



无线回程网 (无线路由)

WIRELESS BACKHAUL

移动通信中继器 CELLULAR REPEATERS

信号增强器 SIGNAL BOOSTERS

企业/运营商级 WiFi 接入点

ENTERPRISE / CARRIER-CLASS

WI-FI ACCESS POINTS

小蜂窝 (微基站) SMALL CELLS

基站/分布式天线系统

BASE STATIONS / DAS

测试设备/仪器

TEST EQUIPMENT / INSTRUMENTATION

军用通讯/GPS 导航

MILITARY COMMUNICATIONS / GPS

汽车电子

AUTOMOTIVE



Making Better Networks

助您**做更好的无线网络**



Ultra-LNA™

---GRF 公司特有的 Ultra-LNA™ 超低噪放大器系列---

P/N 型号	Tuning Range (GHz) 工作频段	Reference Conditions 参考条件	Gain (dB) 增益	EVB NF (dB) 评估板NF	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Package (mm) 封装形式	Features 特点
GRF2051	0.7 - 3.8	1.9 GHz 5.0V; 70mA	19.0	0.37	21.0	36.0	2.7 - 5.0	20 - 100	2.0 x 2.0 QFN-12	超低噪声 高增益、灵活偏置
GRF2052	2.3 - 4.5	2.5 GHz 5.0V; 70mA	19.2	0.50	21.0	38.0	2.7 - 5.0	20 - 100	2.0 x 2.0 QFN-12	超低噪声 高增益、灵活偏置
GRF2070	0.4 - 1.5	0.9 GHz 5.0V; 75mA	20.8	0.35	20.0	39.5	2.7 - 5.0	20 - 100	2.0 x 2.0 DFN-8	超低噪声 高增益、灵活偏置
GRF2071	0.7 - 2.7	1.9 GHz 5.0V; 60mA	19.0	0.35	21.0	38.0	2.7 - 5.0	20 - 100	2.0 x 2.0 DFN-8	超低噪声 高增益、灵活偏置
GRF2072	2.3 - 3.8	2.5 GHz 5.0V; 70mA	19.8	0.55	20.0	37.5	2.7 - 5.0	20 - 100	2.0 x 2.0 DFN-8	超低噪声 高增益、灵活偏置
GRF2073	3.0 - 6.0	3.6 GHz 5.0V; 70mA	18.6	0.65	18.0	35.0	2.7 - 5.0	20 - 100	2.0 x 2.0 DFN-8	超低噪声 高增益、灵活偏置
GRF2080	0.4 - 1.5	0.9 GHz 5.0V; 70mA	20.8	0.35	20.0	39.5	2.7 - 5.0	20 - 100	2.0 x 2.0 DFN-8	超低噪声、高增益 逻辑控制关闭
GRF2081	0.7 - 2.7	1.9 GHz 5.0V; 70mA	19.0	0.35	21.0	38.0	2.7 - 5.0	20 - 100	2.0 x 2.0 DFN-8	超低噪声、高增益 逻辑控制关闭
GRF2082	2.3 - 3.8	2.5 GHz 5.0V; 70mA	19.8	0.55	20.0	37.5	2.7 - 5.0	20 - 100	2.0 x 2.0 DFN-8	超低噪声、高增益 逻辑控制关闭
GRF2083	3.0 - 6.0	3.6 GHz 5.0V; 70mA	18.6	0.65	18.0	35.0	2.7 - 5.0	20 - 100	2.0 x 2.0 DFN-8	超低噪声、高增益 逻辑控制关闭
GRF2105	0.4 - 5.0	2.5 GHz 5.0V; 70mA	20.7	0.77	22.5	36.0	2.7 - 5.0	20 - 90	1.5 x 1.5 DFN-6	低噪声、平坦度好 高增益、可灵活偏置

