

# Preliminary

## GaN Wideband Power Amplifier

### RTP0710050-10



### Product Features

- GaN on SiC Wideband Power Amplifier
- 700 ~ 1000MHz Operating Bandwidth
- 250W Saturated Power @ 28V
- 25% Drain Efficiency @ 28V
- Wide Supply Voltage @20~36V

### Applications

- General Purpose
- Communication System



### Description

The RTP0710050-10 is a unique GaN-SiC wideband power amplifier that powers 47dBm over a bandwidth of 700~1000MHz. This GaN wideband power amplifier has been specifically developed for communication system and other application in general.

### Electrical Specifications @ $V_{DS} = 28V$ , $T = 45^{\circ}C$ , 50Ω System

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency	MHz	700	-	1000	$f_o$
Operating Bandwidth	MHz	-	300	-	OBW
Average Rated Output Power <sup>*1</sup>	dBm	47			$P_o$
Peak Output Power <sup>*2</sup>	dBm	-	54	-	$P_{peak}$
OIP3 / OIP5 <sup>*1, *4</sup>	dBm	-	59 / 61 / 57	-	-
Power Gain <sup>*1</sup>	dB	-	15	-	$G_p$
Small Signal Gain Flatness <sup>*3</sup>	dB	-	1 / 2	-	$G_f$
Output Return Loss	dB	-	12	-	$S_{22}$
Operating Voltage	$V_{DC}$	20	28	36	-
Efficiency <sup>*1</sup>	%	-	25	-	$E_{ff}$
Enable/Disable Response Time	μsec	-	-	5	-
Out-band Spurious and Harmonics <sup>*1, *4</sup>	dBc	-	35 / 40	-	-

#### Note

- \*1  $P_o=47dBm/2$ -tone, 10MHz tone spacing.
- \*2 Pulse width 10μsec, Duty Cycle 10%
- \*3 Gain Flatness@ $P_i=0dBm$ 
  - 1dB typ.@700~969MHz
  - 2dB typ.@969~1000MHz
- \*4 Measurements about OIP3/OIP5, Out-band spurious and harmonics following under specifications
  - OIP3/OIP5
    - 59dBm typ.@700~716MHz
    - 61dBm typ.@716~894MHz
    - 57dBm typ.@894~1000MHz
  - Out-band Spurious and Harmonics
    - 40dBc typ.@1434~1788MHz
    - 35dBc typ.@Other frequencies



#### Certification

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

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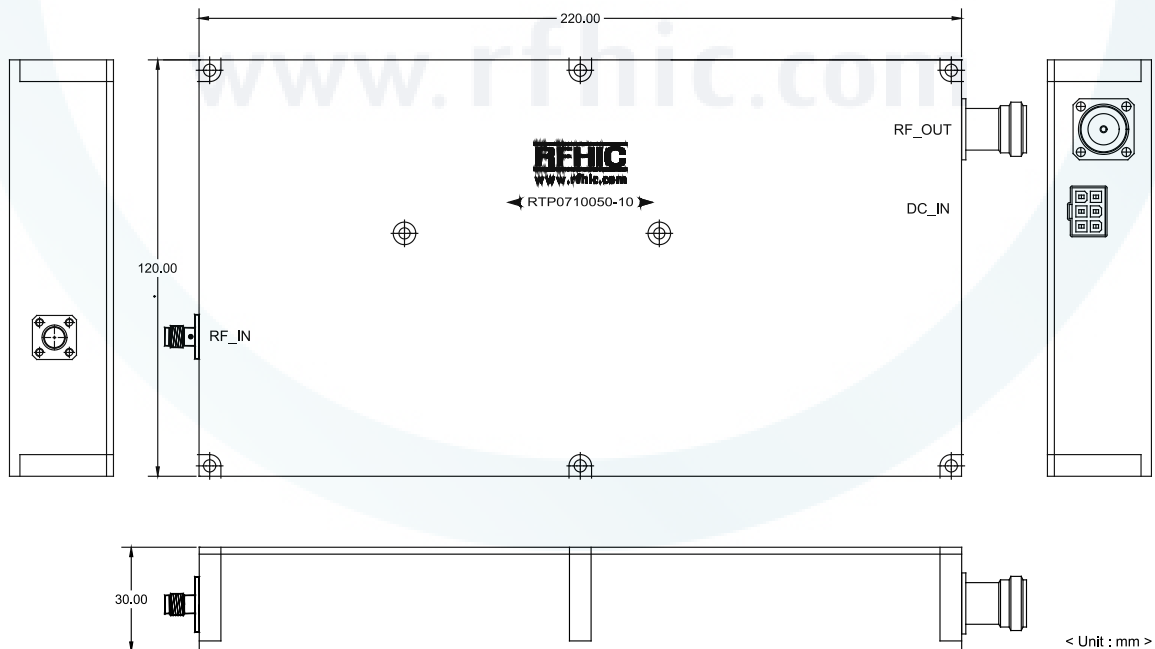
**Mechanical Specifications**

PARAMETER	UNIT	VALUE
Dimensions (L x W x H)	mm	220 x 120 x 30
Weight	Kg	1.2(typ)
RF Input Connector	-	SMA (Female)
RF Output Connector	-	N-type (Female)
I/O Connector	-	26-01-3116 (Molex)
Cooling	-	External Heat-sink & Airflow

**Environmental Characteristics**

PARAMETER	UNIT	MIN	TYP	MAX
Operating Case Temperature	°C	-40	-	+85
Storage Temperature	°C	-60	-	+125
Relative humidity w/o condensation	%	-	-	95

**Outline Drawing Concept**



**Note**

Connector positions and module mount holes may be subjected change.

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**Interface Connector**

Based on 6 Pin Connector(26-01-3116)

Pin No	Description
1	N.C
2,5	GND
3,6	+28V
4	Enable/Disable

**Note**

Pin No.4 refers to Low(0V)=Enable and High(+5V)=Disable



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**Revision History**

Part Number	Release Date	Version	Description	Data Sheet Status
RTP0710050-10	Mar, 2021	0.1	Initial release of datasheet	Preliminary



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