

Avago射频微波器件选型指南



4W线性功率放大器:

与小型蜂窝设备匹配度最高，输出功率27dBm，增益高达35dB以上，全系列管脚兼容，设计简单，频率覆盖面广

低噪声低成本宽带LNA:

全系列管脚兼容，设计简单，频率覆盖面广，专为实现高效、低成本、全覆盖的家庭基站

多模多频PA:

2*2.5mm超小体积，CoolPAM技术，覆盖LTE全频段，高通平台首选方案

高性能FBAR滤波器:

Band40/41和wifi共存问题的最优解决方案

本资料所涉及产品主要应用于:

3G/4G基站、直放站、广播电视发射机、WIFI/WLAN、无线射频覆盖、微波检测、工业用微波探测、CMMB、RFID、FTTH、移动通信终端、移动数字终端等

About SEKORM

关于世强

- 成立于1993年，总部深圳，中国电子行业最优秀的半导体分销商
- 以帮助客户成功为最高服务宗旨，多次帮助客户实现产品创新，打破市场空白，占领市场先机
- 我们分销的产品全部来自欧美和日本的最具技术创新实力和拥有严苛品质管理的领先半导体原厂
- 我们同多家世界500强和行业龙头企业已合作多年，同时也是快速成长的新兴企业信任和选择的合作伙伴
- 提供新元件推荐、新技术导入、参考设计、应用咨询及方案等服务



工业电子

工业控制领域最大的电子元件供应商

工业自动化、变频、伺服、物联网、智能电网、可再生能源、智能四表、安防、医疗、轨道交通、电动工具



通信电子

国内最大的射频微波元件供应商

基站/直放站、雷达、卫星通信、光纤传输、Wifi、路由器、光模块、交换机、数据通信、无线通信



消费电子

最主要的智能手机和新型家电关键元件供应商

智能手机、可穿戴设备、智能家居、智能家电、便携数码、个人保健



汽车电子

最具产品实力和方案优势的汽车电子元件供应商

车身控制、底盘、仪表盘、车载娱乐、电动汽车系统、动力系统、安全系统、高级驾驶辅助系统、胎压监测系统



测试测量

中国基础电子测量仪器最大供应商

示波器、频谱仪、信号源、网络分析仪、电源、数采、频率计、功率计、万用表、函数发生器、LCR表、电子负载、射频微波测试附件

About Avago

关于安华高

安华高(Avago)是全球顶级的模拟、数字、混合信号、光电器件及子系统产品供应商，承袭惠普 (Hewlett-Packard) 公司至今 50 年的技术创新传统，2005年作为全球最大的非上市独立半导体公司开始运作，主要专注于复合III-V半导体产品的设计和处理，总部位于美国加州圣何塞。

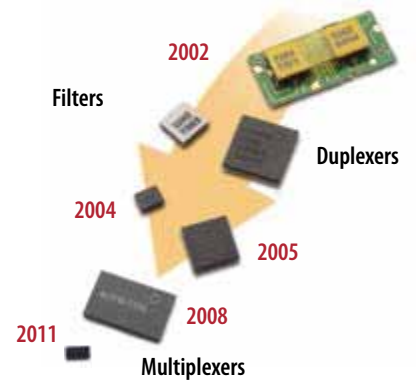
藉由丰富广泛的知识产权，Avago 面向包括无线通信、有线基础建设以及工业应用等三个主要目标市场提供产品。

安华高科技一直处于无线领域革命的最前沿，其射频器件的创新不断正成为无线通信革命的动力源泉。安华高提供广泛的移动连接和无线解决方案，是全球无线设备制造商和服务商的首选合作伙伴。安华高CoolPAM功率放大器，薄膜体声波谐振器 (FBAR)，增强型的pHEMT低噪声放大器更是在性能、尺寸、省电方面树立了新的标准。

薄膜体声波谐振器（FBAR）滤波器，双工器，多工器和 GPS 前端模块

今天的智能手机面临着许多挑战，需要支持苛刻的 LTE 频段与多个无线系统频段之间的共存。安华高科技具有优越特性的 FBAR 滤波器所具有的低插损和陡峭的抑制特性可帮助设计人员应对这些挑战。Microcap 晶圆之间的焊接工艺促进了其灵活性、最小封装、实现了真正芯片级的滤波器。FBAR 滤波器与 EpHEMT LNA 的集成更是推出了一系列的高性能模块来支持 GPS 和 GLONASS 应用。

安华高科技用 FBAR 这种新的滤波技术来帮助设计人员解决棘手的滤波问题。



特性

- 陡峭的滚降系数
- 低插损
- 高隔离度
- 非常好的带外抑制
- 优秀的功率容量
- 非常低的温飘

优点

- 可以更有效地利用频谱
- 延长电池寿命
- 支持多个无线系统的共存
- 符合 LTE 对二次谐波的严格要求
- 提高手机灵敏度，提升数据速率和网络性能
- 支持多种通信标准

FBAR 双工器

UMTS Band 1	UMTS Band 2 / CDMA PCS	UMTS/LTE Band 3	LTE/UMTS Band 4/CDMA AWS-1	LTE Band 7	LTE B25/BC14	UMTS Band 8
ACMD-7614 ACMD-7617	ACMD-4102, ACMD-4502, ACMD-6102, ACMD-7407, ACMD-7409, ACMD-7410, ACMD-7411	ACMD-6003, ACMD-6103	ACMD-4104, ACMD-7609	ACMD-6007 ACMD-6207 ACMD-6307	ACMD-4202 ACMD-6025 ACMD-6125	ACMD-7606 ACMD-7610

FBAR 多工器

Part No.	Standard	Package Size
ACFM-7109	CDMA PCS & Cellular Quadplexer	3.0x5.0x1.05 mm
ACFM-7110	CDMA PCS & Cellular Quadplexer	3.0x5.0x1.05 mm
ACFM-7107	CDMA PCS & Cellular Quadplexer	4.0x7.0x1.2 mm
ACFM-7325	Extended PCS & Cellular (BC10/BC14) Quadplexer	4.0x7.0x1.2 mm
ACFM-7425	PCS & Extended Cellular (BC10/B25) Quadplexer	4.0x7.0x1.2 mm

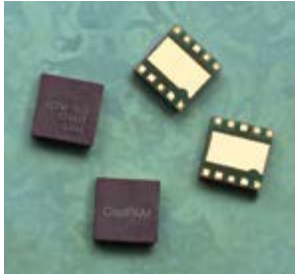
FBAR 滤波器

Part No.	Standard	Passband	Package Size
ACPF-7005	CDMA PCS+BC14/B25	1850-1915 MHz	1.6 x 2.0 x 1.1mm
ACPF-7024	ISM/WLAN/BT	2401-2482 MHz	1.6 x 2.0 x 0.95 mm
ACPF-7025	B41	2496-2690 MHz	2.5 x 2.5 x 1.0 mm
ACPF-7041	LTE B41	2496-2690 MHz	2.0 x 2.0 x 0.9 mm
ACPF-7124	ISM/WLAN/BT	2401-2482 MHz	1.1 x 1.4 x 0.8 mm
ACPF-7224	ISM/WLAN/BT	2401-2482 MHz	1.1 x 1.4 x 0.8 mm
ACPF-7324	ISM/WLAN/BT	2401-2482 MHz	0.66 x 0.92 x 0.25 mm
ACPF-8025/8125	LTE B25 Rx Diversity	1930-1995 MHz	1.1 x 1.4 x 0.8 mm
ACPF-8040	LTE B40	2300-2400 MHz	2.0 x 1.6 x 0.95 mm
ACPF-8240	LTE B40	2300-2400 MHz	1.1 x 1.4 mm
ACPF-9002	WLAN	2403-2493 MHz	0.6 x 0.81 x 0.25 mm
ACFF-1024	WiFi	2401-2482 MHz	1.1 x 1.4 x 0.8 mm

GNSS 前端模块

Part No.	Passband	Configuration	Package Size
AGPS-C003 (GPS, GLONASS+Cellular)	1565-1606 MHz	Diplexer	2.0x2.0x0.95 mm
ALM-GN001 (GPS, GLONASS)	1565-1606 MHz	Filter-LNA	2.3x1.7x0.9 mm
ALM-2712 (GPS)	1574.42-1576.42 MHz	Filter-LNA-Filter	3.0x2.5x1.0 mm
ALM-1712 (GPS)	1574.42-1576.42 MHz	Filter-LNA-Filter	4.5x2.2x1.1 mm
ALM-1812 (GPS)	1574.42-1576.42 MHz	Filter-LNA-Filter	4.5x2.2x1.1 mm
ALM-1612 (GPS)	1574.42-1576.42 MHz	LNA-Filter	3.3x2.1x1.0 mm
ALM-2412 (GPS)	1574.42-1576.42 MHz	LNA-Filter	3.3x2.1x1.1 mm

功率放大器模块和功放 – 双工前端模块



安华高科技的 CoolPAM 和 FEM 技术提供优越的性能。

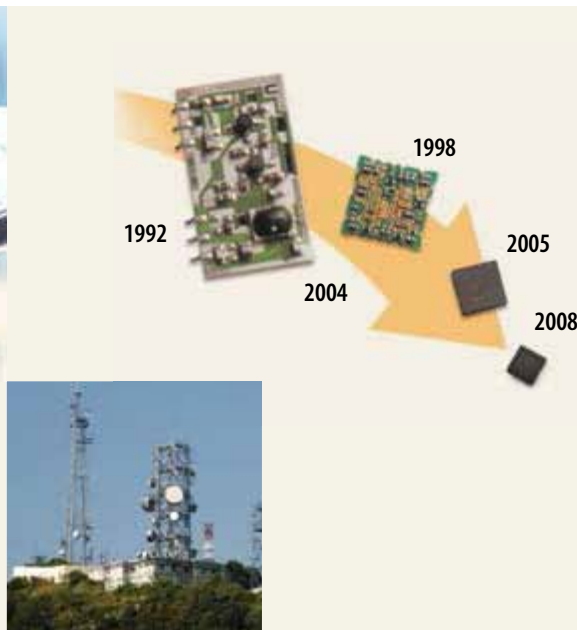
电池寿命是下一代移动手持设备设计中需要面对的最重要的问题之一。这不仅仅是充电方便与否的问题，而是功放省出的电来供其他设备利用，如大屏显示等；安华高已经开发出的 CoolPAM 技术有助于优化电池寿命，通过只供给功放所需要的最低功耗，从而大大提高工作效率。安华高在功率器件方面拥有超过 15 年的设计和制造技术，为许多不同的应用提供功率放大模块。此外，安华高结合了其业界领先的 FBAR 和 CoolPAM 技术，提供了一系列集成模块，这些模块通过组合多个“最佳”的技术以及优化分区和设备接口来提供优越的电气性能，从而让设计人员可以将产品更快推向市场，减少风险，得到更高的收益。

特性

- 高效率
- 集成耦合器
- 支持多种标准，包括 CDMA，W-CDMA，GSM / EDGE，LTE，和 TD-SCDMA
- 同一封装支持多个常见频段

优点

- 延长电池寿命
- 优秀的功率控制
- 支持复杂的 3G 和 4G 架构
- 可支持多种标准



安华高科技在功率产品领域拥有超过 15 年的设计和生产经验，可以实现更小的器件尺寸和更高的效率。

功率放大器

Classification	Part No.	Bands	Control	Signal	Package Size	C: CDMA U: UMTS L: LTE T: TD-SCDMA
Single Band PA	ACPM-9001	B1	GPIO	APT	2 x 2.5mm	C/U/L/T
	ACPM-9002	B2	GPIO	APT	2 x 2.5mm	C/U/L
	ACPM-9004	B4	GPIO	APT	2 x 2.5mm	L
	ACPM-9013	B13	GPIO	APT	2 x 2.5mm	L
	ACPM-9017	B17	GPIO	APT	2 x 2.5mm	L
	ACPM-9020	B20	GPIO	APT	2 x 2.5mm	L
	ACPM-9040	B40	GPIO	APT	2 x 2.5mm	L
	ACPM-9041	B41	GPIO	APT	2 x 2.5mm	L
	ACPM-9307	B7	MIPI	APT	2 x 2.5mm	L
	ACPM-9311	B11	MIPI	APT	2 x 2.5mm	L
	ACPM-9313	B13	MIPI	APT	2 x 2.5mm	L
	ACPM-9317	B17	MIPI	APT	2 x 2.5mm	L
	ACPM-9320	B20	MIPI	APT	2 x 2.5mm	L
	ACPM-9328	B28	MIPI	APT	2 x 2.5mm	L
	ACPM-9330	B30	MIPI	APT	2 x 2.5mm	L
	ACPM-9340	B40	MIPI	APT	2 x 2.5mm	L
	ACPM-9341	B41	MIPI	APT	2 x 2.5mm	L
	ACPM-9407	B7	MIPI	ET	2 x 2.5mm	L
	ACPM-9411	B11	MIPI	ET	2 x 2.5mm	L
	ACPM-9412	B12	MIPI	ET	2 x 2.5mm	L
	ACPM-9413	B13	MIPI	ET/APT	2 x 2.5mm	L
	ACPM-9417	B17	MIPI	ET	2 x 2.5mm	L
	ACPM-9420	B20	MIPI	ET	2 x 2.5mm	L
	ACPM-9428	B28	MIPI	ET	2 x 2.5mm	L
	ACPM-9430	B30	MIPI	ET	2 x 2.5mm	L
Dual band PA	ACPM-9081	B1/B8 (SiDo)	GPIO	APT	3 x 4mm	C/U
	ACPM-9052	B2/B5 (SiDo)	GPIO	APT	3 x 4mm	C/U
	ACPM-920502	B2/B5	GPIO	APT	3 x 4mm	C/U/L
	ACPM-920417	B4/B17	GPIO	APT	3 x 4mm	U/L
	ACPM-920413	B4/B13	GPIO	APT	3 x 4mm	U/L
	ACPM-920720	B7/B20	GPIO	APT	3 x 4mm	L
	ACPM-924140	B40/B41	GPIO	APT	3 x 4mm	L
Mulit mode Multi band PA	ACPM-7500	B1/B2/B3(4)/B5/B8	GPIO	APT	5 x 7mm	C/U/L
	ACPM-7700	B1/B2/B3(4)/B5/B8	MIPI	APT	5 x 7mm	C/U/L
	ACPM-7717	B1/B2/B3/B4(B34,39)/B5/B8/B17(B20)	MIPI	APT	5 x 7mm	C/U/L/T
	ACPM-7600	B1/B2/B3/B4/B5/B8	MIPI	ET/APT	5 x 7mm	C/U/L
	ACPM-7620	B1/B2/B3/B4/B5/B8/B20	MIPI	ET/APT	5 x 7mm	C/U/L
	ACPM-7617	B1/B2/B3/B4/B5/B8/B17	MIPI	ET	5 x 7mm	C/U/L
PAD	AFEM-7613	B13	APT	APT	3 x 5.5mm	L
	AFEM-7007	B7	MIPI	ET	4 x 2.5mm	L
CMOS PA	AJAV-6101	B1	GPIO	APT	3 x 3mm	U
	AJAV-6751	B1&5	GPIO	APT	3 x 3mm	U
	AJAV-6752	B2&5	GPIO	APT	3 x 4.2mm	U
	AJAV-6781	B1/B8	GPIO	APT	3 x 4.2mm	U

