# Wideband Amplifier RFC1G18H4-24

# RFHC

#### **Product Features**

GaN MMIC

# Application

• Drive Amplifier

- Very Low Distortion
- Guaranteed Broadband Power Gain
- Heat Sink 99.9% Copper, Ag or Gold Plate
- Excellent Thermal Conductivity
- Single Supply Voltage @ 24V
- No External Circuit needed



Package : DP-27

## Description

The RFC1G18H4- 24 is specifically designed for up to 1GHz in frequency as amplifiers. This hybrid dynamic range amplifier module operates with a single voltage supply of 24V(DC). The RFC1G18H4- 24 is equipped with over-voltage suppressor.

#### Specifications

#### **Absolute Maximum Ratings**

PARAMETER	MIN	MAX	UNITS
$V_{DD}/V_{RFOUT}$	0	28	VDC
RF <sub>IN</sub> (Single Tone)	-	+30	dBm
Storage Temperature	-40	+100	Ĵ
Operating Temperature	-20	+100	Ĵ

#### Electrical Specifications (TA = +25 °C, VDD = 24V)

PARAMETER	RFC1G18H4-24			
	MIN	ТҮР	MAX	
Bandwidth (MHz)	20	-	1000	
Gain @1000MHz (dB)	18.0	19.0	-	
Gain Flatness @20-1000MHz (dB)	-	1.5	2.0	
Input / Output VSWR	2.5 : 1	2.0 : 1		
IP3 (dBm)@20-1000MHz	43.0	44.0	-	
Power Output 3dB Comp. @20-1000MHz (dBm)	35.0	36.0		
IMD3 (dBc) Two Tone 20dBm Output @20-1000MHz	46	48.0	-	
Noise Figure (dB) @ 20-1000MHz	-	3.0	7.0	
Supply Current (mA)	500	550	600	

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• All specifications may change without notice.

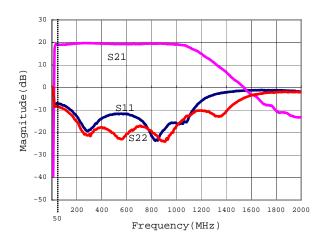
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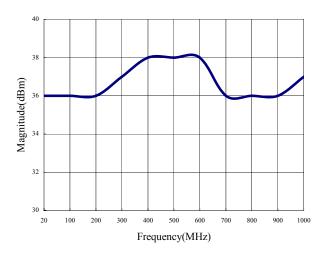
# Typical RF Performance at 25 °C

Parameter	Units	Typical		
Frequency	MHz	20	500	1000
S21 - Gain	dB	19	19	20
S11 – Input Return Loss	dB	-10	-13	-20
S22 – Output Return Loss	dB	-12	-10	-14
P3dB	dBm	36	37	36
OIP3	dBm	45	45	44
Noise Figure	dB	7.0	2.5	4.5
Supply Voltage	v		24	
Current	mA		550	

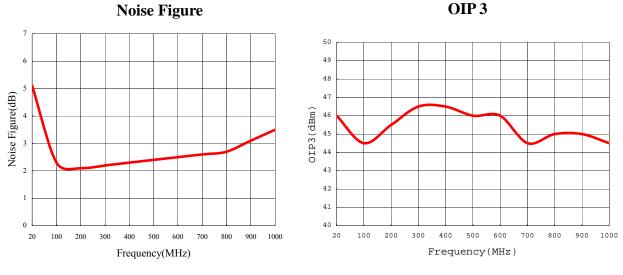
#### **S-Parameters**



**Power Output 3dB Compression** 







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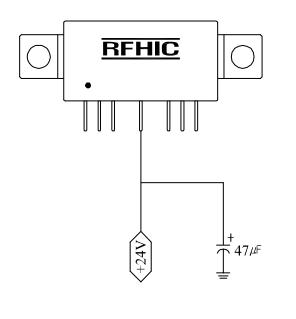
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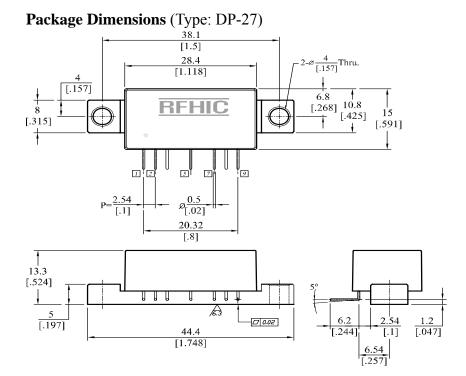
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# Applications



- 1. On the power input port (Pin#5), 47uF/35V capacitor GND is recommended.
- 2. Heat sink should be placed as tight as possible to the metal case.
- 3. Pay attention when handling electrostatic-sensitive devices.
  - Person at a workbench should be earthed via a wrist strap and a resistor.
  - All mains-powered equipment should be connected to the mains via an earth-leakage switch.
  - Equipment cases should be grounded.
  - Relative humidity should be maintained between 40% and 50%.
  - An ionizer is recommended.
  - Keep static materials, such as plastic envelopes and plastic trays etc., away from the workbench.
- 4. One must put the power off, before adjusting the in/output matching of the system.
- 5. Pay close attention to the input voltage not to over power the hybrid.
- 6. Do not open the Plastic cover to change the matching inside the hybrid.





Pin No.	Function	
1	RF Input	
2,3,7,8	Ground	
5	Vcc	
9	RF Output	

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