详细技术资料, 如 Datasheet, 请去官网下载 <http://guerrilla-rf.com>

PA/Power-LNA™

---功放型低噪放---

P/N 型号	Tuning Range (GHz) 工作频段	Reference Conditions 参考条件	Gain (dB) 增益	EVB NF (dB) 评估板NF	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Package (mm) 封装形式	Features 特点
GRF5010	0.05 - 6.0	2.5 GHz 5.0V; 60mA 8.0V; 95mA	17.0	0.82	24.5	38.5	4.5 - 9.0	50 - 150	3.0 x 3.0 QFN-16	高线性、低噪声 高增益、灵活偏置
			17.0	0.85	-	-				
GRF5020	0.1 - 6.0	2.5 GHz 5.0V; 65mA 8.0V; 95mA	17.3	0.80	24.5	37.5	4.5 - 10.0	50 - 200	3.0 x 3.0 QFN-16	高线性、低噪声 高增益、灵活偏置
			18.0	0.85	-	-				
GRF5040	0.1 - 3.8	2.5 GHz 5.0V; 160mA 8.0V; 200mA	15.1	0.80	25.7	42.5	4.5 - 10.0	100 - 250	3.0 x 3.0 QFN-16	高线性、低噪声 高增益、灵活偏置
			15.3	0.85	30.2	46.0				
GRF5109	0.4 - 1.5	0.9 GHz 5.0V; 170mA	17.9	1.2	28.3	45.0	2.7 - 5.0	50 - 200	3.0 x 3.0 QFN-16	高线性、低噪声 高增益、灵活偏置
GRF5110	1.5 - 2.7	1.9 GHz 5.0V; 150mA	15.0	0.9	28.8	45.0	2.7 - 5.0	50 - 200	3.0 x 3.0 QFN-16	高线性、低噪声 高增益、灵活偏置
GRF5115	0.1 - 2.7	1.95 GHz 5.0V; 250mA	14.8	1.4	33.0	45.0	2.7 - 5.0	100 - 300	3.0 x 3.0 QFN-16	高线性、低噪声 高增益、灵活偏置
GRF5511	0.7 - 6.0	5.5 GHz 5.0V; 100 mA 8.0V; 150 mA	15.4	1.7	25.8	44.0	4.5 - 9.0	50 - 200	3.0 x 3.0 QFN-16	高线性、低噪声 高增益、灵活偏置
			15.7	1.8	29.5	44.3				

详细技术资料, 如 Datasheet, 请去官网下载 <http://guerrilla-rf.com>

Low Current LNAs/Drivers for ISM/WLAN-----用于ISM 频段/无线局域网的低电流低噪放/驱动放大器

P/N 型号	Tuning Range (GHz) 工作频段	Reference Conditions 参考条件	Gain (dB) 增益	EVB NF (dB) 评估板NF	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Package (mm) 封装形式	Features 特点
GRF2100	0.1 - 3.8	2.5 GHz 3.3V; 15mA	16.5	0.80	12.0	20.0	1.8 - 5.0	6 - 30	1.5 x 1.5 DFN-6	低电流、高增益 低噪声、低成本
GRF2101	4.0 - 7.0	5.5 GHz 3.3V; 18mA	18.0	0.9	10.0	22.0	2.7 - 5.0	12- 28	1.5 x 1.5 DFN-6	高增益 低噪声、低成本
GRF2140 [®]	0.1 - 3.8	2.5 GHz 3.3V; 15mA	16.2	1.1	10.0	23.5	2.7 - 5.0	6 - 30	1.5 x 1.5 DFN-6	高增益、低噪声 旁路功能
GRF2501	4.9 - 6.0	5.5 GHz 3.3V; 15mA	16.0	1.0	7.0	19.0	2.7 - 5.0	12 - 28	1.5 x 1.5 DFN-6	高增益、低噪声 内匹配
GRF2505	4.0 - 6.0	5.5 GHz 5.0V; 40mA	12.5	1.2	19.0	30.0	1.8 - 5.0	20 - 60	1.5 x 1.5 DFN-6	高线性、低噪声
GRF2541 [®]	4.9 - 6.0	5.5 GHz 3.3V; 18mA	16.4	1.0	7.0	19.0	2.7 - 5.0	12 - 28	1.5 x 1.5 DFN-6	高增益、低噪声 旁路功能、内匹配
GRF2806	0.7 - 0.96	0.9 GHz 5.0V; 15 mA	20.0	1.2	13.5	23.5	2.7 - 5.0	10 - 30	4.0 module	高增益、低噪声 内匹配
GRF2807	1.6 - 2.5	1.9 GHz 5.0V; 15mA	18.2	0.8	13.4	23.0	2.7 - 5.0	10 - 30	4.0 module	高增益、低噪声 内匹配