系统框图和产品建议

无线基础设施

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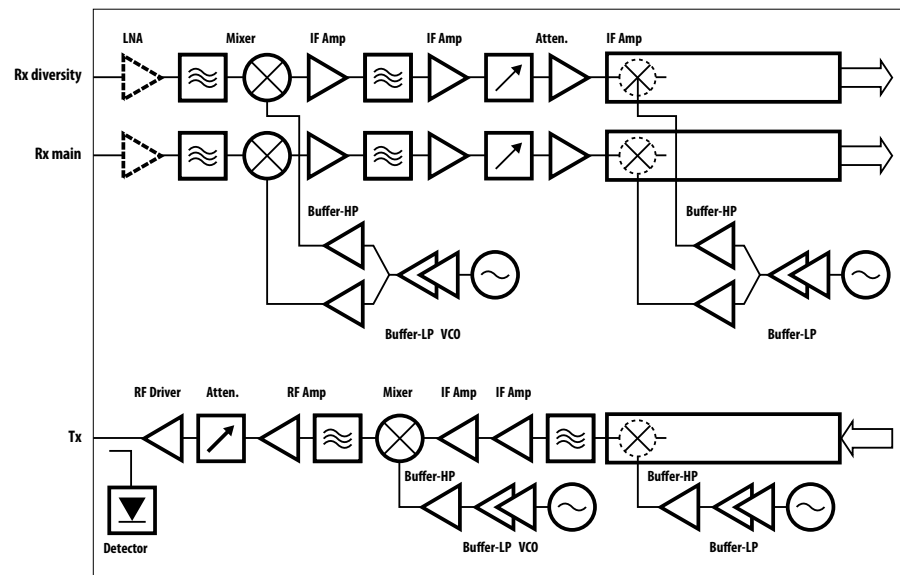
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产品选型指引

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基站射频板卡



射频板卡推荐器件

Application	Part Number	Typ. Bias V/ mA	Frequency Range/GHz	Gain/dB ¹ @ 2GHz	P1dB/dBm ¹ @ 2GHz	OIP3/dBm @ 2GHz	NF/dB ² @ 2GHz	Device Type and Package (mm)
LNA	MGA-13116	5/55	0.4 - 1.5	38	23.3	41.4	0.51	QFN 4x4x0.85
	MGA-13216	5/53	1.5 - 2.5	35.8	23.6	40.5	0.61	QFN 4x4x0.85
	MGA-13316 ⁶	5/53	2.2 - 4.0	34.3	23.5	41.8	0.76	QFN 4x4x0.85
	MGA-14516	5/45	1.4 - 2.7	31.7	—	23.5	0.66	QFN 4x4x0.85
	MGA-16116 ¹¹	4.8/61	0.45-1.45	18.4	21.2	21.2 (IIP3)	0.27	QFN 4x4x0.85
	MGA-16216 ¹²	4.8/52.5	1.44-2.35	18.4	19.5	19.5 (IIP3)	0.32	QFN 4x4x0.85
	MGA-16316 ¹³	4.8/53.3	1.95-4.0	18.2	18.7	15.5 (IIP3)	0.45	QFN 4x4x0.85
	MGA-53543	5/54	0.4 - 6	15.4	18.6	39.1	1.5	E-pHEMT MMIC, SOT343
	MGA-53589	5/52	0.05 - 3.0	15.8	18.2	37	1.7	SOT-89
	MGA-631P8 ⁵	4/60	0.4 - 1.5	17.5	18.0	33.1	0.53	E-pHEMT MMIC, LPCC 2x2
	MGA-632P8 ⁵	4/60	1.4 - 3	17.6	19.2	34.8	0.62	E-pHEMT MMIC, LPCC 2x2
	MGA-633P8	5/54	0.45 - 2	18	—	37	0.37	QFN 2x2x0.75
	MGA-634P8	5/48	1.5 - 2.3	17.4	22	36	0.37	QFN 2x2x0.75
	MGA-635P8	5/56	2.3 - 4.0	18	21.9	35.9	0.56	QFN 2x2x0.75
	MGA-636P8	4.8/105	0.45 - 1.5	18.5	23	41.5	0.5	QFN 2x2x0.75
	MGA-637P8	4.8/70	1.5 - 2.5	17.5	22	41.5	0.6	QFN 2x2x0.75
	MGA-638P8	4.8/90	2.5 - 4	17.5	22	39.5	0.8	QFN 2x2x0.75
	ATF-58143	3/30	0.45 - 6	16.5	19	30.5	0.5	E-pHEMT FET, SOT343
	ATF-54143	3/60	0.45 - 6	16.6	20	36.2	0.5	E-pHEMT FET, SOT343
	ALM-12124	5/227.7	1.880 - 2.025	39	23.5	36.5	0.85	MCOB 8.0x8.0x1.2
	ALM-12224	5/228.7	2.30 - 2.40	36.8	22.7	38.5	0.99	MCOB 8.0x8.0x1.2

提示：
1. 分立 FETs 的增益和 P1dB 是在最佳 IP3 匹配的情况下测试
2. NFmin 适用于分立场效应管
3. 高度的反转隔离：典型值 50dB
4. 电流可调：20–60mA
5. MGA-631P8 和 MGA-632P8 都集成了偏置电路。MGA-631P8 的数据在 900MHz 测试。

6. MGA-30116, ALM-31122 和 ALM-32120 的数据测试于 900MHz。
7. MGA-30316, ALM-31322 and ALM-32320 的数据测试于 3.5GHz。
8. MGA-13316 的数据测试于 2.5GHz
9. ALM-12124 的数据测试于 2018MHz
10. ALM-12224 的数据测试于 t 2400MHz
11. MGA-16116 的数据测试于 900 MHz

12. MGA-16216 的数据测试于 1950 MHz
13. MGA-16316 的数据测试于 2.6 GHz

无线基础设施

基站射频板卡

射频板卡推荐器件

Application	Part Number	Typ. Bias V/mA	Frequency Range/GHz	Gain/dB ¹ @ 2GHz	P1dB/dBm ¹ @ 2GHz	OIP3/dBm @ 2GHz	NF/dB ² @ 2GHz	Device Type and Package (mm)
RF Amplifier	MGA-30116 ⁶	5/202.8	0.75 - 1	17	—	44.1	2	QFN 3x3
	MGA-30216	5/206	1.7 - 2.7	14.2	—	45.3	2.8	QFN 3x3
	MGA-30316 ⁷	5/198	3.3 - 3.9	12.8	—	44.4	2.7	QFN 3x3
	MGA-30489	5/97	0.25 - 3.0	13.3	23.3	39	3	SOT-89
	MGA-30689	5/104	0.04 - 2.6	14.6	22.5	40	3.3	SOT-89
	MGA-30789	5/100	2 - 6	11.7	—	41.8	3.3	SMT 4.5x4.1x1.5
	MGA-30889	5/65	0.04 - 2.6	15.5	—	38	1.9	SMT 4.5x4.1x1.5
	MGA-30989	5/51	2 - 6	12	—	36.8	2	SMT 4.5x4.1x1.5
	MGA-31189	5/111	0.05 - 2	21	24	42	3	SOT-89
	MGA-31289	5/124	1.5 - 3	18.7	24	41.8	3	SOT-89
	MGA-31389	5/73	0.05 - 2	21.3	22.2	38.6	2	SOT-89
	MGA-31489	5/69	1.5 - 3	19.5	21.9	37.3	1.9	SOT-89
	MGA-31589	5/146	0.45 - 1.5	20.4	27.2	45.3	1.9	SOT-89
	MGA-31689	5/168	1.5 - 3	18.1	27.6	44.9	1.9	SOT-89
	MGA-31716	5/58	2	20.2	21.2	41	1.9	QFN 3x3
	MGA-31816	5/59	1.5 - 4.0	19.5	20.5	40.5	1.6	QFN 3x3
	MGA-53543	5/54	0.4 - 6	15.4	18.6	39.1	1.5	E-pHEMT MMIC, SOT343
	MGA-53589	5/52	0.05 - 3.0	15.8	18.2	37	1.7	SOT-89
	MGA-545P8	3.3/127	0.05 - 7	18.6	21.7	34	2.7	E-pHEMT MMIC, LPCC
	MGA-61563 ⁴	3/41	0.5 - 6	15.5	15.1	31.7	1	E-pHEMT MMIC, SOT363
	ATF-52189	4.5/200	0.05 - 6	16	27	42	1.21	E-pHEMT FET, SOT89
	ATF-521P8	4.5/200	0.05 - 6	17	26.5	42	0.96	E-pHEMT FET, LPCC
	ATF-53189	4/135	0.05 - 6	15.5	23	40	0.62	E-pHEMT FET, SOT89
	ATF-531P8	4/135	0.05 - 6	20	24.5	38	0.6	E-pHEMT FET, LPCC
	ADA-4789	4.1/80	DC - 2.5	16.3	16.9	29	4.5	Si MMIC, SOT89
Variable Gain Amplifier	ALM-80110 ⁸	5/110	0.4 - 1.6	(-27) to 13.6	23.3	40.3	4.8	MCOB 5.0x5.0x1.1
	ALM-80210	5/110	1.6 - 2.6	(-25.5) to 9.8	23.6	40.8	5.3	MCOB 5.0x5.0x1.1
	ALM-81224	5/383	1.45 - 2.75	23.8	27.4	44	2	MCOB 6.0x6.0x1.0
RF Driver	MGA-30489	5/97	0.25 - 3.0	13.3	23.3	39	3	SOT-89
	MGA-30689	5/104	0.04 - 2.6	14.6	22.5	40	3.3	SOT-89
	MGA-30789	5/100	2 - 6	11.7	—	41.8	3.3	SMT 4.5x4.1x1.5
	MGA-30889	5/65	0.04 - 2.6	15.5	—	38	1.9	SMT 4.5x4.1x1.5
	MGA-30989	5/51	2 - 6	12	—	36.8	2	SMT 4.5x4.1x1.5
	MGA-31189	5/111	0.05 - 2	21	24	42	3	SOT-89
	MGA-31289	5/124	1.5 - 3	18.7	24	41.8	3	SOT-89
	MGA-31389	5/73	0.05 - 2	21.3	22.2	38.6	2	SOT-89
	MGA-31489	5/69	1.5 - 3	19.5	21.9	37.3	1.9	SOT-89
	MGA-31589	5/146	0.45 - 1.5	20.4	27.2	45.3	1.9	SOT-89
	MGA-31689	5/168	1.5 - 3	18.1	27.6	44.9	1.9	SOT-89
	MGA-31716	5/58	2	20.2	21.2	41	1.9	QFN 3x3
	MGA-31816	5/59	1.5 - 4.0	19.5	20.5	40.5	1.6	QFN 3x3
	MGA-53589	5/52	0.05 - 3.0	15.8	18.2	37	1.7	SOT-89
	ATF-50189	4.5/280	0.05 - 6	15.5	29	45	1.1	E-pHEMT FET, SOT89
	ATF-501P8	4.5/280	0.05 - 6	14.7	28	45	—	E-pHEMT FET, LPCC
	ATF-511P8	4.5/200	0.05 - 6	14.8	30	41.7	1.4	E-pHEMT FET, LPCC
	ALM-31122 ⁶	5/394	0.7 - 1	15.6	—	47.6	2	MCOB 5.0x6.0x1.1
	ALM-31222	5/415	1.7 - 2.7	14.9	—	47.9	2.7	MCOB 5.0x6.0x1.1
	ALM-31322 ⁷	5/413	3.3 - 3.9	13.2	—	47.7	2.8	MCOB 5.0x6.0x1.1
	ALM-32120 ⁶	5/800	0.7 - 1.0	14	—	52	2.5	MCOB 7.0x10.0x1.1
	ALM-32220	5/800	1.7 - 2.7	14.8	—	50	3.5	MCOB 7.0x10.0x1.1
	ALM-32320 ⁷	5/800	3.3 - 3.9	12.5	—	50	2.5	MCOB 7.0x10.0x1.1

提示：

1. 分立 FETs 的增益和 P1dB 是在最佳 IP3 匹配的情况下测试。

2. NFmin 适用于分立场效应管。

3. 高度的反转隔离：典型值 50dB。

4. 电流可调：20–60mA。

5. MGA-631P8 和 MGA-632P8 都集成了偏置电路。MGA-631P8 的数据在 900MHz 测试。

6. MGA-30116, ALM-31122 和 ALM-32120 的数据测试于 900MHz。

7. MGA-30316, ALM-31322 and ALM-32320 的数据测试于 3.5GHz。

8. ALM-80110 数据测试与 900MHz。

无线基础设施

基站射频板卡

射频板卡推荐器件

Application	Part Number	Typ. Bias V/ mA	Frequency Range/GHz	Gain/dB ¹ @2GHz	P1dB/dBm ¹ @2GHz	OIP3/dBm @2GHz	NF/dB ² @2GHz	Device Type and Package (mm)
Mixer	IAM-92516	5/26	0.4 - 3.5	6 (CL)	9	27 (IIP3)	12.5	E-pHEMT MMIC, LPCC(3x3)
Buffer-High Power	MGA-565P8 ³	5/67	0.1 - 3.5	21.8	20 (Psat)	—	—	E-pHEMT MMIC, LPCC
	ABA-54563	5/79	DC - 3.4	23	16.1	27.3	4.4	Si MMIC, SOT363
Buffer-Low Power	ABA-31563	3/14	DC - 3	21.5	2.2	13.1	3.8	Si MMIC, SOT363
	ABA-51563	5/18	DC - 3.5	21.5	1.8	11.4	3.7	Si MMIC, SOT363
	ABA-52563	5/35	DC - 3.5	21.5	9.8	19.9	3.3	Si MMIC, SOT363
	ABA-53563	5/46	DC - 3.5	21.5	12.7	22.9	3.5	Si MMIC, SOT363
	AVT-50663	5/36	DC - 6000	15.3	12.5	25	4	SOT-363 (SC70)
	AVT-51663	5/37	DC - 6000	19.6	12.9	25.1	3.2	SOT-363 (SC70)
	AVT-52663	5/45	DC - 6000	15.3	12.7	27	4	SOT-363 (SC70)
	AVT-53663	5/48	DC - 6000	19.6	15.1	26.5	3.2	SOT-363 (SC70)
	AVT-54689	5/48	0.05 - 6	17.1	17.4	29.6	4.1	SOT-89
	AVT-55689	5/75	0.05 - 6	17.2	19.5	32.5	4.3	SOT-89

Application	Part Number	Typ. Bias V/ mA	Frequency Range/GHz	Gain/dB ¹ @500MHz	P1dB/dBm ¹ @500MHz	OIP3/dBm @500MHz	NF/dB ² @500MHz	Device Type and Package (mm)
IF Amplifier	MGA-30489	5/97	0.25 - 3.0	18.8	22.7	37	3.3	SOT-89
	MGA-30689	5/104	0.04 - 2.6	14.4	22.2	44	3.0	SOT-89
	MGA-30789	5/100	2 - 6	11.7	—	41.8	3.3	SMT 4.5x4.1x1.5
	MGA-30889	5/65	0.04 - 2.6	15.5	—	38	1.9	SMT 4.5x4.1x1.5
	MGA-30989	5/51	2 - 6	12	—	36.8	2	SMT 4.5x4.1x1.5
	MGA-31189	5/111	0.05 - 2	21	24	42	3	SOT-89
	MGA-31289	5/124	1.5 - 3	18.7	24	41.8	3	SOT-89
	MGA-31389	5/73	0.05 - 2	21.3	22.2	38.6	2	SOT-89
	MGA-31489	5/69	1.5 - 3	19.5	21.9	37.3	1.9	SOT-89
	MGA-31589	5/146	0.45 - 1.5	20.4	27.2	45.3	1.9	SOT-89
	MGA-31689	5/168	1.5 - 3	18.1	27.6	44.9	1.9	SOT-89
	MGA-62563 ⁴	3/55	0.1 - 3	22	18	35	0.8	E-pHEMT MMIC, SOT363
	MGA-545P8	3.3/135	0.1 - 7	22	19	36	2	E-pHEMT MMIC, LPCC
	ADA-4789	4.1/80	DC - 2.5	17	18.8	35	4.2	Si MMIC, SOT89
	ADA-4743	(3.8)/60	DC - 2.5	16.5	17.1	34	4.2	Si MMIC, SOT343
	ADA-4643	(3.5)/35	DC - 2.5	17.3	14	29	4	Si MMIC, SOT343
	ADA-4543	(3.4)/15	DC - 2.5	15.5	2.4	15	3.7	Si MMIC, SOT343
	ABA-54563	5/81	DC - 3	23	18	32	3	Si MMIC, SOT363
	ABA-53563	5/46	DC - 3.5	21.5	15	27.5	2.9	Si MMIC, SOT363
	ABA-52563	5/35	DC - 3.5	21.8	12.5	28	2.7	Si MMIC, SOT363
Detector - Schottky Diodes	HSMS-282x	Ct max = 1pF @0V						SOT323/363/23/143
	HSMS-286x	Ct max = 0.3pF @0V						SOT323/363/23/143
Attenuator - PIN Diodes	HSMP-381x	Very low distortion, Ct typ. = 0.2pF @0V, see AN1048 & AN5262 pi-attenuator design						SOT323/23/25
	HSMP-386x	Lower current, low cost, Ct typ. = 0.2pF @0V, see AN1048 pi-attenuator design						SOT323/363/23/25
Attenuator - Module	ALM-38140	Low distortion, high dynamic range attenuator module						MCOB 3.8x3.8x1.0

