

**Product Features**

- Frequency from 2.7 ~ 3.1GHz
- GaN HEMT
- 50 Ohm Input/Output impedance
- High efficiency

**Applications**

- Radar system

**Description**

The RRP291K0-10 is designed for Radar system application frequencies from 2.7 ~ 3.1GHz.

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

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

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency	MHz	2700	-	3100	$f_O$
Operating Bandwidth	MHz	-	400	-	BW
Output Pulse Power	W	1000	1100	-	$P_O$
Input Pulse Power	dBm	-	0	-	$P_I$
Power Gain	dB	60	60.5	-	$G_P$
Gain Flatness	dB	-	-	$\pm 1.0$	$\Delta G_P$
Duty Cycle	%	-	-	20	DC
Pulse Width	us	-	-	500	PW
Efficiency	%	30	35	-	$E_{ff}$
Amplitude Pulse Droop	dB	-	0.5	1.0	Droop
Harmonics 1 to N	dBc	40	-	-	$H_N$
Spurious Level	dBc	60	-	-	Spur
Rise Time	ns	-	-	200	$t_r$
Fall Time	ns	-	-	200	$t_f$
Input VSWR	dB	-	-	1.5:1	VSWR
Output VSWR	dB	-	-	1.5:1	VSWR
Switching Time	us	-	0.5	1	$t_{sw}$
Phase Deviation	$^{\circ}$	-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	$^{\circ}C$	225	$T_J$
Operating Flange Temperature	$^{\circ}C$	-30 ~ 75	$T_C$
Storage Temperature	$^{\circ}C$	-30 ~ 125	$T_{STG}$

## Operating Voltages

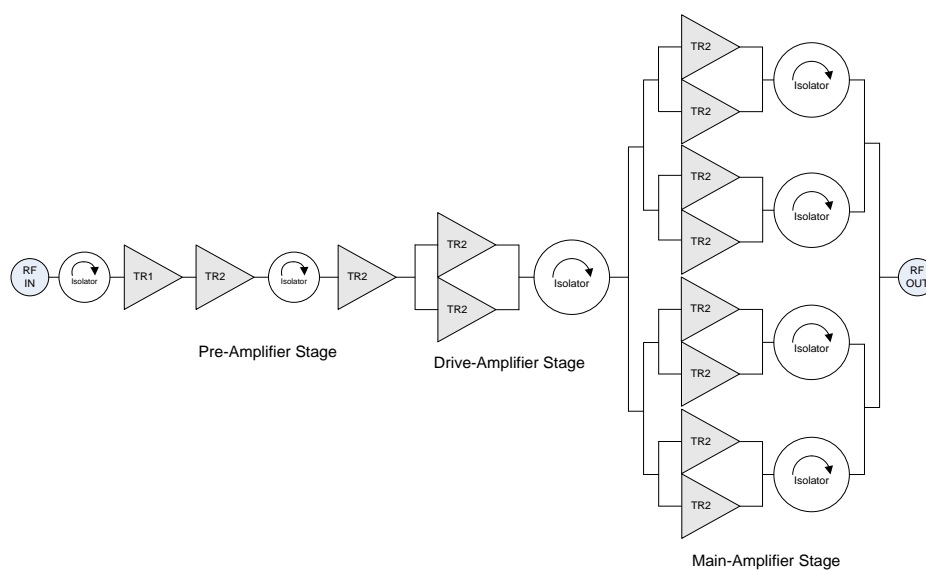
PARAMETER	UNIT	NOMINAL VOLTAGE	VOLTAGE ACCURACY	SYMBOL
Drain-Source Voltage	V	50	± 5%	V <sub>DS1</sub>
Drain-Source Sub Voltage	V	12	± 5%	V <sub>DS2</sub>
Shutdown Voltage	V	TTL Low(0V) : PA ON, TTL High(5V) : PA OFF		V <sub>DC1</sub>
On/Off Control Voltage	V	TTL Low(0V) : PA ON, TTL High(5V) : PA OFF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

## Power Supply

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Drain-Source Current(AVG)	A	-	14	20	I <sub>DS1</sub>
Drain-Source Sub Current(AVG)	A	-	0.12	0.2	I <sub>DS2</sub>

