

Product Features

- Frequency from 1.2 ~ 1.4GHz
- GaN HEMT
- 50 Ohm Input/Output impedance
- High efficiency

Applications

- Radar system

**Description**

The RRP131K0-10 is designed for Radar system application frequencies from 1.2 ~ 1.4GHz.

This module uses GaN HEMT technology which performs high breakdown voltage, wide bandwidth and high efficiency.

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

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency	MHz	1200	-	1400	f_o
Operating Bandwidth	MHz	-	200	-	BW
Output Pulse Power	W	1000	1200	-	P_o
Input Pulse Power	dBm	-	7	10	P_i
Power Gain	dB	53	54	-	G_p
Gain Flatness	dB	-	-	± 1.0	ΔG_p
Duty Cycle	%	-	-	20	DC
Pulse Width	us	-	-	500	PW
Efficiency	%	40	50	-	E_{ff}
Amplitude Pulse Droop	dB	-	0.5	1.0	Droop
Harmonics 1 to N	dBc	30	-	-	H_N
Spurious Level	dBc	60	-	-	Spur
Rise Time	ns	-	-	200	t_r
Fall Time	ns	-	-	200	t_f
Input VSWR	-	-	-	1.5:1	VSWR
Output VSWR	-	-	-	1.5:1	VSWR
Switching Time	us	-	0.5	1	t_{sw}
Phase Deviation	°	-20	-	20	$\Delta\phi$

* Test Pulse conditions = 100us, 10%

* Above electrical specifications is measured by connecting electrolytic condenser 10,000uF 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 Junction Temperature	°C	225	T_J
Operating Flange Temperature	°C	-30 ~ 75	T_C
Storage Temperature	°C	-30 ~ 125	T_{STG}

Operating Voltages

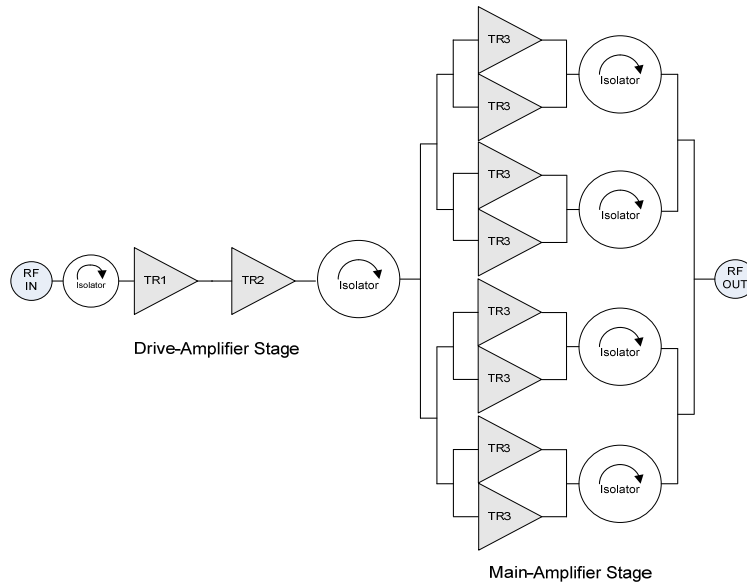
PARAMETER	UNIT	NOMINAL VOLTAGE	VOLTAGE ACCURACY	SYMBOL
Drain-Source Voltage	V	50	± 5%	V _{DS1}
Drain-Source Sub Voltage	V	12	± 5%	V _{DS2}
Shutdown Voltage	V	TTL Low(0V) : PA ON, TTL High(5V) : PA OFF		V _{DC1}
On/Off Control Voltage	V	TTL Low(0V) : PA ON, TTL High(5V) : PA OFF		V _{DC2}

Power Supply

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Drain-Source Current(AVG)	A	-	11	16	I _{DS1}
Drain-Source Sub Current(AVG)	A	-	0.12	0.2	I _{DS2}