提示：

1. 分立 FETs 的增益和 P1dB 是在最佳 IP3 匹配的情况下测试。

2. NFmin 适用于分立场效应管。

3. 高度的反转隔离：典型值 50dB。

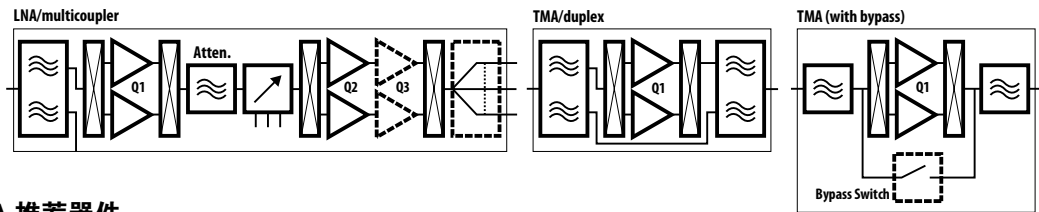
4. 电流可调：20–60mA。
5. MGA–631P8 和 MGA–632P8 都集成了偏置电路。MGA–631P8 的数据在 900MHz 测试。

6. MGA–30116, ALM–31122 和 ALM–32120 的数据测试于 900MHz。

7. MGA–30316, ALM–31322 and ALM–32320 的数据测试于 3.5GHz。

基站低噪声放大器 (LNA)

基站塔顶放大器 (TMA)



LNA 和 LMA 推荐器件

Application	Part Number	Typ. Bias V/ mA	Frequency Range/GHz	Gain/dB ¹ @ 2GHz	P1dB/dBm ¹ @ 2GHz	OIP3/dBm @ 2GHz	NF/dB ² @ 2GHz	Device Type and Package (mm)
Q1	MGA-13116	5/55	0.4 - 1.5	38	23.3	41.4	0.51	QFN 4x4x0.85
	MGA-13216	5/53	1.5 - 2.5	35.8	23.6	40.5	0.61	QFN 4x4x0.85
	MGA-13316	5/53	2.2 - 4.0	34.3	23.5	41.8	0.76	QFN 4x4x0.85
	MGA-14516	5/45	1.4 - 2.7	31.7	—	23.5	0.66	QFN 4x4x0.85
	MGA-16116 ⁷	4.8/61	0.45-1.45	18.4	21.2	21.2 (IIP3)	0.27	QFN 4x4x0.85
	MGA-16216 ⁸	4.8/52.5	1.44-2.35	18.4	19.5	19.5 (IIP3)	0.32	QFN 4x4x0.85
	MGA-16316 ⁹	4.8/53.3	1.95-4.0	18.2	18.7	15.5 (IIP3)	0.45	QFN 4x4x0.85
	MGA-631P8 ³	4/60	0.4 - 1.5	17.5	18.0	33.1	0.53	E-pHEMT MMIC, LPCC 2x2
	MGA-632P8 ³	4/60	1.4 - 3	17.6	19.2	34.8	0.62	E-pHEMT MMIC, LPCC 2x2
	MGA-633P8	5/54	0.45 - 2	18	—	37	0.37	QFN 2x2x0.75
	MGA-634P8	5/48	1.5 - 2.3	17.4	22	36	0.37	QFN 2x2x0.75
	MGA-635P8	5/56	2.3 - 4.0	18	21.9	35.9	0.56	QFN 2x2x0.75
	ALM-11036	5/92	0.776 - 0.87	15.6	4	37.6	0.78	SMT 7x10
	ALM-11136	5/92	0.87 - 0.915	15.4	4.5	38.2	0.76	SMT 7x10
	ALM-11236	5/99	1.71 - 1.85	15.9	3.5	32.3	0.67	SMT 7x10
	ALM-11336	5/100	1.85 - 1.98	15.3	3.8	35.5	0.72	SMT 7x10
	ATF-58143	3/30	0.45 - 6	16.5	19	30.5	0.5	E-pHEMT FET, SOT343
	ATF-54143	3/60	0.45 - 6	16.6	20	36.2	0.5	E-pHEMT FET, SOT343
	ATF-55143	2.7/10	0.45 - 6	17.7	14	24.2	0.6	E-pHEMT FET, SOT343
	ATF-53189	4/135	0.05 - 6	15.5	23	40	0.62	E-pHEMT FET, SOT89
	ATF-531P8	4/135	0.05 - 6	20	24.5	38	0.6	E-pHEMT FET, LPCC
Q2/Q3	MGA-30116 ⁴	5/202.8	0.75 - 1	17	—	44.1	2	QFN 3x3
	MGA-30216	5/206	1.7 - 2.7	14.2	—	45.3	2.8	QFN 3x3
	MGA-30316 ⁵	5/198	3.3 - 3.9	12.8	—	44.4	2.7	QFN 3x3
	MGA-31716	5/58	2	20.2	21.2	41	1.9	QFN 3x3
	MGA-31816	5/59	1.5-4.0	19.5	20.5	40.5	1.6	QFN 3x3
	MGA-53543	5/54	0.4 - 6	15.4	18.6	39.1	1.5	E-pHEMT MMIC, SOT343
	MGA-53589	5/52	0.05 - 3.0	15.8	18.2	37	1.7	SOT-89
	MGA-636P8	4.8/105	0.45 - 1.5	18.5	23	41.5	0.5	QFN 2x2x0.75
	MGA-637P8	4.8/70	1.5 - 2.5	17.5	22	41.5	0.6	QFN 2x2x0.75
	MGA-638P8	4.8/90	2.5 - 4	17.5	22	39.5	0.8	QFN 2x2x0.75
	ATF-50189	4.5/280	0.05 - 6	15.5	29	45	1.1	E-pHEMT FET, SOT89
	ATF-501P8	4.5/280	0.05 - 6	14.7	28	45	—	E-pHEMT FET, LPCC
	ATF-511P8	4.5/200	0.05 - 6	14.8	30	41.7	1.4	E-pHEMT FET, LPCC
	ATF-52189	4.5/200	0.05 - 6	16	27	42	1.21	E-pHEMT FET, SOT89
	ATF-521P8	4.5/200	0.05 - 6	17	26.5	42	0.96	E-pHEMT FET, LPCC
	ATF-53189	4/135	0.05 - 6	15.5	23	40	0.62	E-pHEMT FET, SOT89
	ATF-531P8	4/135	0.05 - 6	20	24.5	38	0.6	E-pHEMT FET, LPCC
Bypass Switch - PIN Diodes	HSMP-389x	General purpose switch, Ct typ. = 0.4pF @0V						SOT-323/363/23/143
	HSMP-489x	Low inductance, shunt, Ct typ. = 0.4pF @0V						SOT323/23
	HSMP-386x	Higher linearity switch, Ct typ. = 0.2pF @0V						SOT323/363/23/25
Attenuator - PIN Diodes	HSMP-381x	Very low distortion, Ct typ. = 0.2pF @0V, see AN1048 & AN5262 pi-attenuator design						SOT323/23/25
	HSMP-386x	Lower current, low cost, Ct typ. = 0.2pF @0V, see AN1048 pi-attenuator design						SOT323/363/23/25
Attenuator-Module	ALM-38140	Low distortion, high dynamic range attenuator module						MCOB 3.8x3.8x1.0

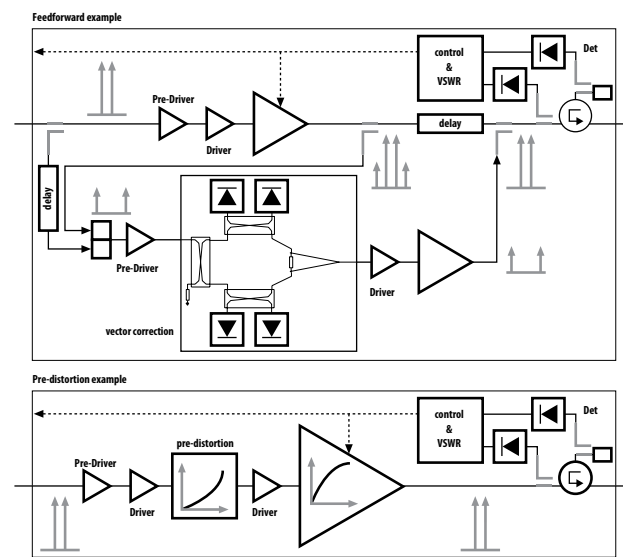
提示:

- 1. 分立 FETs 的增益和 P1dB 是在最佳 IP3 匹配的情况下测试。
- 2. NFmin 适用于分立场效应管。
- 3. MGA-631P8 和 MGA-632P8 都集成了偏置电路。MGA-631P8 的数据在 900MHz 测试。

- 4. MGA-30116 的数据测试于 900MHz。
- 5. MGA-30316 的数据测试于 3.5GHz。
- 7. MGA-16116 的数据测试于 900 MHz
- 8. MGA-16216 的数据测试于 1950 MHz

- 9. MGA-16316 的数据测试于 2.6 GHz

基站多载波功率放大器 (MCPA)



MCPA 推荐器件

Application	Part Number	Typ. Bias V/ mA	Frequency Range/GHz	Gain/dB ¹ @ 2GHz	P1dB/dBm ¹ @ 2GHz	OIP3/dBm @ 2GHz	NF/dB ² @ 2GHz	Device Type and Package (mm)
Pre-Driver	MGA-30116 ³	5/202.8	0.75 - 1	17	—	44.1	2	QFN 3x3
	MGA-30216	5/206	1.7 - 2.7	14.2	—	45.3	2.8	QFN 3x3
	MGA-30316 ⁴	5/198	3.3 - 3.9	12.8	—	44.4	2.7	QFN 3x3
	MGA-30489	5/97	0.25 - 3.0	13.3	23.3	39	3	SOT-89
	MGA-30689	5/104	0.04 - 2.6	14.6	22.5	40	3.3	SOT-89
	MGA-30789	5/100	2 - 6	11.7	—	41.8	3.3	SMT 4.5x4.1x1.5
	MGA-30889	5/65	0.04 - 2.6	15.5	—	38	1.9	SMT 4.5x4.1x1.5
	MGA-30989	5/51	2 - 6	12	—	36.8	2	SMT 4.5x4.1x1.5
	MGA-31189	5/111	0.05 - 2	21	24	42	3	SOT-89
	MGA-31289	5/124	1.5 - 3	18.7	24	41.8	3	SOT-89
	MGA-31389	5/73	0.05 - 2	21.3	22.2	38.6	2	SOT-89
	MGA-31489	5/69	1.5 - 3	19.5	21.9	37.3	1.9	SOT-89
	MGA-31589	5/146	0.45 - 1.5	20.4	27.2	45.3	1.9	SOT-89
	MGA-31689	5/168	1.5 - 3	18.1	27.6	44.9	1.9	SOT-89
	MGA-31716	5/58	2	20.2	21.2	41	1.9	QFN 3x3
	MGA-31816	5/59	1.5 - 4.0	19.5	20.5	40.5	1.6	QFN 3x3
	MGA-53543	5/54	0.4 - 6	15.4	18.6	39.1	1.5	E-pHEMT MMIC, SOT343
	MGA-53589	5/52	0.05 - 3.0	15.8	18.2	37	1.7	SOT-89
	MGA-545P8	3.3/127	0.05 - 7	18.6	21.7	34	2.7	E-pHEMT MMIC, LPCC
	ATF-52189	4.5/200	0.05 - 6	16	27	42	1.21	E-pHEMT FET, SOT89
Driver	ATF-521P8	4.5/200	0.05 - 6	17	26.5	42	0.96	E-pHEMT FET, LPCC
	ATF-53189	4/135	0.05 - 6	15.5	23	40	0.62	E-pHEMT FET, SOT89
	ATF-531P8	4/135	0.05 - 6	20	24.5	38	0.6	E-pHEMT FET, LPCC
	ADA-4789	4.1/80	DC - 2.5	16.3	16.9	29	4.5	Si MMIC, SOT89
	ATF-50189	4.5/280	0.05 - 6	15.5	29	45	1.1	E-pHEMT FET, SOT89
	ATF-501P8	4.5/280	0.05 - 6	14.7	28	45	—	E-pHEMT FET, LPCC
	ATF-511P8	4.5/200	0.05 - 6	14.8	30	41.7	1.4	E-pHEMT FET, LPCC
	ALM-31122 ³	5/394	0.7 - 1	15.6	—	47.6	2	MCOB 5.0x6.0x1.1
	ALM-31222	5/415	1.7 - 2.7	14.9	—	47.9	2.7	MCOB 5.0x6.0x1.1
	ALM-31322 ⁴	5/413	3.3 - 3.9	13.2	—	47.7	2.8	MCOB 5.0x6.0x1.1
	ALM-32120 ³	5/800	0.7 - 1.0	14	—	52	2.5	MCOB 7.0x10.0x1.1
	ALM-32220	5/800	1.7 - 2.7	14.8	—	50	3.5	MCOB 7.0x10.0x1.1
Detector - Schottky Diodes	HSMS-282x	Ct max = 1pF @0V						SOT323/363/23/143
	HSMS-286x	Ct max = 0.3pF @0V						SOT323/363/23/143
Vector Correction - PIN Diodes	HSMP-481x	Low inductance, shunt, very low distortion, Ct typ. = 0.2pF @0V						SOT323/23
	HSMP-381x	Very low distortion, Ct typ. = 0.2pF @0V						SOT323/23/25

提示:

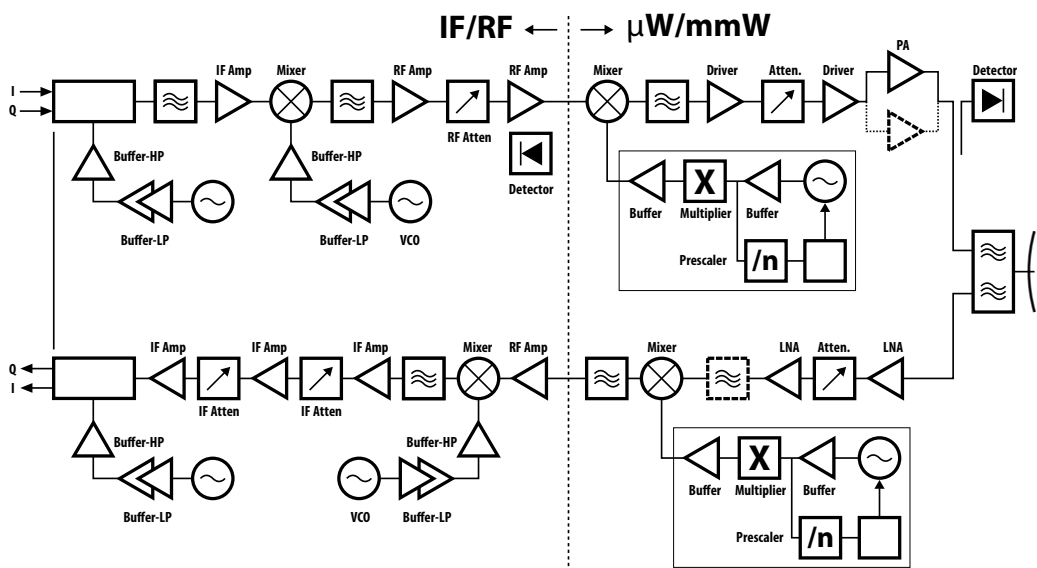
1. 分立 FETs 的增益和 P1dB 是在最佳 IP3 匹配的情况下测试

2. NFmin 适用于分立场效应管 .

3. MGA-30116, ALM-31122 和 ALM-32120 的数据测试于 900MHz.

4. MGA-30316, ALM-31322 和 ALM-32320 的数据测试于 3.5GHz.

微波中继 (点对点 / 点对多点)