\* Duty Cycle 20%, Pulse Width 200us

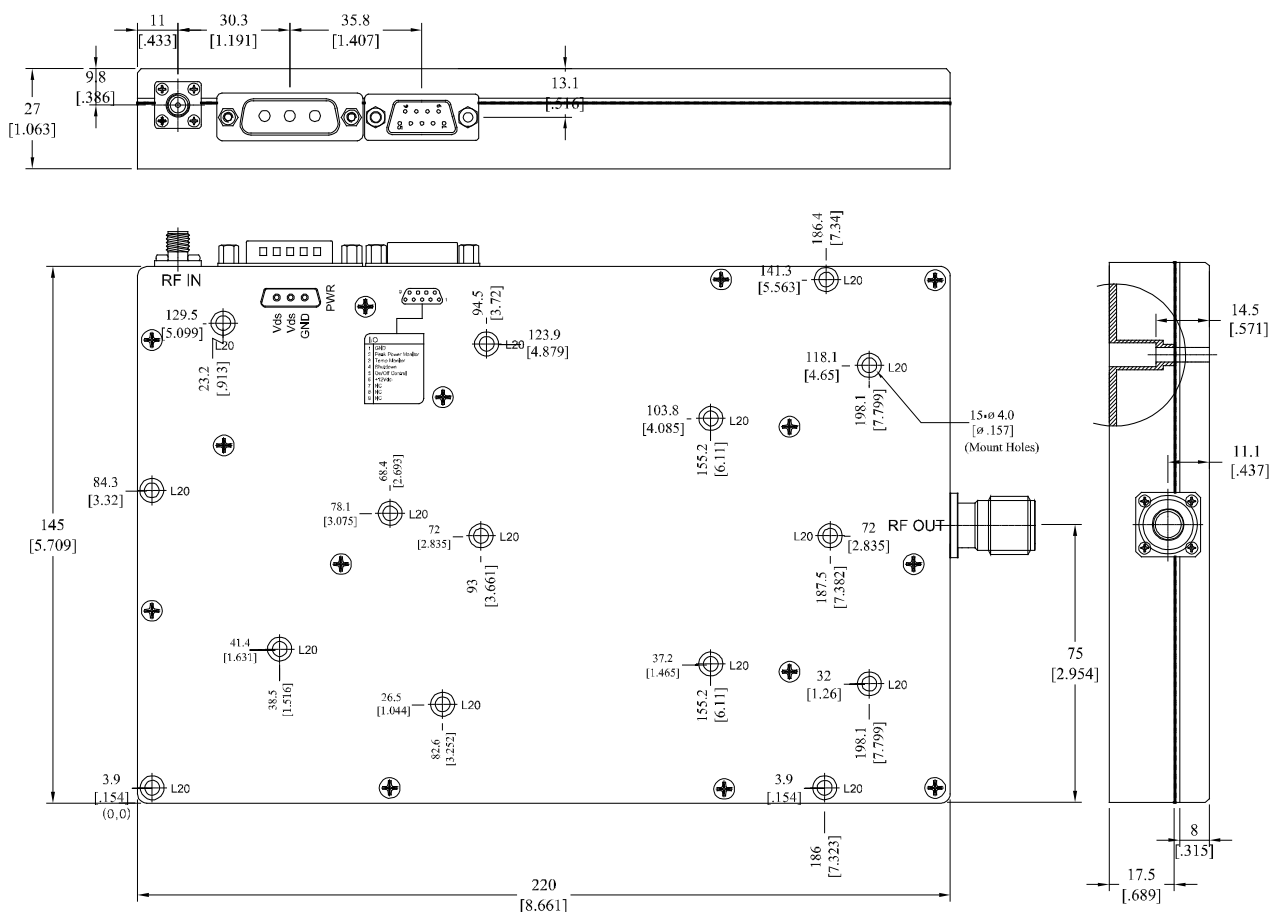
## Block diagram



## 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  $\pm 0.2$ [.008]

## Pin Description

Supply : 3W3 Connector			
Pin No	Description	Pin No	Description
1 & 2	V <sub>DS1</sub> (+50V)	3	GND
Control : 9Pin D-Sub			
Pin No	Description	Pin No	Description
1	GND	6	V <sub>DS2</sub> (+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
RRP291K0-10	2012.12.28	1.0	Version update	-
RRP291K0-10	2012.9.6	0.1	-	Preliminary
-	-	-	-	-

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