-	P_i
Power Gain	dB	13	13.5	-	G_P
Gain Flatness	dB	-	-	1.0	ΔG_P
Duty Cycle	%	-	10	15	DC
Pulse Width	us	-	100	500	PW
Efficiency	%	55	65	-	E_{ff}
Amplitude Pulse Droop	dB	-	0.3	0.5	Droop
Harmonics 1 to N	dBc	30	-	-	H_N
Spurious Level	dBc	60	-	-	Spur
Rise Time	ns	-	-	100	t_r
Fall Time	ns	-	-	100	t_f

* Test Pulse conditions = 100us, 10%

* Above electrical specifications is measured by connecting electrolytic condenser 1,600uF to DC. Please make sure that electrolytic condenser is connected properly while testing the module.

* Custom design available

Absolute Maximum Ratings

PARAMETER	UNIT	RATING	SYMBOL
Operating Flange Temperature	$^{\circ}C$	-20 ~ +85	T_C
Storage Temperature	$^{\circ}C$	-40 ~ +105	T_{STG}

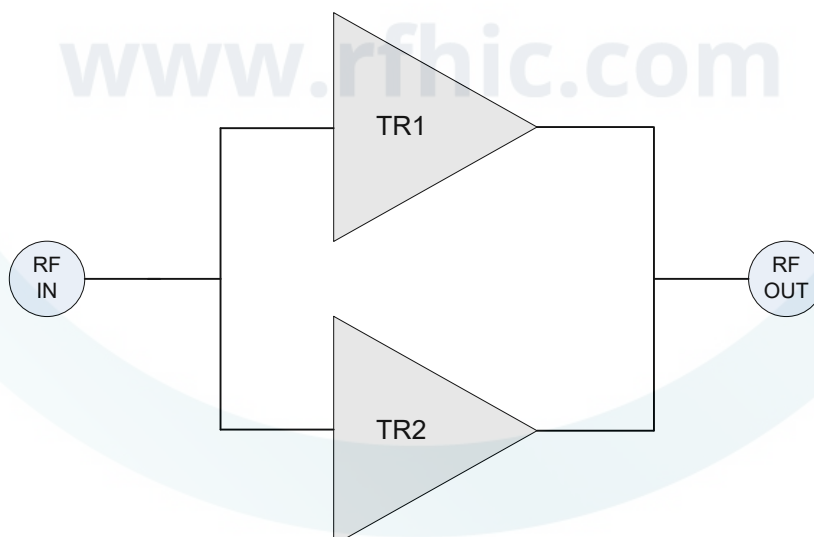
Operating Voltages

PARAMETER	UNIT	NOMINAL VOLTAGE	VOLTAGE ACCURACY	SYMBOL
Drain-Source Voltage	V	50	± 2%	V _{DS1}
Drain-Source Sub Voltage	V	5	± 2%	V _{DS2}
On/Off Control Voltage	V	TTL Low(0V) : PA OFF, TTL High(5V) : PA ON		
Temp Monitor Voltage	V	0.75V@25°C (1°C/0.01V)		

Power Supply

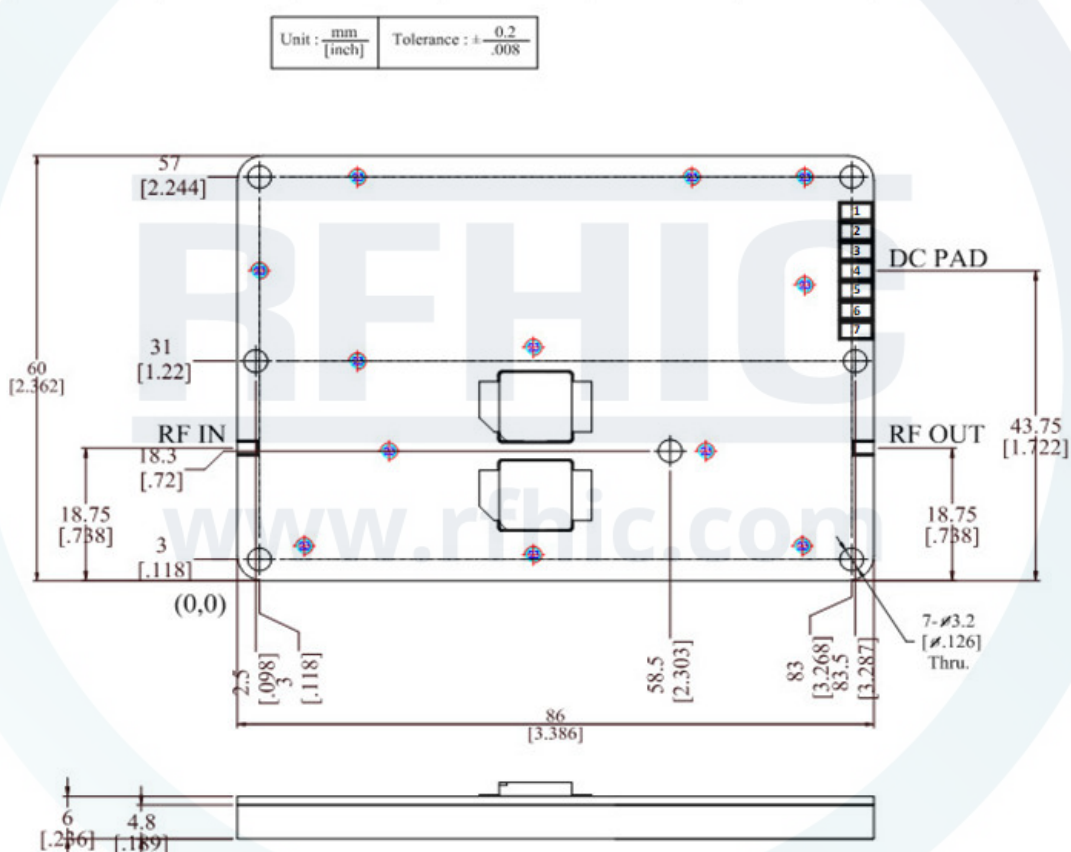
PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Drain-Source Current(AVG)	A	-	1.80	2.0	I _{DS1}
Drain-Source Sub Current(AVG)	A	-	0.02	0.05	I _{DS2}

* Duty Cycle 10%, Pulse Width 100us, Pout =550W

Block diagram

Mechanical Specifications

PARAMETER	UNIT	TYP
Mass	kg	-
Dimension	mm	86 x 60 x 12
RF Connector	-	50 ohm Pad : RF Input
		50 ohm Pad : RF Output
DC Connector	-	DC Pad

Outline Drawing**Pin Description**

Pin No	Description	Pin No	Description
1	V_{DS1} (+50V)	5	Temp Monitor
2	GND	6	GND
3	V_{DS2} (+5V)	7	N.C
4	Pulse On/Off	-	

Revision History

Part Number	Release Date	Version	Modification	Data Sheet Status
RRP1214550-14	2018.09.03	0.1	-	Preliminary
RRP1214550-14	2019.05.31	0.2	-	Preliminary
RRP1214550-14	2020.09.11	1.0	Footer Change	Production



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