

**Product Features**

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

**Applications**

- Radar system



**Description**

The RRP27311K0-22 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 @  $V_{DS}=50V, V_{SUB}=6V, T=25^{\circ}C, 50\Omega$  System**

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency	MHz	2700	-	3100	$f_o$
Operating Bandwidth	MHz	-	400	-	BW
Output Pulse Power	W	-	1000	-	$P_o$
Input Pulse Power	dBm	-	38	-	$P_i$
Power Gain	dB	-	22	-	$G_p$
Gain Flatness	dB	-	-	$\pm 0.5$	$\Delta G_p$
Duty Cycle	%	-	5	10	DC
Pulse Width	us	1	50	100	PW
Efficiency	%	-	45	-	$E_{ff}$
Amplitude Pulse Droop	dB	-	0.5	1.0	Droop
Harmonics 1 to N	dBc	40	-	-	$H_N$
Spurious Level	dBc	70	-	-	Spur
Rise Time	ns	-	-	100	$t_r$
Fall Time	ns	-	-	100	$t_f$
Input VSWR	dB	-	-	1.5:1	VSWR
Output VSWR	dB	-	-	1.5:1	VSWR
Phase Deviation	$^{\circ}$	-20	-	20	$\Delta\phi$

\* Test Pulse conditions = 100us, 10%  
\* Custom design available

**Absolute Maximum Ratings**

PARAMETER	UNIT	RATING	SYMBOL
Operating Junction Temperature	°C	225	T <sub>J</sub>
Operating Flange Temperature	°C	-20 ~ 85	T <sub>C</sub>
Storage Temperature	°C	-40 ~ 125	T <sub>STG</sub>

**Operating Voltages**

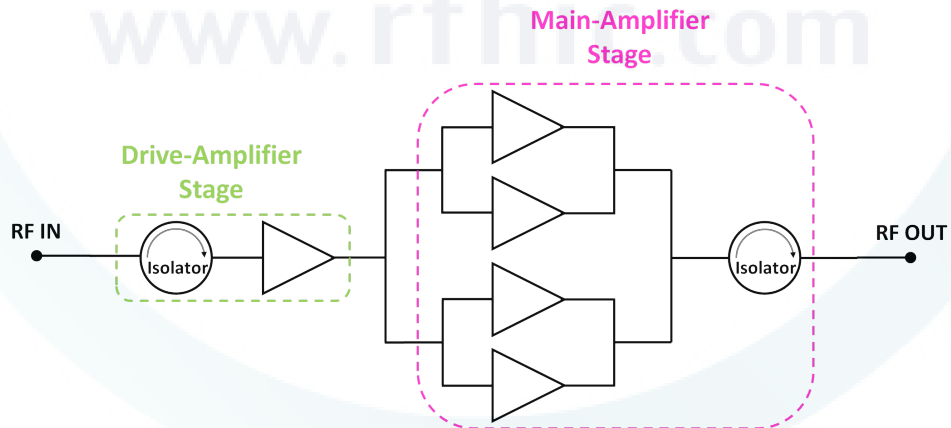
PARAMETER	UNIT	NOMINAL VOLTAGE	VOLTAGE ACCURACY	SYMBOL
Drain-Source Voltage	V	50	± 2%	V <sub>DS</sub>
Sub Voltage	V	6	± 2%	V <sub>SUB</sub>
Shutdown Voltage	V	TTL Low(0V) : PA OFF, TTL High(5V) : PA ON		V <sub>DC1</sub>
On/Off Control Voltage	V	TTL Low(0V) : PA OFF, TTL High(5V) : PA ON		V <sub>DC2</sub>

**Power Supply**

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Drain-Source Current(AVG)	A	-	5	6	I <sub>DS</sub>
Sub Current(AVG)	mA	-	40	-	I <sub>SUB</sub>

\* Duty Cycle 10%, Pulse Width 100us

**Block diagram**

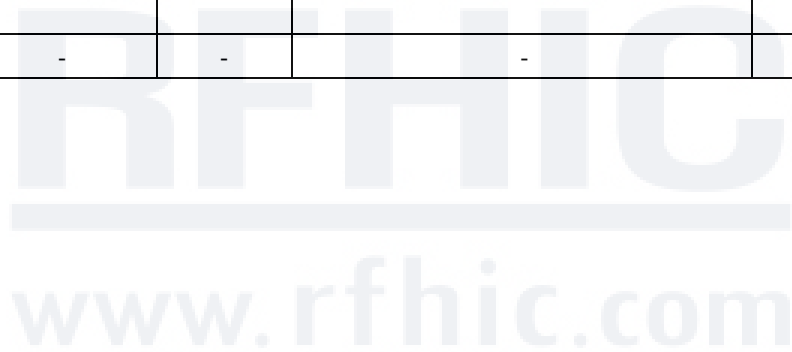


**Mechanical Specifications**

PARAMETER	UNIT	TYP
Mass	kg	0.6
Dimension	mm	130x100x25.5(TBD)
RF Connector	-	SMA Female : RF Input
		N Female : RF Output
DC Connector	-	15 Pin D-SUB Connector : Supply and Control

**Revision History**

Part Number	Release Date	Version	Modification	Data Sheet Status
RRP27311K0-22	2020.12.15	0.1	-	Preliminary
-	-	-	-	-



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