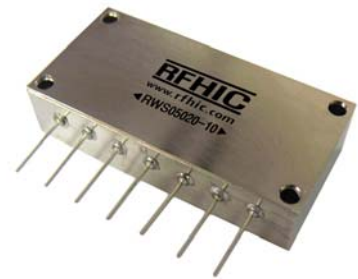


Product Features

- GaN on SiC Broadband High Power Amplifier
- 20 to 1000MHz Operation Bandwidth
- Small Signal Gain 34dB min.
- 20W Typical. P3dB

Application

- Broadcasting
- Medical equipment
- Jamming system



Description

The power amplifier module is designed for Broadcasting, Telecommunication, Medical and other markets.

Operating frequency range is from 20MHz to 1000MHz.

Gallium Nitride on SiC technology is used and attached on an aluminum sub carrier. Full in/out matching for broadband performance is already applied.

Improved thermal handling by patented technology.

Typical Specifications

$V_{CC} = +28V$; $T = 25^{\circ}C$; $Z_S = Z_L = 50\Omega$

No	Item	Conditions	Min	Typ	Max	Unit
1	Bandwidth		20		1000	MHz
2	Small Signal Gain		34	36	38	dB
3	Gain Variation vs Temperature	-20°C to 60°C	-2		+2	dB
4	Gain Variation vs Frequency			±1	±1.5	dBpp
5	P _{3dB}	20MHz to 500MHz	42	44		dBm
		500 MHz to 1000MHz	41	43		
6	OIP3 @ P _o = +33dBm (1MHz Tone spacing, CW 2-Tone)	20MHz to 500 MHz	48	51		dBm
		500 MHz to 1000 MHz	45	48		
7	Input Return Loss			-10	-6	dB
8	N TH Harmonic suppression	CW 1-tone @P _o = +40dBm	15	25	-	dBc
9	Supply Voltage	V _{cc} (=V _{ds})	27.5	28	30	V
10	Quiescent Current consumption			1.7	1.9	A
11	Current Consumption @ P _{3dB}	CW 1-tone		2.3	3	A

RWS05020-10 Typical Performance @ 25°C

Frequency (MHz)	P1dB (dBm)	P3dB (dBm)	Current@P1dB (A)	Current@P3dB (A)	N TH Harmonic @ 40dBm		OIP3 @30dBm/Tone (dBm)
					2 nd Harm (dBc)	3 rd Harm (dBc)	
20	41.0	43.1	1.8	2.0	35.4	26.9	53.0
100	41.8	44.3	1.9	2.3	45.8	25.8	53.2
200	40.8	44.2	1.9	2.5	43.1	22.5	52.0
300	40.1	43.8	1.9	2.4	41.7	20.1	50.7
400	41.2	44.4	1.8	2.4	44.8	26.8	51.0
500	41.7	44.2	1.8	2.3	34.7	29.6	50.8
600	41.3	43.3	1.7	2.0	33.3	27.7	49.4
700	41.0	42.9	1.6	1.9	35.1	28.2	48.6
800	40.7	42.4	1.7	1.9	36.3	40.4	48.0
900	40.2	42.4	1.7	2.0	36.9	47.5	47.6
1000	39.3	41.6	1.7	2.0	35.9	52.1	46.3

Environmental Characteristics

No	Item	Min	Typ	Max	Unit
1	Operating Temperature	-20		+60	°C
2	Storage Temperature	-40		+105	°C
3	Vibration	MIL-STD-810G Method 514.6 ANNEX C			

Absolute Maximum Ratings

No	Item	Rating	Unit
1	Operating Case Temperature	+80	°C
2	Input RF Power	+14	dBm
3	Supply Voltage	+30	V
4	Load Mismatch Value	3 : 1 @all load phase	

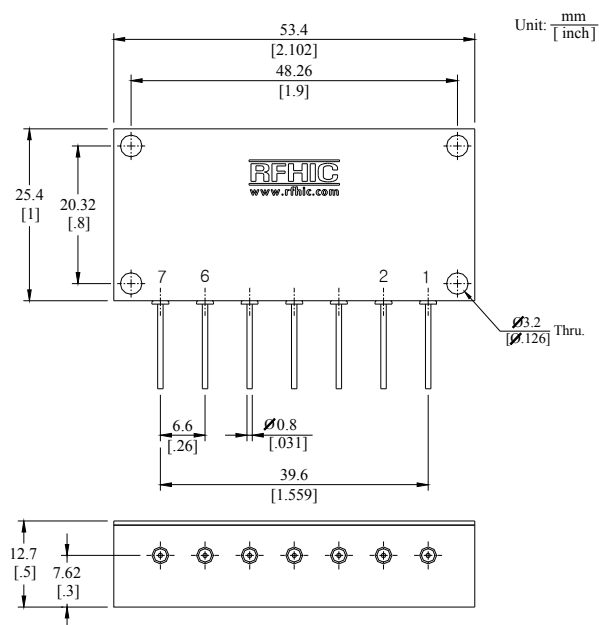
* Input Signal Condition : CW 1-Tone

For more information, please contact RFHIC

Precautions

1. This product is designed to be used for broadband amplification.
Heat generation is higher when there is no RF signal in the device. Therefore, the worst case scenario is when there is no RF signal, and the amplifier is “on” with current draw.
The temperature must be calculated properly.
Case temperature must maintain below 80°C.
2. Thermal Grease or Metal Thermal Interface Materials are recommended for heat dissipation. An example would be spreading thermal grease on the bottom of the device.

Package Dimensions



Pin Description

Pin No	Port Name	Function
1	GND	Ground
2	RF IN	RF Input
3	NC	Not Connection
4	GND	Ground
5	Vcc	DC Supply(+28V)
6	RF OUT	RF Output
7	GND	Ground

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