微波中继集成电路推荐电路

Application	Part Number	Bias V/mA	Freq. Range GHz	Typical Performance				Package (mm)
				Gain dB	P1dB dBm	OIP3 dBm	NF dB	
Power Amplifiers	AMGP-6432	6/700	28 - 31	20	33	40 @ 30 GHz	—	SM 5x5
	AMGP-6434	6/1400	28 - 31	20	35.5	42 @ 30 GHz	—	SM 5x5
	AMMP-6408	5/650	6 - 18	18	28	38	4.5	SM 5x5
	AMMC-6408	5/650	6 - 18	19	29	38	4.3	chip
	AMMC-6425	5/900 - 0.6	18 - 28	18.5	28.5	38	—	chip
	AMMC-6431	5/0.65	25-33	19	28.5	38	—	chip
Driver/Buffer Amps ¹	AMMC-6442	5/0.7	37-40	23	30	18	—	chip
	AMMP-5618	5/107	6 - 20	13	19	30	4.4	SM 5x5
	AMMC-5618	5/107	6 - 20	14.5	19.5	26	4.4	chip
	AMMP-5620	5/95	6 - 20	17.5	15	22.5	5.1	SM 5x5
	AMMC-5620	5/95	6 - 20	19	15	23.5	4.2	chip
	AMMC-5040	4.5/300 - 0.45	20 - 45	25	19.5	30	—	chip
	AMMP-6333	5/230	18-33	22	23	30	—	SM 5x5
	AMMC-6333	5/230	18-33	22	23	30	—	chip
Low Noise Amplifiers	AMMC-6345	5/480 - 0.7	20 - 45	20	24	32	—	chip
	VMMK-1225	2/20	0.5 - 26	11	8	23	1	SM
	VMMK-1218	3/20	0.5 - 18	10.7	12	12	0.81	SM 1x0.5
	AMMP-6220	3/55	6 - 20	22	10	20	2.5	SM 5x5
	AMMC-6220	3/55	6 - 20	23	9	19	2	chip
	AMMP-6222	4/120	7 - 21	24	15.5	29	2.3	SM 5x5
	AMMC-6222	4/120	7 - 21	25	16	29	2.1	chip
	AMMP-6232	4/138	18 - 32	23	18	29	3	SM 5x5
	AMMC-6232	4/138	18 - 32	24	19	29	2.8	chip
Travelling Wave Amplifiers	AMMP-6233	3/65	18 - 32	23	8	19	2.6	SM 5x5
	AMMC-6241	3/60	26 - 43	20	10	20	2.7	chip
	AMMP-5024	7/200	(30k) - 40	15	22	30	4.4	SM 5x5
	AMMC-5024	7/200 - 3	(30k) - 40	16	22.5	30	4.6	chip
	AMMC-5025	5/100	(30k) - 80	8	15	20	—	chip
	AMMC-5026	7/150 - 1	2 - 35	10.5	24	31	3.6	chip

提示：
1. 同见于低噪声放大器

无线基础设施

微波中继 (点对点 / 点对多点)

微波中继集成电路推荐电路

Application	Part Number	Freq. Range (GHz)	Typical Performance					Package (mm)
			In/Output RL (dB)	Control Range (dB)	Min. IL (dB)	Control Voltage (V)	IIP3 (dBm)	
Variable Attenuator	AMMC-6630	5 - 45	10/10	20	3.5 @ 25GHz	0 to +1V	+23 @ 25GHz	Chip
	AMMC-6640	DC - 50	12/12	20	4 @ 50GHz	0 to +1.2V	+27 @ 10 dB/30GHz	Chip
	AMMC-6650	DC - 40	15/15	22	3.1 @ 40GHz	0 to +1.5V	+7 @ 22GHz	Chip
	AMMP-6630	5 - 30	10/10	20	3.5 @ 25GHz	0 to +1V	+23 @ 25GHz	SM 5x5
	AMMP-6640	DC - 40	10/10	20	4.4 @ 30GHz	0 to +1.2V	+27 @ 10 dB/30GHz	SM 5x5
	AMMP-6650	DC - 30	12/12	22	2.1 @ 30GHz	0 to +1.5V	+7 @ 22GHz	SM 5x5

Application	Part Number	Input Freq. (GHz)	Typical Performance					Package (mm)
			Output Freq. (GHz)	IP1dB (dBm)	Pout (dBm)	Fo (dBc)	3Fo (dBc)	
Multiplier	AMMP-6125	5 - 12	10 - 24	0	22	20	20	SM 5x5
	AMMP-6120	4 - 12	8 - 24	2	15	25	20	SM 5x5

Application	Part Number	RF Freq./IF (GHz)	Typical Performance					Package (mm)
			Im Rej (dB)	RF/IF RL. (dB)	Conversion Gain (dB)	LO/RF Isolation (dB)	IIP3 (dBm)	
Mixer/Converter	AMMP-6522	7 - 20/DC - 3.5	15	12/12	-13	—	-2 @ 16 GHz	SM 5x5
	AMMP-6530	5 - 30/DC - 5	15	5/10	-5 @ 20 GHz	25	24 @ 23 GHz	SM 5x5
	AMMP-6532	20 - 32/1 - 5	15	9/-	-13	—	-2 @ 26 GHz	SM 5x5
	AMMP-6545	18 - 40/DC - 3.5	—	—	-11 @ 36GHz	30	12	SM 5x5
	AMMP-6546	18 - 40/DC - 3.5	—	—	-11 @ 35GHz	30	16 @ 30 GHz	SM 5x5
	AMMC-6530	5 - 30/DC - 5	15	5/10	-5 @ 20 GHz	25	24 @ 23 GHz	Chip
	AMMC-6545	18 - 45/DC - 3.5	—	—	-9 @ 30GHz	33	18	Chip

无线基础设施

微波中继（点对点 / 点对多点）

微波 / 毫米波二极管推荐器件

Application	Part Number	Description	Package
Detector - Schottky diodes	HSCH-5310/5330	Si single, Ct=0.1pF, med. barrier/low barrier	Beamlead
	HSCH-5312/5332	Si single Ct=0.15pF, med. barrier/low barrier	Beamlead
Mixers - Schottky diodes	HSCH-5310/5330	Si single, Ct=0.1pF, med. barrier/low barrier	Beamlead
	HSCH-5312/5332	Si single Ct=0.15pF, med. barrier/low barrier	Beamlead
Multiplier - Schottky diodes	HSCH-5310/5330	Si single, Ct=0.1pF, med. barrier/low barrier	Beamlead
	HSCH-5312/5332	Si single Ct=0.15pF, med. barrier/low barrier	Beamlead
Attenuator - PIN diodes	HPND-4005	Si single, Ct=17ff, t=100ns	Beamlead
Switch - PIN diodes	HPND-4005	Si single, Ct=17ff, t=100ns	Beamlead
	HPND-4028	Si single. Ct=45ff, t=36ns	Beamlead

微波中继 – 中频推荐器件

Application	Part Number	Typ. Bias V/mA	Frequency Range/GHz	Gain (dB) @ 2GHz	P1dB (dBm) @ 2GHz	OIP3 (dBm) @ 2GHz	NF (dB) @ 2GHz	Device Type and Package (mm)
RF Amplifier	MGA-30489	5/97	0.25 - 3.0	13.3	23.3	39	3	SOT-89
	MGA-30689	5/104	0.04 - 2.6	14.6	22.5	40	3.3	SOT-89
	MGA-30789	5/100	2 - 6	11.7	—	41.8	3.3	SMT 4.5x4.1x1.5
	MGA-30889	5/65	0.04 - 2.6	15.5	—	38	1.9	SMT 4.5x4.1x1.5
	MGA-30989	5/51	2 - 6	12	—	36.8	2	SMT 4.5x4.1x1.5
	MGA-31189	5/111	0.05 - 2	21	24	42	3	SOT-89
	MGA-31289	5/124	1.5 - 3	18.7	24	41.8	3	SOT-89
	MGA-31389	5/73	0.05 - 2	21.3	22.2	38.6	2	SOT-89
	MGA-31489	5/69	1.5 - 3	19.5	21.9	37.3	1.9	SOT-89
	MGA-31589	5/146	0.45 - 1.5	20.4	27.2	45.3	1.9	SOT-89
	MGA-31689	5/168	1.5 - 3	18.1	27.6	44.9	1.9	SOT-89
	MGA-53543	5/54	0.4 - 6	15.4	18.6	39.1	1.5	E-pHEMT MMIC, SOT343
	MGA-53589	5/52	0.05 - 3.0	15.8	18.2	37	1.7	SOT-89
	MGA-545P8	3.3/127	0.05 - 7	18.6	21.7	34	2.7	E-pHEMT MMIC, LPCC
	MGA-61563 ¹	3/41.6	0.1 - 6	15.5	15.1	31.7	1	E-pHEMT MMIC, SOT363
	ABA-53563	5/35	DC - 3.5	21.5	12.7	22.9	3.5	Si MMIC, SOT363
	ABA-54563	5/81	DC - 3	22.5	16	26	4.2	Si MMIC, SOT363
Mixer	ADA-4789	4.1/80	DC - 2.5	16.3	16.9	29	4.5	Si MMIC, SOT89
Buffer-High Power	IAM-92516	5/26	0.4 - 3.5	6 (CL)	9	27 (IIP3)	12.5	E-pHEMT MMIC, LPCC(3x3)
	MGA-565P8 ²	5/67	0.1 - 3.5	21.8	20 (Psat)	—	—	E-pHEMT MMIC, LPCC
Buffer-Low Power	ABA-54563	5/81	DC - 3	22.5	16	27.3	4.4	Si MMIC, SOT363
	ABA-31563	3/14	DC - 3	21.5	2.2	13.1	3.8	Si MMIC, SOT363
	ABA-51563	5/18	DC - 3.5	21.5	1.8	11.4	3.7	Si MMIC, SOT363
	ABA-52563	5/35	DC - 3.5	21.5	9.8	19.9	3.3	Si MMIC, SOT363
	ABA-53563	5/35	DC - 3.5	21.5	12.7	22.9	3.5	Si MMIC, SOT363
	AVT-50663	5/36	DC - 6000	15.3	12.5	25	4	SOT-363 (SC70)
	AVT-51663	5/37	DC - 6000	19.6	12.9	25.1	3.2	SOT-363 (SC70)
	AVT-52663	5/45	DC - 6000	15.3	12.7	27	4	SOT-363 (SC70)
	AVT-53663	5/48	DC - 6000	19.6	15.1	26.5	3.2	SOT-363 (SC70)
	AVT-54689	5/48	0.05 - 6	17.1	17.4	29.6	4.1	SOT-89
	AVT-55689	5/75	0.05 - 6	17.2	19.5	32.5	4.3	SOT-89

提示：
1. 电流可调：20–60mA。
2. 高度反向隔离：典型值 50dB。

无线基础设施

微波中继 (点对点 / 点对多点)

微波中继 – 中频推荐器件

Application	Part Number	Features	Device Type and Package
Detector - Schottky Diodes	HSMS-282x	Ct max = 1pF @0V	SOT323/363/23/143
	HSMS-286x	Ct max = 0.3pF @0V	SOT323/363/23/143
RF Attenuator - PIN Diodes	HSMP-381x	Very low distortion, Ct typ. = 0.2pF @0V, see AN1048 & AN5262 pi-attenuator design	SOT323/23/25/SOD-323
	HSMP-386x	Lower current, low cost, Ct typ. = 0.2pF @0V, see AN1048 pi-attenuator design	SOT323/363/23/25/SOD-323
Attenuator - Module	ALM-38140	Low distortion, high dynamic range attenuator module	MCOB 3.8x3.8x1.0mm

Application	Part Number	Typ. Bias V/ma	Frequency Range/GHz	Gain (dB) @ 500MHz	P1dB (dBm) @ 500MHz	OIP3 (dBm) @ 500MHz	NF (dB) @ 500MHz	Device Type and Package
IF Amplifier	MGA-62563 ¹	3/55	0.1 - 3	22	18	35	0.8	E-pHEMT MMIC, SOT363
	MGA-545P8	3.3/135	0.1 - 7	22	19	36	2	E-pHEMT MMIC, LPCC
	MGA-30489	5/97	0.25 - 3.0	18.8	22.7	37	3.3	SOT-89
	MGA-30689	5/104	0.04 - 2.6	14.4	22.2	44	3.0	SOT-89
	MGA-30889	5/65	0.04 - 2.6	15.5	–	38	1.9	SMT 4.5x4.1x1.5
	MGA-31189	5/111	0.05 - 2	21	24	42	3	SOT-89
	MGA-31389	5/73	0.05 - 2	21.3	22.2	38.6	2	SOT-89
	MGA-31716	5/58	2	20.2	21.2	41	1.9	QFN 3x3
	ADA-4789	4.1/80	DC - 2.5	17	18.8	35	4.2	Si MMIC, SOT89
	ADA-4743	(3.8)/60	DC - 2.5	16.5	17.1	34	4.2	Si MMIC, SOT343
	ADA-4643	(3.5)/35	DC - 2.5	17.3	14	29	4	Si MMIC, SOT343
	ADA-4543	(3.4)/15	DC - 2.5	15.5	2.4	15	3.7	Si MMIC, SOT343
	ABA-54563	5/81	DC - 3	23	18	32	3	Si MMIC, SOT363
	ABA-53563	5/46	DC - 3.5	21.5	15	27.5	2.9	Si MMIC, SOT363
	ABA-52563	5/35	DC - 3.5	21.8	12.5	28	2.7	Si MMIC, SOT363
	AVT-50663	5/36	DC - 6000	15.3	12.5	25	4	SOT-363 (SC70)
	AVT-51663	5/37	DC - 6000	19.6	12.9	25.1	3.2	SOT-363 (SC70)
	AVT-52663	5/45	DC - 6000	15.3	12.7	27	4	SOT-363 (SC70)
	AVT-53663	5/48	DC - 6000	19.6	15.1	26.5	3.2	SOT-363 (SC70)
	AVT-54689	5/48	0.05 - 6	17.1	17.4	29.6	4.1	SOT-89
	AVT-55689	5/75	0.05 - 6	17.2	19.5	32.5	4.3	SOT-89

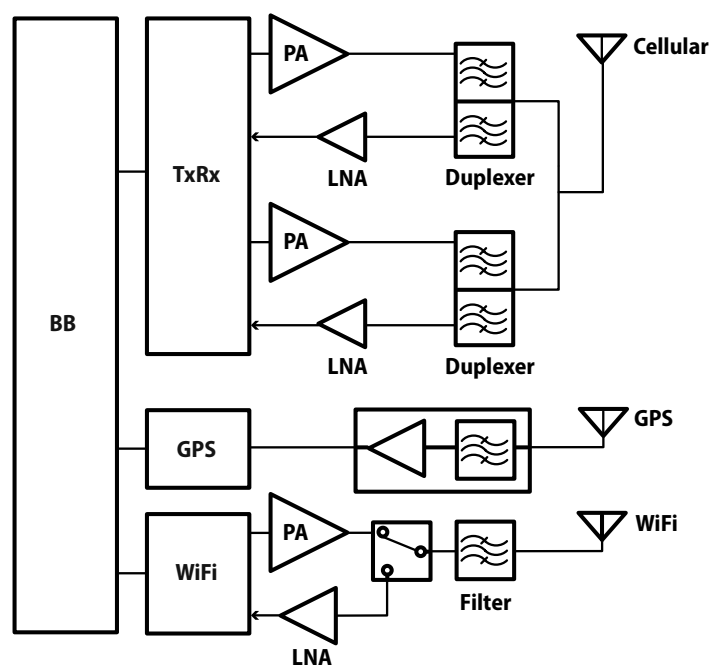
Application	Part Number	Features	Package
Attenuator - PIN Diodes	HSMP-381x	Very low distortion, Ct typ. = 0.2pF @0V, see AN1048 & AN5262 pi-attenuator design	SOT323/23/25
	HSMP-386x	Lower current, low cost, Ct typ. = 0.2pF @0V, see AN1048 pi-attenuator design	SOT323/363/23/25
Attenuator - Module	ALM-38140	Low distortion, high dynamic range attenuator module	MCOB 3.8x3.8x1.0mm

提示:

1. 电流可调: 20–60mA.