* Duty Cycle 20%, Pulse Width 200us

Block diagram

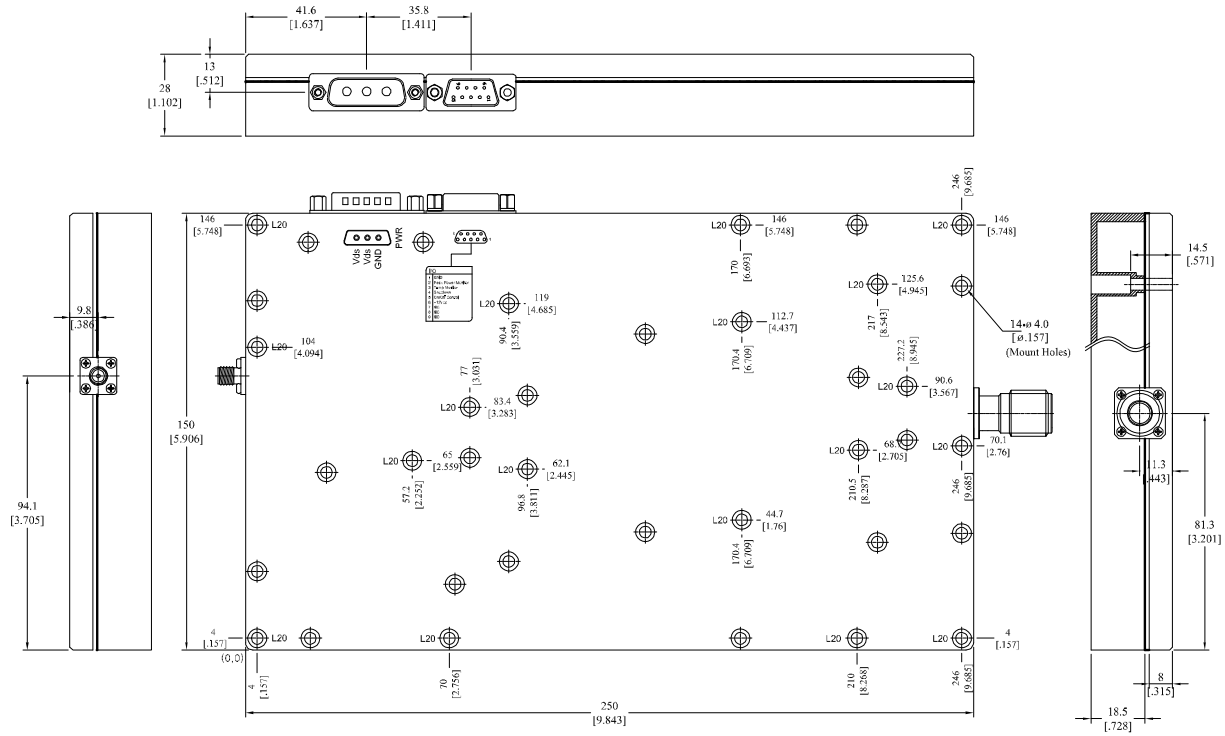


Mechanical Specifications

PARAMETER	UNIT	TYP
Mass	kg	1.3
Dimension	mm	220 x 145 x 27
RF Connector	-	SMA Female : RF Input
		N-type Female : RF Output
DC Connector	-	3W3 connector : Supply
		9Pin D-Sub : Control

Outline Drawing

* Unit: mm[inch] | Tolerance ±0.2[.008]



Pin Description

Supply : 3W3 Connector			
Pin No	Description	Pin No	Description
1 & 2	V _{DS1} (+50V)	3	GND
Control : 9Pin D-Sub			
Pin No	Description	Pin No	Description
1	GND	6	V _{DS2} (+12V)
2	Peak Power Monitor	7	NC
3	Temp Monitor	8	NC
4	Shutdown	9	NC
5	On/Off Control	-	-

Revision History

Part Number	Release Date	Version	Modification	Data Sheet Status
RRP131K0-10	2012.12.28	1.0	Version update	-
RRP131K0-10	2012.9.6	0.1	-	Preliminary
-	-	-	-	-

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