RRP2731080-39

Product Features

- High Output Power : Pout =100W(Typ.)
- High Gain : GP =39dB(Typ.)
- High Efficiency : 42%(Typ.)
- High thermal stability
- Internally matched for ease of use
- 20% Duty Cycle, 500us Pulse Width

Applications

- Radar system

Description

The RRP2731080-39 is designed for general radar system applications. The amplifier operates from 2.7GHz to 3.1GHz. Utilizing GaN HEMT technology, the RRP2731080-39 shows high breakdown voltage, wide bandwidth and high efficiency. Since it is high efficiency amplifier, it can perform at max. 20% duty cycle and 500us of pulse width.

Electrical Specifications @ V_{DS} =50V, T=25°C, 50Ω System

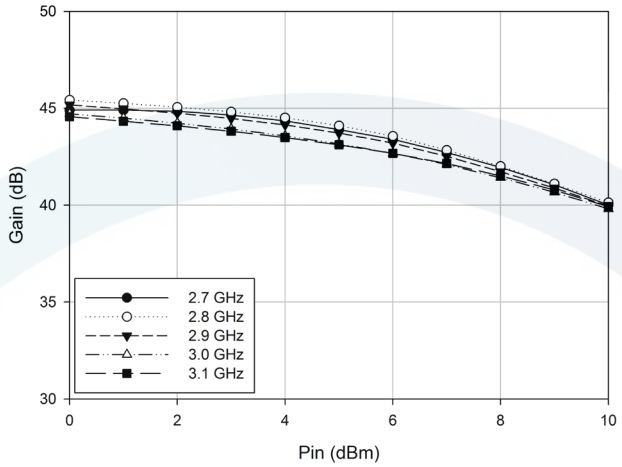
PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency	MHz	2700	-	3100	f_O
Operating Bandwidth	MHz	-	400	-	BW
Output Pulse Power	W	80	100	-	P_O
Input Pulse Power	dBm	-	11	-	P_I
Power Gain	dB	38	39	-	G_P
Gain Flatness	dB	-	-	1.0	ΔG_P
Duty Cycle	%	-	-	20	DC
Pulse Width	us	-	-	500	PW
Efficiency	%	37	42	-	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
Phase Deviation	°	-20	-	20	$\Delta\varphi$

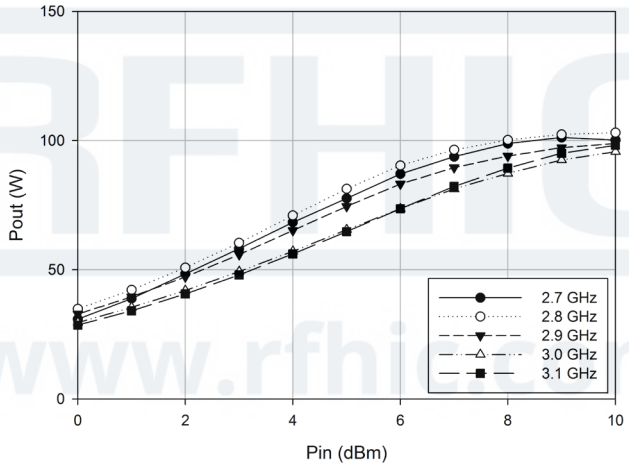
∗ Test Pulse conditions = 100us, 10%

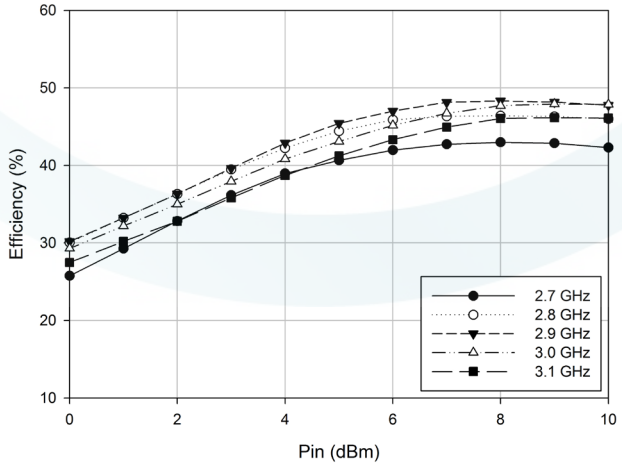
∗ Above electrical specifications is measured by connecting electrolytic condenser 1,000uF to DC. Please make sure that electrolytic condenser is connected properly while testing the module.

