

Product Features

- Frequency from 5.6 ~ 5.7GHz
- GaN HEMT
- 50 Ohm Input/Output impedance
- High efficiency

Applications

- Radar system



Description

The RRP5657550-35 is designed for Radar system application frequencies from 5.6 ~ 5.7GHz. This module uses GaN HEMT technology which performs high breakdown voltage, wide bandwidth and high efficiency.

Electrical Specifications @ $V_{DS1}=50V$, $V_{DS2}=12V$ $T=25^{\circ}C$, 50Ω System

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency	MHz	5600	-	5700	f_O
Operating Bandwidth	MHz	-	100	-	BW
Output Pulse Power	W	550	630	-	P_O
Input Pulse Power	dBm	-	23	24	P_I
Power Gain	dB	34	35	-	G_P
Gain Flatness	dB	-	-	± 1.0	ΔG_P
Duty Cycle	%	-	-	10	DC
Pulse Width	us	-	-	100	PW
Efficiency	%	25	30	-	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	-	-	50	t_r
Fall Time	ns	-	-	50	t_f
Input VSWR	dB	-	-	2.0:1	VSWR
Output VSWR	dB	-	-	1.5:1	VSWR
Switching Time	us	-	0.1	0.2	t_{sw}
Phase Deviation	°	-20	-	20	$\Delta\phi$

* Test Pulse conditions = 100us, 10%

* Above electrical specifications is measured by connecting electrolytic condenser 6,800uF 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	-20 ~ 85	T_C
Storage Temperature	°C	-40 ~ 125	T_{STG}

Operating Voltages

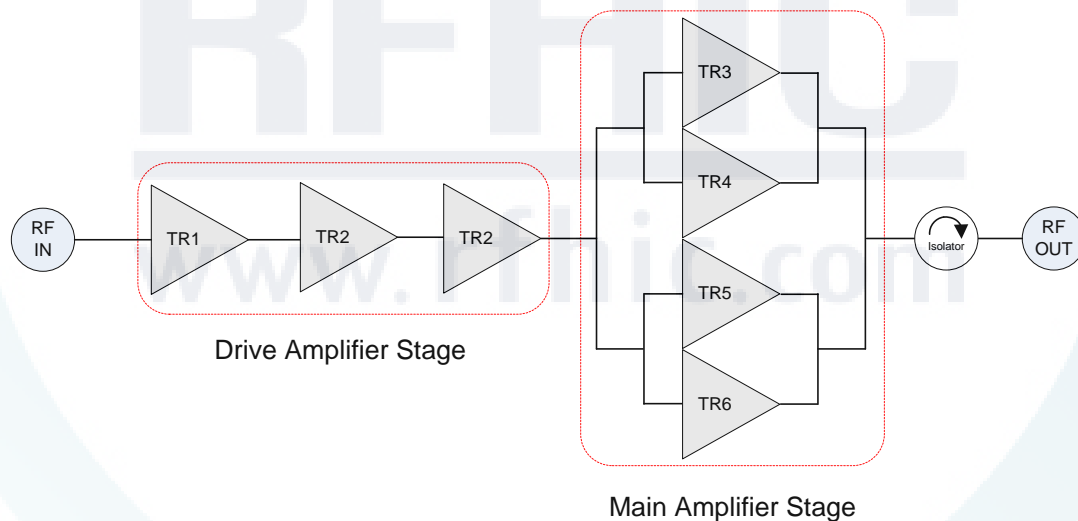
PARAMETER	UNIT	NOMINAL VOLTAGE	VOLTAGE ACCURACY	SYMBOL
Drain-Source Voltage	V	50	± 2%	V _{DS1}
Drain-Source Sub Voltage	V	12	± 2%	V _{DS2}
On/Off Control Voltage	V	TTL Low(0V) : PA OFF, TTL High(5V) : PA ON		V _{DC}
Shutdown Voltage	V	TTL Low(0V) : PA OFF, TTL High(5V) : PA ON		V _{DC}

Power Supply

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Drain-Source Current(AVG)	A	-	4.5	5.5	I _{DS1}
Drain-Source Sub Current(AVG)	A	-	0.6	0.1	I _{DS2}

* Duty Cycle 10%, Pulse Width 100us

Block diagram

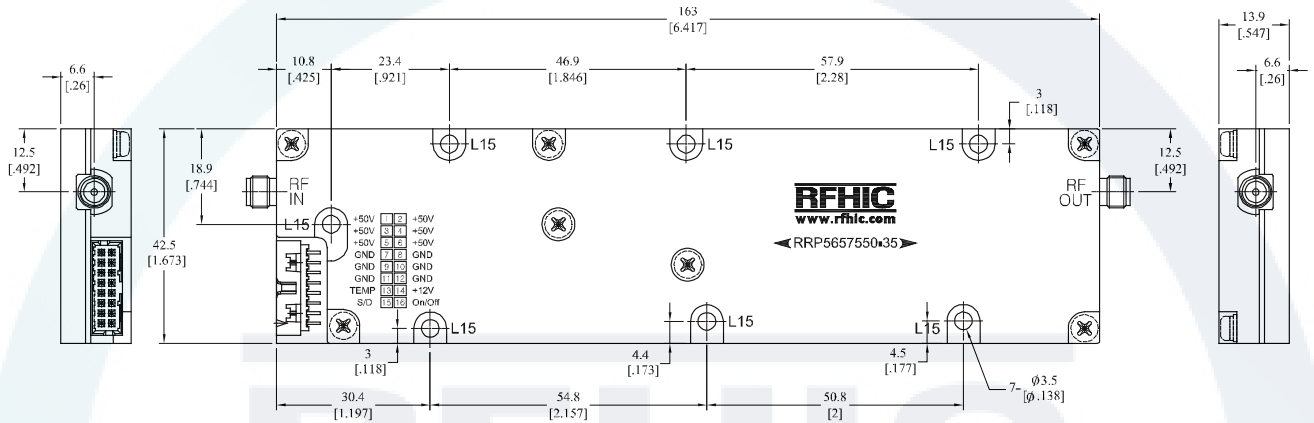


Mechanical Specifications

PARAMETER	UNIT	TYP
Mass	kg	-
Dimension	mm	163 x 42.5 x 13.9
RF Connector	-	SMA Female : RF Input SMA Female : RF Output
DC Connector	-	16 Pin Molex Connector (87833-1620) : Supply

Outline Drawing

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



Pin Description

Supply : 16 Pin Molex Connector (87833-1620)

Pin No	Description	Pin No	Description
1	V _{DS1} (+50V)	9	GND
2	V _{DS1} (+50V)	10	GND
3	V _{DS1} (+50V)	11	GND
4	V _{DS1} (+50V)	12	GND
5	V _{DS1} (+50V)	13	TEMP Monitor
6	V _{DS1} (+50V)	14	V _{DS2} (+12V)
7	GND	15	S/D(Shutdown)
8	GND	16	On/Off(Pulse)

Revision History

Part Number	Release Date	Version	Modification	Data Sheet Status
RRP5657550-35	2014.5.22	0.1	-	Preliminary
RRP5657550-35	2014.6.17	0.2	Changed Outline Drawing(SMA Connector)	Preliminary
-	-	-	-	-



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