

Preliminary
Pulse Amp Pallet
RRP5459015-42



Product Features

- Frequency from 5.4 ~ 5.9GHz
- GaN HEMT
- 50 Ohm Input/Output impedance

Applications

- Radar system

Description

The RRP5459015-42 is designed for Radar system application frequencies from 5.4 ~ 5.9GHz.
This module uses GaN HEMT technology which performs high breakdown voltage.

Electrical Specifications @ $V_{DS1}=50V$, $V_{DS2}=6V$, $T=40^{\circ}C$, 50 Ω System

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency	MHz	5400	-	5900	f_o
Operating Bandwidth	MHz	-	500	-	BW
Output Pulse Power	W	-	15	-	P_o
Input Pulse Power	dBm	-	0	-	P_i
Power Gain	dB	-	42	-	G_p
Gain Flatness	dB	-	-	± 0.5	ΔG_p
Duty Cycle	%	-	5	10	DC
Pulse Width	us	1	50	100	PW
Amplitude Pulse Droop	dB	-	0.5	1.0	Droop
Harmonics 1 to N	dBc	30	-	-	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
Switching Time	us	-	-	0.5	t_{sw}
Phase Deviation	°	-15	-	+15	$\Delta\phi$

* Test Pulse conditions = 100us, 10%

* Custom design available

Absolute Maximum Ratings

PARAMETER	UNIT	RATING	SYMBOL
Operating Flange Temperature	$^{\circ}C$	-20 ~ 85	T_c
Storage Temperature	$^{\circ}C$	-40 ~ 125	T_{STG}

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Operating Voltages

PARAMETER	UNIT	NOMINAL VOLTAGE	VOLTAGE ACCURACY	SYMBOL
Drain-Source Voltage	V	50	± 2%	V _{DS1}
Drain-Source Sub Voltage	V	6	± 2%	V _{DS2}
Temp Monitor Voltage	V	0.75V@25°C (0.01V /1°C)		
Pulse On/Off Control Voltage	V	TTL Low(0V) : PA OFF, TTL High(5V) : PA ON		

Power Supply

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Drain-Source Current(AVG)	A	-	0.1(TBD)	-	I _{DS1}
Drain-Source Sub Current(AVG)	A	-	0.01	-	I _{DS2}

* Duty Cycle 10%, Pulse Width 100us, Pout 15W

Mechanical Specifications

PARAMETER	UNIT	TYP
Mass	kg	0.5(TBD)
Dimension	mm	140x55x23(TBD)
RF Connector	-	SMA Female : RF Input
		SMA Female : RF Output
DC Connector	-	7W2 Combo Connector : Supply and Control

Pin Description

Supply : 7W2 Combo Connector			
Pin No	Description	Pin No	Description
A1	GND	1	N.C
A2	V _{DS1} (+50V)	2	Temp Monitor
		3	Pulse On/Off
		4	V _{DS2} (+6V)
		5	GND

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Revision History

Part Number	Release Date	Version	Modification	Data Sheet Status
RRP5459015-42	2021.07.07	0.1	-	Preliminary
-	-	-	-	-



Certification

This product is manufactured by a company that is certified for the AS9100D quality management system.

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