无线基础设施

小蜂窝基站前端



小蜂窝基站前端推荐器件

Application	Part Number	Freq. Range MHz	Typical Performance					Voltage (V)	Current (mA)	Operating Range
			Gain dB	P1dB dBm	I/O RL	OIP3 dBm	NF dB			
Low Noise Amplifiers	MGA-62563	500	22.0	18.0	>10.0	35.0	0.8	3.00	60	50-3000
		1000	20.0	17.6	>10.0	33.5	0.9	3.00	60	50-3000
		2000	15.5	17.7	>10.0	33.0	1.2	3.00	60	50-3000
	MGA-683P8	900	17.6	21.9	>10.0	34.7	0.6	5.00	45	400-1500
	MGA-684P8	1900	17.1	21.3	>10.0	31.0	0.78	5.00	34	1500-4000

Application	Part Number	Freq. Range GHz	Test Freq. (GHz)	Vdd (V)	Idq (mA)	Gain (dB)	P1dB (dB)	Pout @ 2.5% EVM	Band	Package (mm)
LTE/UMTS/CDMA Power Amplifiers	MGA-43228	2.3 - 2.5	2.4	5	1023	38.5	36	29.1	40, WLAN 2.4G	QFN 5x5
	MGA-43328	2.5 - 2.7	2.6	5	1017	37.4	36	29.3	7, 38, 41	QFN 5x5
	MGA-43428	851-894 MHz	0.88	5	800	>30	36	27dBm@50dBc ACLR	5, 26	MCOB 5x5
	MGA-43528	1.93-1.995	1.96	5	1000	>30	35	27.3dBm @48dBc ACLR	2, 25, 36	MCOB 5x5
	MGA-43628	2.0 - 2.2	2.14	5	1000	>30	35	27.5dBm @50dBc ACLR	1, 4	MCOB 5x5
	MGA-43728	2.62-2.69	2.65	5	755	38.3	36	27.3dBm @48dBc ACLR	7	MCOB 5x5
	MGA-43828	0.925-0.960	0.94	5	730	32.8	36	27.5dBm @50dBc ACLR	8	MCOB 5x5
	MGA-43003	1.805-1.88	1.842	5	360	41.7	36	27dBm @48dBc ACLR	3, 9, 39	MCOB 5x5
	MGA-43013	728-756 MHz	0.746	5	380	34	36	27 dBm @48dBc ACLR	12, 13, 17	MCOB 5x5
	MGA-43040	2.3-2.4	2.35	5	380	42	35	27 dBm @48dBc ACLR	30, 40	MCOB 5x5
Carrier Grade WiFi	MGA-43024	2401-2473 MHz	2.442	5	450	40.8	34	26.8	2.4GHz	MCOB 5x5

无线基础设施

小蜂窝基站前端

小蜂窝基站前端推荐器件

Application	Part Number	Typ. Bias V/ mA	NF/dB	Gain/dB	IIP3/dBm	Device Type and Package (mm)
GPS Low Noise Amplifiers	ALM-2506	2.85/8	0.8	14.3	4.7	Amp, MCOB 2x2x1.1
	MGA-231T6	2.85/6	0.9	18.5	2.0	Amp, UTSLP 2x1.3x0.4
	MGA-24106	2.7/3.3	0.97	17.9	-2.0	Amp, μ DFN 1.5x1.3x0.5
	MGA-310G	2.7/8	0.82	15.2	1.8	GNSS Amp, UQFN 1.1x1.1x0.5
	MGA-61563	3.0/9	1.18	16	-3	Amp, SOT-363
	MGA-635T6	2.85/4.9	0.86	14.6	3.5	Amp, UTSLP 2x1.3x0.4
	*ATF-55143	2.0/10	0.6	17.4	-0.6	E-pHEMT FET, SOT343
	AGPS-L001	2.7/5	0.75	17	2.4	GNSS Amp, MCOB 2x2.5x1

提示：* 参考应用手册 1376.

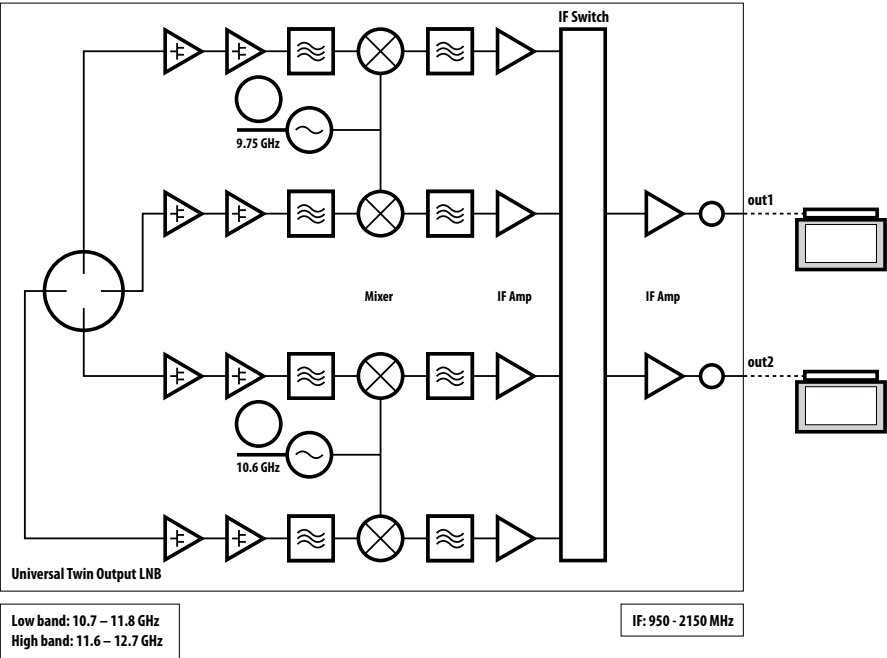
Application	Part Number	Typ. Bias V/ mA	NF/dB	Gain/dB	IIP3/dBm	Cell-Band Rejection/dBc	PCS-Band Rejection/dBc	Device Type and Package (mm)
GPS/GNSS Low Noise Amplifiers/ Filter Modules	ALM-1612	2.7/6	0.95	18.2	2	69	67	LNA/F, MCOB 3.3x2.1x1
	ALM-2412	2.85/9	0.85	13.5	6.1	63	65	LNA/F, MCOB 3.3x2.1x1.1
	ALM-1712	2.7/8	1.65	12.8	3	104	92.6	F/LNA/F, MCOB 4.5x2.2x1.0
	ALM-1812	2.8/6	1.9	18.5	2	95	90	F/LNA/F, MCOB 4.5x2.2x1.0
	ALM-2712	2.7/7.5	12.6	14.2	2	—	—	F/LNA/F, MCOB 3x2.5x1
	ALM-GN001	2.7/5	1.6	16.5	1	53	45	F/LNA, DFN 2.3x1.7x0.85
	ALM-3012	2.7/7.5	0.85	17	0.5	50	50	LNA/F, MCOB 2x2.5x1

提示：F=FBAR 滤波器

FBAR 滤波器

Application	Part Number	Band	Pass Band (MHz)	Typical Insertion Loss (dB)
Small Cell and Carrier Grade WiFi	ACFF-1024	2.4GHz ISM	2401-2482	1.5 dB
	ACMD-7614	1	1920-1980, 2110-2170	1.4, 1.6
	ACMD-6x02, 74xx	2	1850-1910, 1930-1990	1.4, 1.4
	ACMD-6x03	3	1710-1785, 1805-1880	1.5, 1.6
	ACMD-7609	4	1710-1755, 2110-2155	1.3, 1.3
	ACMD-6xx7	7	2500-2570, 2620-2690	1.8, 1.6
	ACMD-7610	8	880-915, 925-960	2.2, 2.2
	ACMD-6x25	25	1850-48-1909.52, 1930.48-1989.52	1.4, 1.5
	ACPF-8x40	40	2300-2400	2
	ACPF-7x41	41	2500-2700	2.4

DBS 卫星电视系统

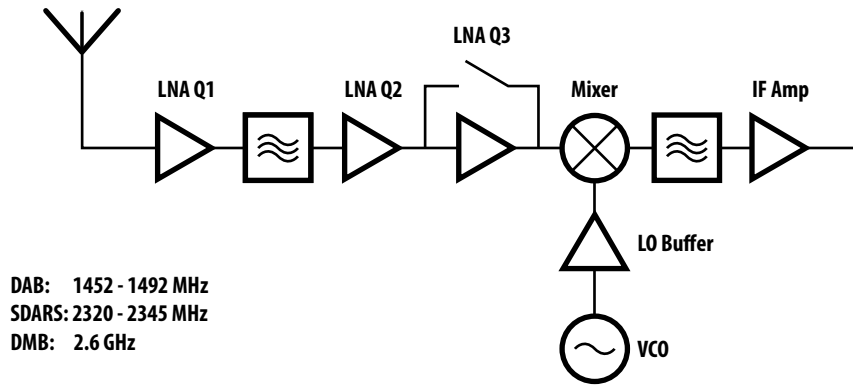


DBS 卫星电视系统推荐器件

Application	Part number	Typ. Bias V/ mA	Frequency Range/GHz	Gain/dB @ 2GHz	P1dB/dBm @ 2GHz	OIP3/dBm @ 2GHz	NF/dB @ 2GHz	Device Type and Package
IF Amplifier	ABA-31563	3/14	DC - 3	21.5	2.2	13.1	3.8	Si MMIC, SOT363
	ABA-51563	5/18	DC - 3.5	21.5	1.8	11.4	3.7	Si MMIC, SOT363
	ABA-52563	5/35	DC - 3.5	21.5	9.8	19.9	3.3	Si MMIC, SOT363
	ABA-53563	5/46	DC - 3.5	21.5	12.7	22.9	3.5	Si MMIC, SOT363
	ABA-54563	5/79	DC - 3.4	23	16.1	27.8	4.4	Si MMIC, SOT363
	AVT-50663	5/36	DC - 6000	15.3	12.5	25	4	SOT-363 (SC70)
	AVT-51663	5/37	DC - 6000	19.6	12.9	25.1	3.2	SOT-363 (SC70)
	AVT-52663	5/45	DC - 6000	15.3	12.7	27	4	SOT-363 (SC70)
	AVT-53663	5/48	DC - 6000	19.6	15.1	26.5	3.2	SOT-363 (SC70)
	AVT-54689	5/48	0.05 - 6	17.1	17.4	29.6	4.1	SOT-89
	AVT-55689	5/75	0.05 - 6	17.2	19.5	32.5	4.3	SOT-89
	MGA-61563	3/41	0.1 - 6	15.5	15.1	31.7	1.0	E-pHEMT MMIC, SOT363
IF Switch	HSMP-386x	Higher linearity switch, Ct typ = 0.2pF @0V						SOT323/363/23/25
	HSMP-389x	General purpose switch, Ct typ. = 0.4pF @0V						SOT323/363/23/143
	HMPS-389x	General purpose switch, Ct typ. = 0.4pF @0V						Minipak
Mixer - Schottky Diodes	HSMS-8202	Ct max = 0.26pF @0V						SOT23
		RD max = 14W @ IF=5Ma						

无线基础设施

移动 DAB/SDARS/DMB-S 数字接收机



移动 DAB/SDARS/DMB-S 数字接收机推荐器件

Application	Part number	Typ. Bias V/ mA	Gain/dB ¹ DAB SDARS DMB-S	OIP3/dBm DAB SDARS DMB-S	NF/dB ² DAB SDARS DMB-S	Device Type and Package (mm)
LNA Q1/Q2	ATF-55143	2.7/10	20.0 17.0 16.0	23.0 24.0 24.0	0.3 0.45 0.5	E-pHEMT FET, SOT343
	ATF-551M4	2.7/10	20.0 16.5 16.0	23.0 24.2 24.2	0.3 0.45 0.5	E-pHEMT FET, MiniPak
	MGA-635T6	2.85/4.9	14.6 12.0 -	3.5 4.5 -	0.86 0.96 -	E-pHEMT, UTSLP 2x1.3x0.4
LNA Q3	MGA-645T6	3/7	- 15.0 14.2	- 7 7.8	- 1.1 1.15	E-pHEMT, UTSLP 2x1.3x0.4
	MGA-71543 ³	3/10 ⁴	16.5 15.2 14.6	19.5 18.2 17.6	0.7 0.8 0.85	GaAs MMIC, SOT343
	MGA-72543 ³	3/20 ⁴	14.3 13.2 12.8	24.8 23.7 23.3	1.4 1.45 1.45	GaAs MMIC, SOT343
	MGA-725M4 ³	3/20 ⁴	16.6 15.3 14.6	26.5 25.2 24.5	1.2 1.3 1.3	GaAs MMIC, MiniPak

提示:

1. 分立 FETs 的增益和 P1dB 是在最佳 IP3 匹配的情况下测试
2. NFmin 适用于 LNA 器件。

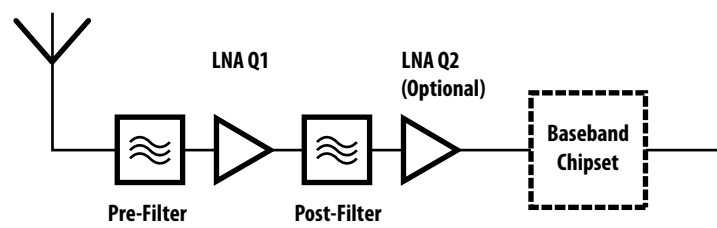
3. 包含 LNA 旁路开关。
4. 调节电流实现最佳线性

Application	Part number	Typ. Bias V/ mA	Frequency Range/GHz	Gain/dB @ 2GHz	P1dB/dBm @ 2GHz	OIP3/dBm @ 2GHz	NF/dB @ 2GHz	Device Type and Package
LO Buffer	ABA-31563	3/14.5	DC - 3	21	2	13	3.8	Si MMIC, SOT363

DMB-T/ISDB-T 接收机推荐器件

Application	Part number	Typ. Bias V/mA	Gain/dB @ 500MHz	OIP3/dBm @ 500MHz	NF/dB @ 500MHz	Device Type and Package (mm)
LNA Q1/Q2	MGA-685T6	3.0/10	18.9	18.7	0.93	E-pHEMT, UTSLP 2x1.3x0.4
	MGA-68563	3.0/10	19.7	20.0	1.0	E-pHEMT MMIC, SOT363
LNA Q3	MGA-785T6	3.0/10	15.7	16.8	1.5	E-pHEMT, UTSLP 2x1.3x0.4
	MGA-725M4	3.0/9	14	16.5	1.7	GaAs MMIC, MiniPak