© Guerrilla Armor™ / Bypass Mode

© GRF 专利技术 Guerrilla Armor™ / 旁路模式

Failsafe SPDT Switch

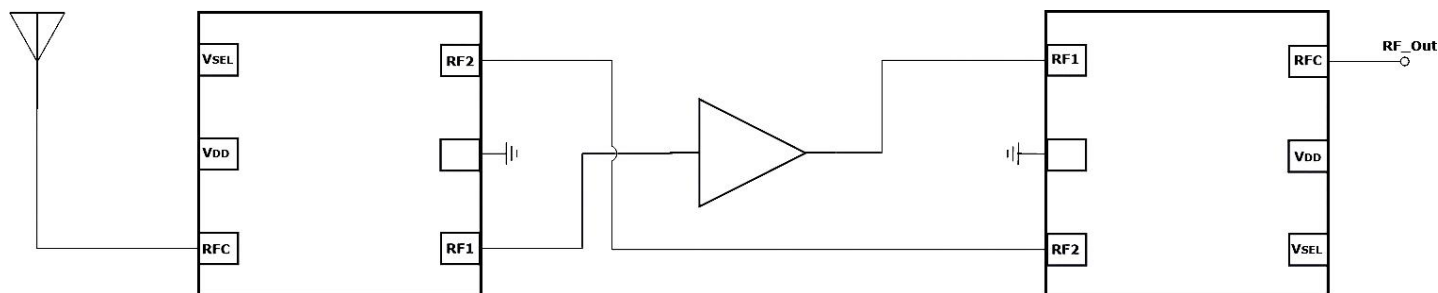
----失效保护单刀双掷(SPDT)开关----

P/N 型号	Frequency Range (GHz) 工作频段	Reference Conditions 参考条件	Insertion Loss (dB) 插入损耗	Failsafe Loss (dB) 保护时损耗	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Internally Matched (50 ohms) 内匹配	Package (mm) 封装形式
GRF6011	0.1 - 3.8	1.9 GHz 3.3V (RF1)	0.43	0.40	32.0	49.5	3.0 - 5.0	N/A	Yes	1.5 x 1.5 DFN-6

器件断电时，路径1短路，路径2开路

LNA with Failsafe Bypass Using GRF6011

使用 GRF6011 的故障安全隔离的 LNA 电路示意图



Broadband LNA / Linear Drivers

----宽带 LNA / 线性驱动放大器----

P/N 型号	Tuning Range (GHz) 工作频段	Reference Conditions 参考条件	Gain (dB) 增益	EVB NF (dB) 评估板NF	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Package (mm) 封装形式	Features 特点
GRF2133	0.4 - 2.7	1.9 GHz 5.0V; 60mA	28.5	0.65	20.3	30.0	1.8 - 5.0	30 - 100	1.5 x 1.5 DFN-6	超高增益、低噪声 灵活偏置
GRF2710	8.0 - 13.0	11 GHz 5.0V; 25mA	13.9	2.1	13.0	21.0	3.0 - 8.0	20 - 40	1.5 x 1.5 DFN-6	高增益、低噪声 灵活偏置
GRF4001	0.1 - 6.0	2.5 GHz 3.3V; 45mA	15.5	1.0	16.5	30.5	1.8 - 5.0	5 - 50	1.5 x 1.5 DFN-6	高增益、低噪声 内匹配、灵活偏置
GRF4002	0.1 - 3.8	2.5 GHz 5.0V; 70mA	15.0	0.85	23.5	36.5	1.8 - 5.0	20 - 80	1.5 x 1.5 DFN-6	高增益、低噪声 内匹配、灵活偏置
GRF4003	0.1 - 3.8	2.5 GHz 5.0V; 95mA	13.0	0.85	25.0	41.0	1.8 - 5.0	30 - 120	1.5 x 1.5 DFN-6	高增益、低噪声 内匹配、灵活偏置
GRF4004	0.1 - 3.8	2.5 GHz 5.0V; 135mA	12.7	0.85	26.5	43.0	1.8 - 5.0	30 - 150	1.5 x 1.5 DFN-6	高线性、低噪声 灵活偏置
GRF4005	0.1 - 3.8	2.5 GHz 5.0V; 170mA	13.0	0.85	27.5	43.0	1.8 - 5.0	50 - 200	1.5 x 1.5 DFN-6	高线性、低噪声 灵活偏置
GRF4014	0.1 - 6.0	2.5 GHz 5.0V; 60mA 8.0V; 110mA	17.0 17.0	0.80 0.83	24.5 28.3	39.0 44.0	3.0 - 8.0	30 - 130	1.5 x 1.5 DFN-6	高线性、低噪声 灵活偏置
GRF4042 [Ⓢ]	0.4 - 2.7	1.9 GHz 5.0V; 70mA	16.0	0.9	22.0	36.0	1.8 - 5.0	20 - 180	2.0 x 2.0 QFN-12	高增益、低噪声 内匹配、灵活偏置 旁路功能
GRF4142 [Ⓢ]	0.1 - 2.7	1.9 GHz 5.0V; 70mA	16.0	0.95	19.0	34.0	1.8 - 5.0	20 - 80	1.5 x 1.5 DFN-6	高增益、低噪声 灵活偏置、旁路功能 单个逻辑控制