∗ Custom design available

Typical Performance @ 25°C







Absolute Maximum Ratings

PARAMETER	UNIT	RATING	SYMBOL
Thermal Resistance	°C/W	1.1	$R_{TH(JC)}$
Operating Junction Temperature	°C	225	T_J
Operating Flange Temperature	°C	-20 ~ 85	T_C
Storage Temperature	°C	-50 ~ 125	T_{STG}

Operating Voltages

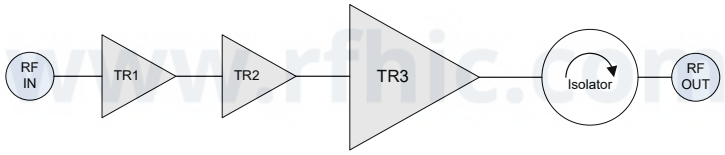
PARAMETER	UNIT	NOMINAL VOLTAGE	VOLTAGE ACCURACY	SYMBOL
Drain-Source Voltage	V	50	± 2%	V_{DS}
Enable Voltage	V	TTL High(5V) : PA ON, TTL Low(0V) : PA OFF		V_{DC}

Power Supply

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Drain-Source Current(AVG)	A	-	-	-	I_{DS}

* Duty Cycle 10%, Pulse Width 100us

Block diagram

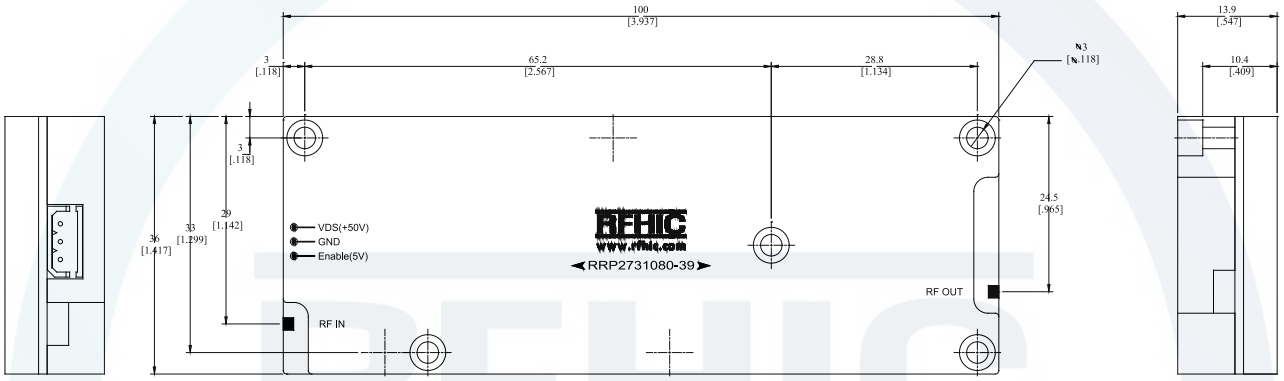


-Mechanical Specifications

PARAMETER	UNIT	TYP
Mass	kg	0.1
Dimension	㎜	100 x 36 x 14
RF Connector	-	50 ohm Pad (SMA available) : RF Input
		50 ohm Pad (SMA available) : RF Output
DC Connector	-	3Pin Molex Connector (Male) : Supply

Outline Drawing

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



Pin Description

Pin No	Description	Pin No	Description
1	V_{DS} (+50V)	3	Enable(+5V)
2	GND		

Revision History

Part Number	Release Date	Version	Modification	Data Sheet Status
RRP2731080-39	2022.11.28	0.4	Modified Spec. & Outline Drawing	Preliminary
RRP2731080-39	2016.11.21	0.3	Modified Spec. & Outline Drawing	Preliminary
RRP2731080-39	2014.2.14	0.2	Modified Spec. & Format	Preliminary
RRP2731080-39	2014.2.1	0.1	-	Preliminary