GPS/GLONASS 接收机



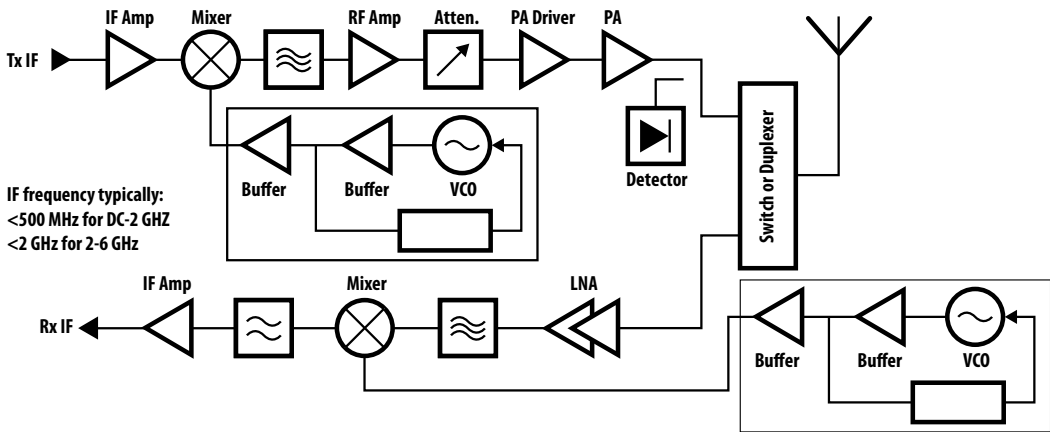
移动 GPS 接收机推荐器件

Application	Part Number	Typ. Bias V/ mA	NF/dB	Gain/dB	IIP3/dBm	Device Type and Package (mm)
LNA Q1/Q2	ALM-2506	2.85/8	0.8	14.3	4.7	E-pHEMTF, MCOB 2x2x1.1
	MGA-231T6	2.85/6	0.9	18.5	2.0	E-pHEMT, UTSLP 2x1.3x0.4
	ALM-GA001	2.7/3.3	1.1	17	-3.0	UTSLP 1.5x1.2x0.5
	MGA-310G	2.7/8	0.82	15.2	1.8	E-pHEMT MMIC, UQFN 1.1x1.1x0.5
	MGA-61563	3.0/9	1.18	16	-3	E-pHEMT MMIC, SOT-363
	MGA-635T6	2.85/4.9	0.86	14.6	3.5	E-pHEMT, UTSLP 2x1.3x0.4
	MGA-665P8	3.0/21	1.22	20.8	-0.5	E-pHEMT MMIC, LPCC 2x2
	*ATF-55143	2.0/10	0.6	17.4	-0.6	E-pHEMT FET, SOT343
	AGPS-L001	2.7/5	0.75	17	2.4	MCOB 2x2.5x1
	ALM-GA002	2.85/8	0.8	14.3	4.7	MCOB 2x2x1.1

提示：
* 参考应用手册 1376.

Application	Part Number	Typ. Bias V/ mA	NF/dB	Gain/dB	IIP3/dBm	Cell-Band Rejection/dBc	PCS-Band Rejection/dBc	Device Type and Package (mm)
LNA Q1 with Inte- grated Post Filter	ALM-1412	2.85/8	0.82	13.5	7	54	63	MCOB 3.3x2.1x1.1
	ALM-2412	2.85/9	0.85	13.5	6.1	63	65	MCOB 3.3x2.1x1.1
	ALM-GN002	2.7/7.5	0.85	17	0.5	>50	>50	MCOB 2.0x2.5x1.0
LNA Q1 with Integrated Pre and Post Filters	ALM-1712	2.7/8	1.65	12.8	3	104	92.6	E-pHEMT & FBAR, MCOB 4.5x2.2x1.0
	ALM-GP002	2.7/6	1.9	17	0	>85	>85	MCOB 4.5x2.2x1.1
	ALM-GP001	2.7/8	1.45	13	7	>85	>85	MCOB 3.0x2.0x1.1
LNA Q1 with Inte- grated Pre Filter	ALM-GN001	2.7/6	1.54	16	2.5	56	51	MCOB 2.3x1.7x0.85
	ALM-GP003	2.7/6	1.9	18	0	>50	>50	MCOB 2.9x2.0x1.1

2-6 GHz 系统 (包括 802.11 a/b/g and 802.16)



2-6 GHz 系统推荐器件

Application	Part Number	Typical Performance					Package (mm)
		Test Bias V/mA	Test Freq. GHz	Gain ¹ dB	Linear Pout dBm	EVM %	
PA	MGA-22003	—	2.5	35	—	—	Small Size 3x3x1
	MGA-23003	—	3.5	35	—	—	Small Size 3x3x1
	MGA-25203	—	5.4	30	—	—	Small Size 3x3x1
	MGA-412P8	3.3/95	2.452	25.5	19	3.0	E-pHEMT MMIC, LPCC
	MGA-425P8²	3.3/58	5.25	16.0	12	3.0	E-pHEMT MMIC, LPCC
	MGA-43228	5 /500	2.4	38.5	29.2	2.5	QFN 5x5x0.85
	MGA-43328	5 /470	2.6	37.3	29.3	2.5	QFN 5x5x0.85
	MGA-545P8	3.3/127	5.825	11.5	16	5.6	E-pHEMT MMIC, LPCC
	ALM-31222	5/415	2	14.9	—	—	MCOB 5.0x6.0x1.1
	ALM-31322	5/413	3.5	13.2	—	—	MCOB 5.0x6.0x1.1
	ALM-32220	5/800	2	14.8	—	—	MCOB 7.0x10.0x1.1
	ALM-32320	5/800	3.5	12	—	—	MCOB 7.0x10.0x1.1

Application	Part Number	Typical Performance						Package (mm)
		Test Bias V/mA	Test Freq. GHz	Gain ¹ dB	P1dB ¹ dBm	OIP3 dBm	NF dB	
PA Driver	MGA-30216	5/206	2	14.2	—	45.3	2.8	QFN 3x3
	MGA-30316	5/198	3.5	12.8	—	44.4	2.7	QFN 3x3
	MGA-53543	5/54	1.9	15.4	18.6	39.1	1.5	E-pHEMT MMIC, SOT343
	ATF-501P8	4.5/280	2	15	29	45.5	1	E-pHEMT FET, LPCC
	ATF-511P8	4.5/200	2	14.8	30	41.7	1.4	E-pHEMT FET, LPCC
	ATF-521P8	4.5/200	2	17	26.5	42	1.5	E-pHEMT FET, LPCC
	ATF-531P8	4/135	2	20	24.5	38	0.6	E-pHEMT FET, LPCC
	ATF-541M4	3/60	2	17.5	21.4	35.8	0.5	E-pHEMT FET, MiniPak
	ATF-54143	3/60	2	16.6	20.4	36.2	0.5	E-pHEMT FET, SOT343
WiFi	AFEM-S105		5.1 - 5.9	EVM <-32.5dB at 15dBm, <-35dB at 12dBm				Small Size 3.2x3.2x0.6
	AFEM-S106		5.1 - 5.9	EVM <-32.5dB at 15dBm, <-35dB at 12dBm				Small Size 3.2x3.2x0.6

提示：

1. 分立 FETs 的增益和 P1dB 是在最佳 IP3 匹配的情况下测试。
2. 电流可调：10 – 80mA。

无线基础设施

2–6 GHz 系统 (包括 802.11 a/b/g and 802.16)

2–6 GHz 系统推荐器件

Application	Part Number	Typical Performance						Package
		Test Bias V/ mA	Test Freq. GHz	Gain1 dB	P1dB ¹ dBm	OIP3 dBm	NF dB	
RF Amplifier	MGA-61563 ³	3/41	2	15.5	15.1	31.7	1	E-pHEMT MMIC, SOT363
Buffer Amplifier	ABA-31563	3/14	2	21.5	2.2	13.1	3.8	Si MMIC, SOT363
	ABA-51563	5/18	2	21.5	1.8	11.4	3.7	Si MMIC, SOT363
	ABA-52563	5/35	2	21.5	9.8	19.9	3.3	Si MMIC, SOT363
	ABA-53563	5/46	2	21.5	12.7	22.9	3.5	Si MMIC, SOT363
	ABA-54563	5/79	2	23	16.1	27.8	4.4	Si MMIC, SOT363
	MGA-565P8 ⁴	5/67	2	21.8	20 (Psat)			E-pHEMT MMIC, LPCC
	MGA-61563 ³	3/41	2	15.5	15.1	31.7	1	E-pHEMT MMIC, SOT363

- 提示：
1. 分立 FETs 的增益和 P1dB 是在最佳 IP3 匹配的情况下测试。

2. 电流可调：10 – 80mA.

3. 电流可调 10 – 60mA.

4. 高反向隔离度：典型值 50dB。

Application	Part Number	Test Bias	Test Freq.	Gain ¹	P1dB ¹	OIP3	NF	Package (mm)
Low Noise Amplifiers	MGA-14516	5.0/45	1.95	31.7	23.5	38	0.68	QFN 4x4x0.85
	MGA-61563 ²	3/41	2	15.5	15.1	31.7	1	E-pHEMT MMIC, SOT363
	MGA-632P8	4/60	1.95	17.6	18.3	35.4	0.6	LPCC 2x2
	MGA-645T6	3/7	2.4	15	9.0	22	1.1	E-pHEMT, UTSLP 2x1.3x0.4
	MGA-655T6	3/10	3.5	14.7	12.0	20.2	1.17	E-pHEMT, UTSLP 2x1.3x0.4
	MGA-665P8	3/20.5	5.25	16	11.4	18.2	1.45	E-pHEMT MMIC, LPCC
	MGA-675T6	3.0/10	5.5	17.8	(-10) IP1dB	(-3) IIP3	1.75	E-pHEMT, UTSLP 2x1.3x0.4
	MGA-64606	3/7	2.4	15.3	-3.0 (IP1dB)	20.3	0.95	UTSLP 2.0x1.3
	MGA-65606	3/7	3.5	15.3	-2.4 (IP1dB)	21	1.05	UTSLP 2.0x1.3
	MGA-71543 ³	2.4/10	2.01	15.9	7.4	18.9	1.1	pHEMT MMIC, SOT343
	MGA-85563	3/15	2	19	0.9	11.5	1.85	pHEMT MMIC, SOT363
	MGA-87563	3/4.5	2	14	-2	8	1.8	pHEMT MMIC, SOT363
	ATF-36163	1.5	12	10	5		1.2	pHEMT FET, SOT363
	ATF-551M4	2.7/10	2	17.5	14.6	24.1	0.5	E-pHEMT FET, MiniPak
	ATF-55143	2.7/10	2	17.7	14.4	24.2	0.6	E-pHEMT FET, SOT343
	ALM-2812	3.3/15	2.45	16.7	(-5.8) IP1dB	6.1 IIP3	0.8	MCOB 3x3x1.1
		3.3/23.4	5.5	23.2	(-12.8) IP1dB	(-2.1) IIP3	1.4	MCOB 3x3x1.1
	VMMK-1218	3/20	10	10.7	12	12	0.7	SM 1x0.5
	VMMK-1225	2/20	12	11	8	23	0.9	SM 1x0.5

- 提示：
1. 分立 FETs 的增益和 P1dB 是在最佳 IP3 匹配的情况下测试。

2. 电流可调 10 – 60mA。

3. 源极接地配置。

无线基础设施

2–6 GHz 系统 (包括 802.11 a/b/g and 802.16)

2–6 GHz 系统推荐器件

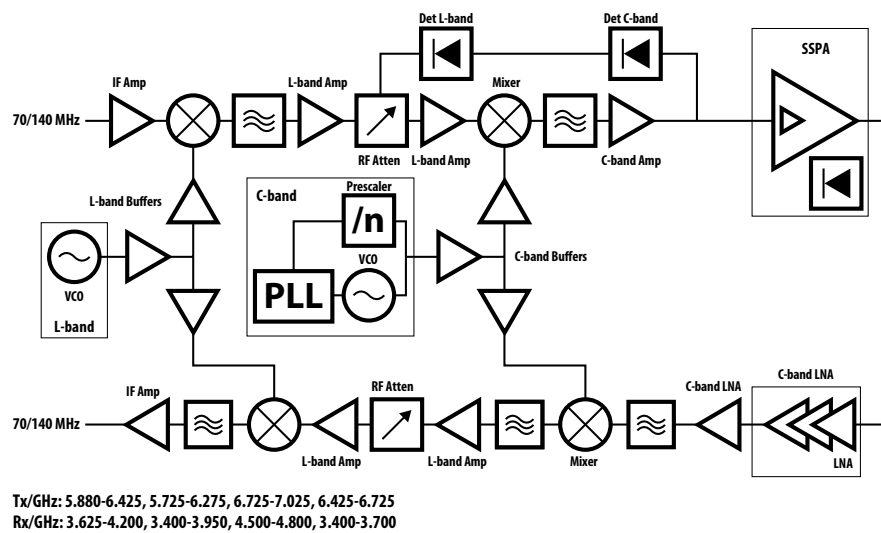
Application	Part Number	Ct max @0V	Package
Detector	HMP5-282x	1pF	Schottky, MiniPak
	HSMS-282x	1pF	Schottky, SOT323/363/23/143
	HSMS-286x	0.3pF	Schottky, SOT323/363/23/143
Switch	HMPP-389x	0.35pF	PIN, MiniPak
	HSMP-389x/489x	0.4pF	SOT323/363/23/143
	HMPP-386x	0.2pF	PIN, MiniPak
	HSMP-386x	0.2pF	SOT323/363/23/25

Application	Part Number	Typ. Bias V/ mA	Frequency Range/GHz	Gain/dB @ 2GHz	P1dB/dBm @ 2GHz	OIP3/dBm @ 2GHz	NF/dB @ 2GHz	Device Type and Package
IF Amplifier	MGA-62563 ¹	3/55	0.1 - 3	22	18	35	0.8	E-pHEMT MMIC, SOT363
	MGA-545P8	3.3/135	0.1 - 7	22	19	36	2	E-pHEMT MMIC, LPCC
	ADA-4789	4.1/80	DC - 2.5	16.3	16.9	29	4.5	Si MMIC, SOT89
	ADA-4743	(3.8)/60	DC - 2.5	16.5	17.1	34	4.2	Si MMIC, SOT343
	ADA-4643	(3.5)/35	DC - 2.5	17.3	14	29	4	Si MMIC, SOT343
	ADA-4543	(3.4)/15	DC - 2.5	15.5	2.4	15	3.7	Si MMIC, SOT343
	ABA-54563	5/81	DC - 3	23	18	32	3	Si MMIC, SOT363
	ABA-53563	5/46	DC - 3.5	21.5	15	27.5	2.9	Si MMIC, SOT363
	ABA-52563	5/35	DC - 3.5	21.8	12.5	28	2.7	Si MMIC, SOT363
	AVT-50663	5/36	DC - 6000	15.3	12.5	25	4	SOT-363 (SC70)
	AVT-51663	5/37	DC - 6000	19.6	12.9	25.1	3.2	SOT-363 (SC70)
	AVT-52663	5/45	DC - 6000	15.3	12.7	27	4	SOT-363 (SC70)
	AVT-53663	5/48	DC - 6000	19.6	15.1	26.5	3.2	SOT-363 (SC70)

提示:

1. 电流可调: 20 – 60mA。

C- 频段



VSAT 推荐器件

Application	Part number	Typ. Bias V/ mA	Frequency Range/GHz	Gain/dB @ 500MHz	P1dB/dBm @ 500MHz	OIP3/dBm @ 500MHz	NF/dB @ 500MHz	Device Type and Package
IF Amplifier	MGA-62563 ¹	3/55	0.1 - 3	22	18	34.8	0.8	E-pHEMT MMIC, SOT363
	MGA-545P8	3.3/135	0.1 - 7	22	19	36	2	E-pHEMT MMIC, LPCC
	ADA-4789	4.1/80	DC - 2.5	17	18.8	35	4.2	Si MMIC, SOT89
	ADA-4743	(3.8)/60	DC - 2.5	16.6	17.1	34	4.2	Si MMIC, SOT343
	ABA-53563	5/46	DC - 3.5	21.5	15	27.5	2.9	Si MMIC, SOT363
	ABA-52563	5/35	DC - 3.5	21.8	12.5	28	2.7	Si MMIC, SOT363