Ⓢ Guerrilla Armor™ / Bypass Mode

Ⓢ GRF 专利技术 Guerrilla Armor™ / 旁路模式

High Linearity Gain Blocks

----高线性增益块----

P/N 型号	Tuning Range (GHz) 工作频段	Reference Conditions 参考条件	Gain (dB) 增益	EVB NF (dB) 评估板NF	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Package (mm) 封装形式	Features 特点
GRF2012	0.05 - 3.8	0.9 GHz 5.0V; 90mA	15.0	2.7	22.5	40.0	2.7 - 5.0	30 - 120	1.5 x 1.5 DFN-6	增益平坦、高线性 内匹配、灵活偏置
GRF2013	0.05 - 8.0	1.9 GHz 5.0V; 90mA	18.5	1.3	22.5	38.5	1.8 - 5.0	40 - 120	1.5 x 1.5 DFN-6	增益平坦; 低噪声 高线性、内匹配 灵活偏置
GRF2014	0.05 - 3.8	0.9 GHz 5.0V; 150mA	15.9	3.3	24.0	43.5	2.7 - 5.0	50 - 180	1.5 x 1.5 DFN-6	增益平坦、高线性 内匹配、灵活偏置

High Frequency Gain Blocks

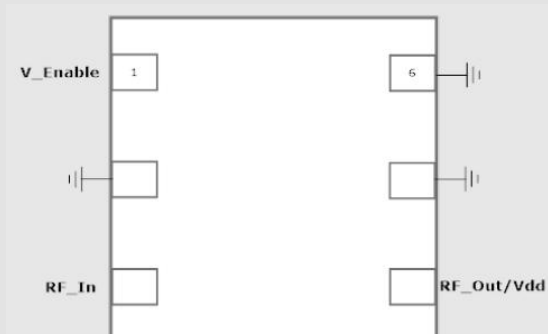
----超宽频段增益块----

P/N 型号	Tuning Range (GHz) 工作频段	Reference Conditions 参考条件	Gain (dB) 增益	EVB NF (dB) 评估板NF	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Package (mm) 封装形式	Features 特点
GRF2003	0.1- 10.0	6.0 GHz 5.0V; 55mA	12.0	3.8	14.0	27.5	2.7 - 5.0	40 - 80	1.5 x 1.5 DFN-6	高频率; 内匹配、灵活偏置
GRF2004	0.1 - 10.0	6.0 GHz 5.0V; 100mA	14.0	1.9	15.8	29.8	2.7 - 5.0	60 - 120	1.5 x 1.5 DFN-6	高频率; 低噪声 内匹配、灵活偏置
GRF3042	0.01 - 13.0	4.0 GHz 45mA	14.5	3.4	14.7	26.0	>5.0	35 - 60	1.5 x 1.5 DFN-6	高频率; 内匹配
GRF3044	0.01 - 11.0	4.0 GHz 100mA	16.9	2.1	19.6	31.5	>5.0	60 - 120	1.5 x 1.5 DFN-6	高频率; 低噪声 内匹配

