

**Product Features**

- Frequency from 9.5~9.6GHz
- GaN HEMT
- 50 Ohm Input/Output Impedance
- High Efficiency

**Applications**

- Radar System

**Description**

The RRP9596500-55 is designed for Radar system application frequencies from 9.5~9.6GHz.

This pallet uses GaN HEMT technology which provides high breakdown voltage, wide bandwidth and high efficiency.

**Electrical Specifications @ T=25°C, 50Ω System**

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency	MHz	9500	-	9600	f <sub>o</sub>
Operating Bandwidth	MHz	-	100	-	BW
Output Pulse Power	W	500	-	-	P <sub>o</sub>
Input Pulse Power	dBm	0	+2	+4	P <sub>i</sub>
Power Gain	dB	53	55	-	G <sub>p</sub>
Gain Flatness	dB	-	-	±1.0	ΔG <sub>p</sub>
Duty Cycle	%	-	-	10	DC
Pulse Width	us	-	-	100	PW
PAE	%	20	25	-	E <sub>ff</sub>
Amplitude Pulse Droop	dB	-	0.5	1.0	Droop
Harmonics 1 to N	dBc	40	-	-	H <sub>N</sub>
Spurious Level	dBc	60	-	-	Spur
Rise/Fall Time	ns	-	-	50	t <sub>r</sub> / t <sub>f</sub>
Off State Isolation	dBc	100	-	-	Off Iso
Input VSWR	dB	-	-	2:1	VSWR
Output VSWR	dB	-	-	2:1	VSWR
Switching Time	ns	-	-	200	t <sub>sw</sub>
Phase Deviation	°	-20	-	20	Δφ
Operating Voltage(Main)	V	-	50	-	O <sub>V1</sub>
Operating Voltage(Sub)	V	-	5.6	-	O <sub>V2</sub>
Power Consumption	W	-	200	250	P <sub>c</sub>

\* 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	-30 ~ 75	T <sub>C</sub>
Storage Temperature	°C	-50 ~ 125	T <sub>STG</sub>

**Operating Voltages**

PARAMETER	UNIT	NOMINAL VOLTAGE	VOLTAGE ACCURACY	SYMBOL
Drain-Source Voltage	V	50	± 2%	V <sub>DS1</sub>
Drain-Source Sub Voltage	V	5.6	± 2%	V <sub>DS2</sub>
SSPA On/Off Control Voltage	V	Low(0V) : SSPA OFF, High(5V) : SSPA ON		V <sub>DC1</sub>
Pulse On/Off Control Voltage	V	TTL Low(0V) : Pulse OFF, TTL High(5V) : Pulse ON		V <sub>DC2</sub>

**Power Supply**

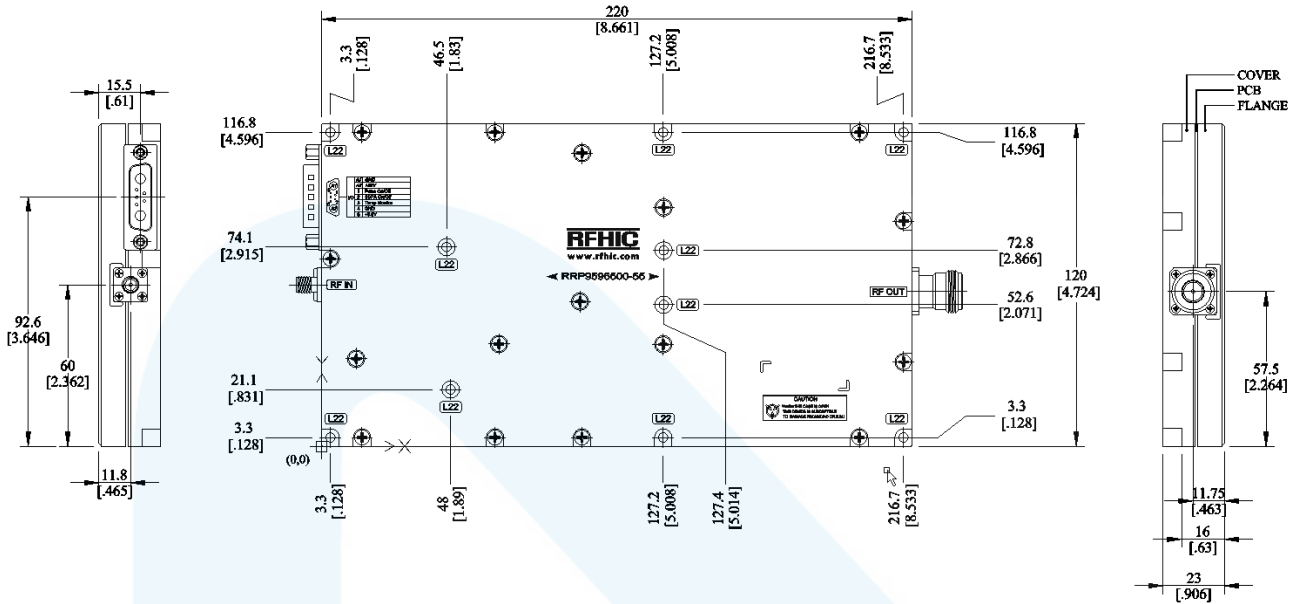
PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Drain-Source Current (AVG)	A	-	4.0	5.0	I <sub>DS1</sub>
Drain-Source Sub Current (AVG)	A	-	0.5	1.0	I <sub>DS2</sub>

\* Duty Cycle 10%, Pulse Width 100us

**Mechanical Specifications**

PARAMETER	UNIT	TYP
Mass	kg	1.4 (TBD)
Dimension (W x L x H)	mm	220 x 120 x 23
RF Connector	-	RF Input : SMA Female
		RF Output : N-type Female
DC/Control Connector	-	7W2 Combo Connector

## Outline Drawing

\* Unit: mm[inch] | Tolerance  $\pm 0.3$ [.0118]

## Pin Description

Supply and Control : 7W2 Combo Connector			
Pin No	Description	Pin No	Description
A1	Ground	3	Temp Monitor
A2	$V_{DS1}(+50V)$	4	Ground
1	TTL Control(Pulse On/Off)	5	$V_{DS2}(+5.6V)$
2	Enable(SSPA On/Off)		

\* Temp Monitor [0.75V/25°C(10mV/°C)]

**Revision History**

Part Number	Release Date	Version	Modification	Data Sheet Status
RRP9596500-55	February, 2020	0.1	Initial Release of Datasheet	Preliminary
RRP9596500-55	March, 2023	1.0	Status Change to Production	Production
RRP9596500-55	April, 2023	1.1	Changed Outline Drawing & Operating Voltages	Production

**Certification**

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

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