Application	Part number	Typ. Bias V/ mA	Frequency Range/GHz	Gain/dB @ 2GHz	P1dB/dBm @ 2GHz	OIP3/dBm @ 2GHz	NF/dB @ 2GHz	Device Type and Package
L-band Amplifier	MGA-53543	5/54	0.4 - 6	15.4	18.6	39.1	1.5	E-pHEMT MMIC, SOT343
L-band Buffer - Low Power	MGA-61563 ¹	3/41.6	0.1 - 6	15.5	15.1	31.7	1	E-pHEMT MMIC, SOT363
	MGA-82563	3/84	0.1 - 6	13.2	17.3	31	2.2	GaAs MMIC, SOT363
	MGA-81563	3/42	0.1 - 6	12.4	14.8	27	2.8	GaAs MMIC, SOT363
	ABA-53563	5/46	DC - 3.5	21.5	12.7	22.9	3.5	Si MMIC, SOT363
	ABA-52563	5/35	DC - 3.5	21.5	9.8	19.9	3.3	Si MMIC, SOT363
	ABA-51563	5/18	DC - 3.5	21.5	1.8	11.4	3.7	Si MMIC, SOT363
	MGA-85563 ³	3/15 to 30	0.8 - 6	19	1 to 8	12 to 17	1.9	GaAs MMIC, SOT363
L-band Buffer-High Power	MGA-565P8 ²	5/67	0.1 - 3.5	21.8	20 (Psat)	—	—	E-pHEMT MMIC, LPCC
	MGA-82563	3/84	0.1 - 6	13.2	17.3	31	2.2	GaAs MMIC, SOT363

提示：
1. 电流可调：10–60mA。
2. 高反向隔离度：典型值 50dB。
3. 反向隔离度典型值 40dB。

C- 频段

VSAT 推荐器件

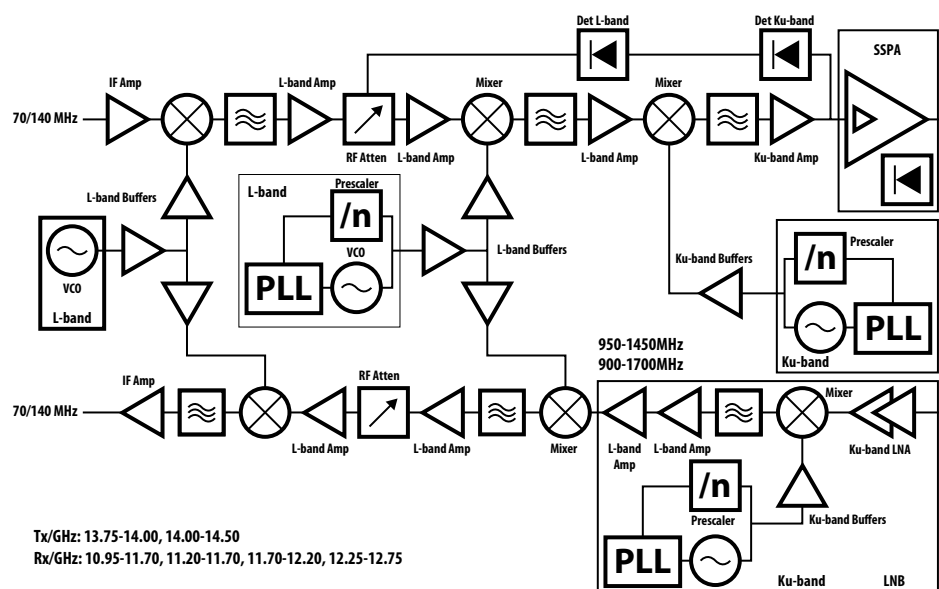
Application	Part Number	Description	Package
L-band/C-band Detector - Schottky Diodes	HSMS-282x	Ct max = 1pF @0V	SOT323/363/23/143
	HSMS-286x	Ct max = 0.3pF @0V	SOT323/363/23/143
RF Attenuator - PIN Diodes	HSMP-381x	Very low distortion, Ct typ. = 0.2pF @0V, see AN1048 pi-attenuator design	SOT323/23/25/SOD-323
	HSMP-386x	Lower current, low cost, Ct typ. = 0.2pF @0V, see AN1048 pi-attenuator design	SOT323/363/23/25/SOD-323
RF Attenuator - Module	ALM-38140	Low distortion, high dynamic range attenuator module	MCOB 3.8x3.8x1.0mm

Application	Part number	Typ. Bias V/ mA	Frequency Range/ GHz	Gain/dB ¹ @ 5GHz	P1dB/dBm ¹ @ 5GHz	OIP3/dBm @ 5GHz	NF/dB ² @ 5GHz	Device Type and Package
C-band LNA	ATF-36163	1.5/10	1.5 - 18	15	5	—	0.61	PHEMT FET, SOT363
	ATF-551M4	2.7/10	0.5 - 6	12	14.5	24.5	0.75	E-pHEMT FET, MiniPak
	ATF-55143	2.7/10	0.5 - 6	12	13.5	24	0.9	E-pHEMT FET, SOT343
C-band Amplifier C-band Buffer	MGA-545P8	3.3/135	0.1 - 6	12	21	34	3.6	E-pHEMT MMIC, LPCC
	MGA-82563	3/84	0.1 - 6	9.5	17	31	2.6	GaAs MMIC, SOT363
	MGA-81563	3/42	0.1 - 6	10.5	14.5	27	3.2	GaAs MMIC, SOT363
	MGA-85563	3/15 to 30	0.8 - 6	16	1 to 8	12 to 18	1.6	GaAs MMIC, SOT363
	ATF-541M4	3/60	0.5 - 8	11	19.5	37.5	1.02	E-pHEMT FET, MiniPak
	ATF-54143	3/60	0.5 - 6	11	18	36	0.93	E-pHEMT FET, SOT343
	ATF-521P8	4.5/200	0.5 - 6	10	27	39	1.75	E-pHEMT FET, LPCC

提示:

1. 分立 FETs 的增益和 P1dB 是在最佳 IP3 匹配的情况下测试。
2. NFmin 适用于 LNA 器件。

Ku- 频段



VSAT 推荐器件

Application	Part number	Typ. Bias V/ mA	Frequency Range/ GHz	Gain/dB¹ @ 12GHz	P1dB/dBm¹ @ 12GHz	OIP3/dBm @ 12GHz	NF/dB² @ 12GHz	Device Type and Package (mm)
Ku-band LNA	ATF-36163	1.5/10	1.5 - 18	9.4	5	—	1	PHEMT FET, SOT363
	AMMP-6220	3/60	6 - 20	23	10	23	2.2	SM 5x5
	VMMK-1225	2/20	0.5 - 26	11	8	23	0.9	SM 1x0.5
	VMMK-1218	3/20	0.5 - 18	10.7	12	12	0.7	SM 1x0.5
Ku-band Amplifier	AMMP-5618	5/107	6 - 20	13	19	30	4.4	SM 5x5
Ku-band Buffer	AMMP-6408	5/650	6 - 18	18	28	38	4.5	SM 5x5
Ku-band Mixer (IRM)	AMMP-6530	-1/0	5 - 30	-10	8	18	10	SM 5x5

提示:

1. 分立 FETs 的增益和 P1dB 是在最佳 IP3 匹配的情况下测试。

2. NFmin 适用于 LNA 器件。

Ku- 频段

VSAT 推荐器件

Application	Part Number	Description	Package
Ku-band Detector - Schottky diodes	HSMS-286x	Ct max = 0.3pF @0V	SOT323/363/23/143
	HSCH-5310/5330	Si single, Ct=0.1pF, med. barrier/low barrier	beamlead
	HSCH-5312/5332	Si single Ct=0.15pF, med. barrier/low barrier	beamlead
Ku-band Mixer - Schottky diodes	HSMS-8202	Si series pair, Ct=0.26pF, low-cost	SOT23
	HSCH-5312/5332	Si single Ct=0.15pF, med. barrier/low barrier	beamlead

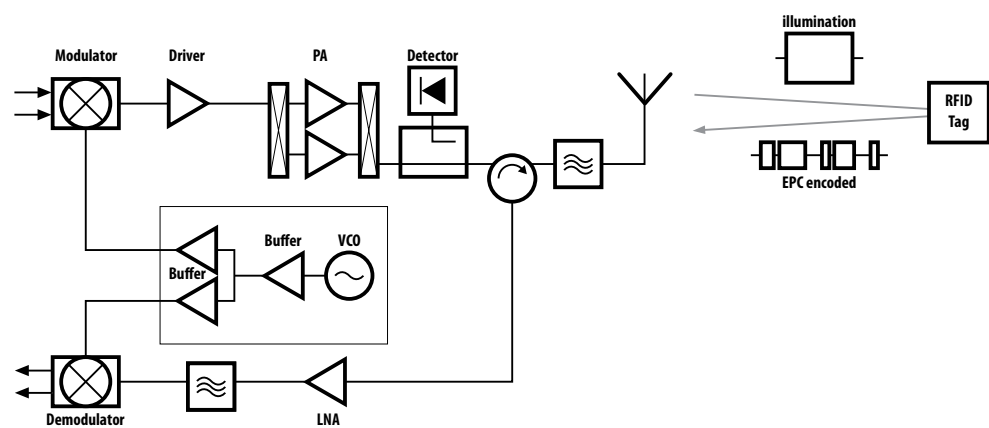
Ka- 频段

VSAT/ 模块转换器

Application	Part number	Typ. Bias (V/mA)	Frequency Range/(GHz)	Gain/(dB) @ 30 GHz	P1dB/(dBm) @ 30 GHz	OIP3/(dBm) @ 30 GHz	NF/(dB) @ 30 GHz	Device Type and Package (mm)
Ka-band LNA/ Driver	AMMP-6232	4/135	18 - 32	22	18	28.5	3.1	SM 5x5
	AMMP-6233	3/65	18 - 32	21	8	21	2.8	SM 5x5
	AMMP-6333	5/230	18 - 33	22	24.5	30	—	SM 5x5
Ka-Band Power Amplifier	AMMP-6430	5/650	27 - 34	20	28	34	7.8	SM 5x5
	AMGP-6432	6/700	28 - 31	20	33	40	—	SM 5x5
	AMGP-6434	6/1400	28 - 31	20	35.5	42	—	SM 5x5
Ka-Band Mixer	AMMP-6545	—	RF: 18 - 40/ IF: DC - 3.5	-8	—	12 (IIP3)	—	SM 5x5
	AMMP-6546	—	RF: 18 - 40/ IF: DC - 3.5	-10	—	12 (IIP3)	—	SM 5x5
Ka-Band VVA	AMMP-6630	—	5 - 30	-3.5	—	25 (IIP3)	—	SM 5x5
Ka-Band Multiplier	AMMP-6125	3.5/5V @ 100/110	10 - 24	22	22 (Pout)	—	—	SM 5x5
	AMMP-6120	5/112	8 - 24	13	18 (Pout)	—	—	SM 5x5
Ka-Detector	VMMK-3313	1.5/0.15	15 - 33	—	—	—	—	SM 1x0.5x0.25

射频识别

射频识别 900 MHz 读卡器



射频识别 900 MHz 读卡器推荐器件

Application	Part number	Typ. Bias V/ mA	Frequency Range/GHz	Gain/dB ¹ @ 0.9GHz	P1dB/dBm ¹ @ 0.9GHz	OIP3/dBm @ 0.9GHz	NF/dB ² @ 0.9GHz	Device Type and Package (mm)
LNA	MGA-53543	5/54	0.4 - 6	17.4	19.3	39.7	1.3	E-pHEMT MMIC, SOT343
	MGA-72543 ⁵	3/20	0.1 - 6	14.8	12	23	1.35	E-pHEMT MMIC, SOT343
	ATF-54143	3/60	0.45 - 6	23.4	18.4	35.5	0.3	E-pHEMT FET, SOT343
	ATF-58143	3/30	0.45 - 6	23.1	18.1	28.6	0.3	E-pHEMT FET, SOT343
Driver Amplifier	MGA-53543	5/54	0.4 - 6	17.4	19.3	39.7	1.3	E-pHEMT MMIC, SOT343
	MGA-545P8	3.3/127	0.05 - 7	22.4	21.5	34	2.6	E-pHEMT MMIC, LPCC
	MGA-61563 ⁴	3/41	0.1 - 6	19.3	15.4	30.5	0.9	E-pHEMT MMIC, SOT363
	ATF-52189	4.5/200	0.05 - 6	16.5	27.2	42	1	E-pHEMT FET, SOT89
	ATF-521P8	4.5/200	0.05 - 6	17.2	26.5	42.5	0.7	E-pHEMT FET, LPCC
	ATF-53189	4/135	0.05 - 6	17.2	21.7	42	0.41	E-pHEMT FET, SOT89
	ATF-531P8	4/135	0.05 - 6	25	23	37	0.26	E-pHEMT FET, LPCC
	ADA-4789	4.1/80	DC - 2.5	16.9	18.8	33.2	4.3	Si MMIC, SOT89
Power Amplifier	ADA-4743	3.8/60	DC - 2.5	16.5	17.1	32.6	4.2	Si MMIC, SOT343
	ATF-50189	4.5/280	0.05 - 6	21.5	28.5	44	1	E-pHEMT FET, SOT89
	ATF-501P8	4.5/280	0.05 - 6	16.6	27.3	42	1	E-pHEMT FET, LPCC
Mixer	ATF-511P8	4.5/200	0.05 - 6	17.8	29.6	43	1.2	E-pHEMT FET, LPCC
	IAM-92516	5/26	0.4 - 3.5	6.5 (CL)	16 (IP1dB)	29.3 (IIP3)	7.1	E-pHEMT MMIC, LPCC(3x3)
	MGA-565P8 ³	5/67	0.1 - 3.5	28	22 (Psat)	—	—	E-pHEMT MMIC, LPCC
Buffer-High Power	ABA-54563	5/79	DC - 3.4	23	18	34	4.2	Si MMIC, SOT363
	ABA-31563	3/14	DC - 3.5	21.3	3	15	3.8	Si MMIC, SOT363
Buffer-Low Power	ABA-51563	5/18	DC - 3.5	21	3.5	15	3.4	Si MMIC, SOT363
	ABA-52563	5/35	DC - 3.5	21.3	12	26	2.9	Si MMIC, SOT363
	ABA-53563	5/46	DC - 3.5	21.5	14.5	26.5	3.1	Si MMIC, SOT363
	HSMS-282x	Ct max = 1pF @0V						SOT323/363/23/143

提示：
1. 分立 FETs 的增益和 P1dB 是在最佳 IP3 匹配的情况下测试。
2. NFmin 适用于 LNA 器件。
3. 高反向隔离度：典型值 50dB。
4. 电流可调：20–60mA。
5. 集成旁路功能：电流可在 5–60mA 之间调节。

产品选型指南

射频集成电路 (砷化镓和硅)

砷化镓射频集成电路

Component	Part Number	Freq. Range (GHz)	Test Freq. (GHz)	Vdd (V)	Idq (mA)	NF (dB)	Gain (dB)	P1dB (dBm)	OIP3 (dBm)	Package
GaAs Fixed Gain Amplifiers	MGA-52543	0.4 - 6	1.9	5	53	1.9	14.2	+17.4	+32	SOT-343 (SC-70)
	MGA-53543	0.4 - 6	1.9	5	54	1.5	15.4	+18.6	+39	SOT-343 (SC-70)
	MGA-53589	0.05 - 6	1.9	5	52	1.66	15.8	+18.5	+37	SOT-89
	MGA-81563	0.1 - 6	2.0	3	42	2.8	12.4	+14.8	+27	SOT-363 (SC-70)
	MGA-82563	0.1 - 6	2.0	3	84	2.2	13.2	+17.3	+31	SOT-363 (SC-70)
	MGA-85563	0.8 - 6	2.0	3	15 to 30	1.9	18.0	+1 to +8	+12 to +17	SOT-363 (SC-70)
	MGA-86563	0.5 - 6	2.0	5	14	1.5	22.7	+4.1	+15	SOT-363 (SC-70)
	MGA-87563	0.5 - 4	2.0	3	4.5	1.6	14.0	-2	+8	SOT-363 (SC-70)