Guerrilla RF's DFN-6 Package Portfolio

----GRF 品牌之DFN-6 封装系列----

- Ultra-small: 1.5 x 1.5 x 0.45 mm
- Common pinouts and layouts offer design flexibility
- Wide range of gain, linearity and NF using single layout
- Thermally-efficient, cost-effective plastic package
- 超小型 : 1.5 x 1.5 x 0.45 mm
- 通用引脚布局使得设计灵活自由
- 同一引脚布局, 不同的增益、线性度和噪声系数器件可选
- 采用塑封, 散热好, 成本低



DFN-6封装 射频放大器IC系列

- GRF2003
- GRF2004
- GRF2012
- GRF2013
- GRF2014
- GRF2100
- GRF2101
- GRF2105
- GRF2133 (Vdd2 to Pin 6)
- GRF2140
- GRF2501
- GRF2505
- GRF2541
- GRF2710
- GRF3042
- GRF3044
- GRF4001
- GRF4002
- GRF4003
- GRF4004
- GRF4005
- GRF4014
- GRF4142



Fully integrated ultra-low noise amplifier, driver and PA modules

全集成 超低噪放大器、驱动放大器和功放模块

- Fully integrated modules with exception of current-setting resistor
 - Internally matched to 50 ohms eliminating matching requirements
 - Layout reduced to providing RF/thermal ground beneath device
 - Flexible bias voltage and current for optimal efficiency and linearity
 - 4.0 x 4.0 mm thermally-efficient, plastic package
- 内部集成了除调整电流大小的电阻以外的全部分离器件
 - 采用内匹配方式，输入输出端口直接匹配到标准50欧姆，取消了复杂的外部匹配，简化电路设计，增加了可靠性
 - 器件底部大面积接地，射频性能好，散热快，提高可靠性
 - 灵活的偏置电压和电流以获得最佳的效率和线性度
 - 4.0 x 4.0 mm 高集成度设计，塑封，压缩体积和成本，兼顾良好的散热效能

Guerrilla Bloc™ Fully Integrated Modules (Arrivals begin: Q2 2017)

---Guerrilla Bloc™ 全集成模块---

P/N 型号	Frequency Range (GHz) 工作频段	Reference Conditions 参考条件	Gain (dB) 增益	NF (dB) 评估板NF	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Internally Matched(50Ω) 内匹配至50Ω	Features 特点
GRF2806	0.7 - 0.96	0.9 GHz 5.0V; 15 mA	20.0	1.2	13.5	23.5	2.7 - 5.0	10 - 30	Yes	高增益、低噪声 内匹配
GRF2807	1.6 - 2.5	1.9 GHz 5.0V; 15mA	18.2	0.80	13.4	23.0	2.7 - 5.0	10 - 30	Yes	高增益、低噪声 内匹配



Making Better Networks 助您做更好的无线网络

Guerrilla RF's high-performance RF and Microwave IC products enable greater coverage areas and higher data rates for wireless networks. Focused on a wide variety of infrastructure and general market applications, our unique products utilize our patented Guerrilla Armor technology, expert IC design talents, cutting-edge device technologies and high-capacity supply chain to deliver superior performance. Our team of industry veterans are committed to providing detailed, custom applications support through all stages of your product design process from initial prototyping through mass production. Please see the Guerrilla RF website for all the latest product information at: www.guerrilla-rf.com

Guerrilla RF 的高性能射频和微波 IC 产品可为无线网络提供更高的覆盖面积和更高的数据速率。专注于各种基础设施和一般市场应用，我们独特的产品利用我们的专利 Guerrilla Armor™ 技术、专业 IC 设计人才、尖端器件技术和高能供应链，为用户提供卓越的性能。我们的行业资深团队在您产品设计过程的各个阶段-从初始样机设计到批量生产-竭诚提供详细的定制应用支持。有关所有最新产品信息，请参看 Guerrilla RF 网站：www.guerrilla-rf.com

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