Component	Part Number	Freq. Range (GHz)	Test Freq. (GHz)	Vdd (V)	Idsat (mA)	PAE (%)	Gain (dB)	PSAT (dBm)	OIP3 (dBm)	Package (mm)
GaAs Medium Power Amplifiers	MGA-30789	2 - 6	3.5	5	100		11.7	—	41.8	SOT-89
	MGA-30889	0.04 - 2.6	0.9	5	65		15.5	—	38	SOT-89
	MGA-30989	2 - 6	3.5	5	51		12	—	36.8	SOT-89
	MGA-412P8	2.4 - 2.5	2.4	3.3	95	NA	25.5	+25.3	38	LPCC 2X2
	MGA-425P8	2 - 10	5.25	3.3	65	47.0	16.0	+20.3	32.9	LPCC 2x2
	MGA-545P8	0.05 - 7	5.825	3.3	92	46.0	11.5	+22	+34	LPCC 2x2
	MGA-83563	0.5 - 6	2.4	3	152	37.0	22.0	+22	+29	SOT-363 (SC-70)

Component	Part Number	Freq. Range (GHz)	Test Freq. (GHz)	Vdd (V)	Idq (mA)	NF (dB)	Gain (dB)	OP1dB (dBm)	OIP3 (dBm)	Package (mm)
GaAs Match-Pair Dual LNA	MGA-16116	0.45-1.45	0.9	4.8	61	0.27	18.4	21.2	21.2 (IIP3)	QFN 4x4x0.85
	MGA-16216	1.44-2.35	1.95	4.8	52.5	0.32	18.4	19.5	19.5 (IIP3)	QFN 4x4x0.85
	MGA-16316	1.95-4.0	2.6	4.8	53.3	0.45	18.2	18.7	15.5 (IIP3)	QFN 4x4x0.85

Component	Part Number	Freq. Range (GHz)	Test Freq. (GHz)	Vdd (V)	Idq (mA)	NF (dB)	Gain (dB)	P1dB (dBm)	OIP3 (dBm)	Package (mm)
GaAs Smart Bias Amplifier	MGA-61563	0.1 - 6	2	3	41	1.2	16.6	+15.8	+28.5	SOT-363 (SC-70)
	MGA-62563	0.1 - 3	0.5	3	60	0.9	22.0	+17.8	+32.9	SOT-363 (SC-70)
	MGA-685T6	0.1 - 1.5	0.5	3	10	0.9	18.9	17.3	+18.7	UTSLP 2.0x1.3x0.4
	MGA-68563	0.1 - 1.5	0.5	3	11	1	19.7	17.5	20.7	SOT-363

射频集成电路（砷化镓和硅）

砷化镓射频集成电路

Component	Part Number	Freq. Range (GHz)	Test Freq. (GHz)	Vdd (V)	Idq (mA)	NF (dB)	Gain (dB)	PAE (%)	OIP3 (dBm)	Package (mm)
GaAs High Linearity Amplifier	ALM-31122	0.7 - 1	0.9	5	394	2	15.6	52.5	47.6	MCOB 5.0x6.0x1.1
	ALM-31222	1.7 - 2.7	2	5	415	2.7	14.9	52.6	47.9	MCOB 5.0x6.0x1.1
	ALM-31322	3.3 - 3.9	3.5	5	413	2.8	13.2	51.5	47.7	MCOB 5.0x6.0x1.1
	ALM-32120	0.7 - 1.0	0.9	5	800	2.5	14	47	52	MCOB 7.0x10.0x1.1
	ALM-32220	1.7 - 2.7	2	5	800	3.5	14.8	47.5	50	MCOB 7.0x10.0x1.1
	ALM-32320	3.3 - 3.9	3.5	5	800	2.5	12	43	49	MCOB 7.0x10.0x1.1
	MGA-30116	0.75 - 1	0.9	5	202.8	2	17	47	44.1	QFN 3x3
	MGA-30216	1.7 - 2.7	2	5	206	2.8	14.2	48.9	45.3	QFN 3x3
	MGA-30316	3.3 - 3.9	3.5	5	198	2.7	12.8	51.3	44.4	QFN 3x3
	MGA-30489	0.25 - 3.0	1.9	5	97	3	13.3	—	39	SOT-89
	MGA-30689	0.04 - 2.6	1.95	5	104	3.3	14.6	—	40	SOT-89
	MGA-31189	0.05 - 2	0.9	5	111	3	21	42.5	42	SOT-89
	MGA-31289	1.5 - 3	1.9	5	124	2	18.7	36.4	41.8	SOT-89
	MGA-31389	0.05 - 2	0.9	5	73	2	21.3	41.2	38.6	SOT-89
	MGA-31489	1.5 - 3	1.9	5	69	1.9	19.5	39.1	37.3	SOT-89
	MGA-31589	0.45 - 1.5	0.9	5	146	1.9	20.4	45	45.3	SOT-89
	MGA-31689	1.5 - 3	1.9	5	168	1.9	18.1	48	44.9	SOT-89
	MGA-31716	DC - 2	0.9	5	58	1.9	20.2	43.9	41	QFN 3x3
	MGA-31816	1.5 - 4.0	1.9	5	59	1.6	19.5	38.2	40.5	QFN 3x3

Component	Part Number	Freq. Range (GHz)	Test Freq. (GHz)	Vdd (V)	Idsat (mA)	Isolation (dB)	Gain (dB)	Psat (dBm)	Package (mm)
GaAs LO Buffer Amplifier	MGA-565P8	0.1 - 3	2	5	67	50.0	21.8	+20	LPCC2x2

Component	Part Number	Freq. Range (GHz)	Test Freq. (GHz)	Vd/Id (V/mA)	Switch Insertion Loss (dB)	NF (dB)	Gain (dB)	P1dB (dBm @ mA)	IIP3 (dBm @mA)	Package (mm)
GaAs Amplifier with Bypass Switch	MGA-645T6	1.7 - 3	2.4	3/7	4.5	1.1	15.0	+9 @ 7	+7 @ 7	UTSLP 2.0x1.3x0.4
	MGA-64606	1.5 - 3	2.4	3/7	4.5	0.95	15.3	-3.0(IP1dB)	+5@7	UTSLP 2.0x1.3
	MGA-655T6	2.5 - 4	3.5	3/10	4.2	1.17	14.7	+12 @ 10	+5.5 @ 10	UTSLP 2.0x1.3x0.4
	MGA-65606	2.5 - 4	3.5	3/7	4.2	1.05	15.3	-2.4(IP1dB)	+5.7@7	UTSLP 2.0x1.3
	MGA-71543	0.1 - 6	2	2.7/10	5.6	0.8	15.4	+7.4 @ 10	+3 @ 10	SOT-343 (SC-70)
	MGA-72543	0.1 - 6	2	2.7/20	2.5	1.4	13.6	+11.2 @ 20	+10.5 @ 20	SOT-343 (SC-70)
	MGA-725M4	0.1 - 6	2	2.7/20	1.6	1.3	15.7	+13.1 @ 20	+9.9 @ 20	MiniPak Package
	MGA-785T6	0.1 - 1.5	0.6	3/10	2.6	1.5	15.7	3.2 @ 10	+1.10 @ 10	UTSLP 2.0x1.3x0.4

射频集成电路 (砷化镓和硅)

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Component	Part Number	Freq. Range (GHz)	Test Freq. (GHz)	Vd (V)	Id (mA)	NF (dB)	Gain (dB)	P1dB (dBm)	OIP3 (dBm)	Package (mm)
GaAs LNA with Power Down	MGA-665P8	0.5 - 6	5.25	3	21	1.5	16.5	11.1	15.4	LPCC2x2
GaAs LNA Module	MGA-13116	0.4 - 1.5	0.9	5	55	0.51	38	23.3	41.4	QFN 4x4x0.85
	MGA-13216	1.5 - 2.5	1.95	5	53	0.61	35.8	23.6	40.5	QFN 4x4x0.85
	MGA-13316	2.2 - 4.0	2.5	5	53	0.76	34.3	23.5	41.8	QFN 4x4x0.85
	MGA-14516	1.4 - 2.7	1.95	5	45	0.66	31.7	23.5	38	QFN 4x4x0.85
	MGA-231T6	0.9 - 3.5	1.575	2.7	6	0.9	18.5	(-8) IP1dB	2 (IIP3)	E-pHEMT, UTSLP 2x1.3x.04
	MGA-24106	0.9 - 3.5	1.575	2.7	3.3	0.97	17.9	-9.7 (IP1dB)	-2.0 (IIP3)	uDFN 1.5x1.3x0.5
	MGA-631P8	0.4 - 1.5	0.9	4	60	0.5	17.5	18	32.8	LPCC2x2
	MGA-632P8	1.4 - 3	1.95	4	60	0.6	17.6	18.3	35.4	LPCC2x2
	MGA-633P8	0.45 - 2	0.9	5	54	0.37	18	22	37	QFN 2x2x0.75
	MGA-634P8	1.5 - 2.3	1.9	5	48	0.44	17.4		36	QFN 2x2x0.75
	MGA-635P8	2.3 - 4	2.5	5	56	0.56	18	21.9	35.9	QFN 2x2x0.75
	MGA-636P8	0.45 - 1.5	0.7	4.8	105	0.5	18.5	23	41.5	QFN 2x2x0.75
	MGA-637P8	1.5 - 2.5	1.7	4.8	70	0.6	17.5	22	41.5	QFN 2x2x0.75
	MGA-638P8	2.5 - 4	2.5	4.8	90	0.8	17.5	22	39.5	QFN 2x2x0.75
	MGA-635T6	0.9 - 2.4	1.575	2.85	4.9	0.86	14.6	1 (IP1dB)	3.5 (IIP3)	UTSLP 2.0x1.3x0.4
	MGA-675T6	4.9 - 6.0	5.5	2.7	5	0.9	16.3	NA	14.7	UTSLP
	ALM-11036	0.776 - 0.87	0.849	5	92	0.78	15.6	4	37.6	SMT 7x10
	ALM-11136	0.87 - 0.915	0.915	5	92	0.76	15.4	4.5	38.2	SMT 7x10
	ALM-11236	1.71 - 1.85	1.785	5	99	0.67	15.9	3.5	32.3	SMT 7x10
	ALM-11336	1.85 - 1.98	1.98	5	100	0.72	15.3	3.8	35.5	SMT 7x10
	ALM-2506	0.9 - 2.5	1.575	2.85	8	0.8	14.3	1.9 (IP1dB)	4.7 (IIP3)	MCOB 2x2x1.1

Component	Part Number	Test Freq. (GHz)	Vd/Id (V/mA)	NF (dB)	Gain (dB)	IP1dB (dBm)	IIP3 (dBm)	Cell-Band Rejection	PCS-Band Rejection	Package (mm)
GPS LNA/Filter Module	ALM-1612	1.575	2.7/6	0.95	18.2	-8	2	69	67	MCOB 3.3x2.1x1.0
	ALM-1912	1.575	2.7/6	1.62	19.3	-8	1.5	>57	>53	MCOB 2.9x2x1
	ALM-2412	1.575	2.85/9	0.85	13.5	2.2	6.1	63	65	MCOB 3.3x2.1x1.1
GPS Filter/LNA/Filter Module	ALM-1712	1.575	2.7/8	1.65	12.8	3	3	104	92.6	E-pHEMT & FBAR, MCOB 4.5x2.2x1.0
	ALM-1812	1.575	2.8/6	1.9	18.5	-8	2	95	90	E-pHEMT & FBAR, MCOB 4.5x2.2x1.0
	ALM-2712	1.575	2.7/7.5	12.6	14.2	5	2	—	—	MCOB 3x2.5x1

射频集成电路（砷化镓和硅）

砷化镓射频集成电路

Component	Part Number	Freq. Range (GHz)	Test Freq. (GHz)	Vd (V)	Id (mA)	NF (dB)	Gain (dB)	OIP3 (dBm)	P1dB (dBm)	Package (mm)
Variable Gain Amplifier	ALM-80110	0.4 - 1.6	0.9	5	110	4.8	(-27) to 13.6	40.3	23.3	MCOB 5.0x5.0x1.1
	ALM-80210	1.6 - 2.6	1.9	5	110	5.3	(-25.5) to 9.8	40.8	23.6	MCOB 5.0x5.0x1.1
	ALM-81224	1.45 - 2.75	2.14	5	383	2	23.8	44	27.4	MCOB 6.0x6.0x1.0

	Part Number	Freq. Range (GHz)	Test Freq. (GHz)	Voltage (Vdg)	Current (mA)	NF (dB)	Gain (dB)	P1dB (dBm)	OIP3 (dBm)	Package (mm)
Mixers-Downconverter	IAM-92516	0.4 - 3.5	1.9	5	26	12.5	-6.0	9	27 (IIP3)	LPCC 3x3

Component	Part Number	Freq. Range (GHz)	Test Freq. (GHz)	Vdd (V)	Idq (mA)	Gain (dB)	P1dB (dB)	Pout @ 2.5% EVM	Atten (dB)	Package (mm)
GaAs Power Amplifier Module	MGA-43228	2.3 - 2.5	2.4	5	1023	38.5	36	29.1	23.8	QFN 5x5
	MGA-43328	2.5 - 2.7	2.6	5	1017	37.4	36	29.3	24.5	QFN 5x5
	MGA-43428	851-894MHz	0.88	5	800	>30	36	27dBm@50dBc ACLR	—	MCOB 5x5
	MGA-43528	1.93 - 1.995	1.96	5	1000	>30	35	—	—	MCOB 5x5
	MGA-43628	2.0 - 2.2	2.14	5	1000	>30	35	—	—	MCOB 5x5
	MGA-43728	2.62-2.69	2.65	5	755	38.3	36	27.3dBm@48dBc ACLR	—	MCOB 5x5
	MGA-43828	0.925-0.960	0.94	5	730	32.8	36	27.5dBm@50dBc ACLR	—	MCOB 5x5
	MGA-43003	1.805-1.88	1.842	5	360	41.7	36	27dBm@48dBc ACLR	—	MCOB 5x5
	MGA-43040	2.3-2.4	2.35	5	350	42	35	27 dBm@48dBc ACLR	—	MCOB 5x5
	MGA-43013	728-756 MHz	0.746	5	380	34	36	27 dBm@48dBc ACLR	—	MCOB 5x5
Carrier Grade WiFi	MGA-43024	2401-2473MHz	2.442	5	450	40.8	34	26.8	—	MCOB 5x5

Component	Part Number	Freq. Range (GHz)	Test Freq. (GHz)	BCTRL	Gain (dB)	PAE of 19%	IP1dB (dBm)	Package (mm)
WiFi Amplifier Module	MGA-22003	2.3 - 2.7	2.5	2.8	35	19	31	Small Size 3x3x1
	MGA-23003	3.3 - 3.8	3.5	2.8	35	18	31	Small Size 3x3x1
	MGA-25203	5.1 - 5.9	5.4	2.8	30	13	30	Small Size 3x3x1
	AFEM-S105	5.1 - 5.9	EVM <-32.5dB at 15dBm, <-35dB at 12dBm					Small Size 3.2x3.2x0.6
	AFEM-S106	5.1 - 5.9	EVM <-32.5dB at 15dBm, <-35dB at 12dBm					Small Size 3.2x3.2x0.6

Component	Part Number	Freq. Range (GHz)	Test Freq. (GHz)	Vdd (V)	Idq (mA)	NF (dB)	Gain (dB)	IIP3 (dBm)	IP1dB (dBm)	Package (mm)
WiFi Dual Band LNA Module	ALM-2812	2.4 - 2.5	2.45	3.3	15	0.8	16.7	6.1	5.8	MCOB 3.0x3.0x1.1
		4.9 - 6.0	5.5	3.3	23.4	1.4	23.2	2.2	12.8	MCOB 3.0x3.0x1.1

射频集成电路 (砷化镓和硅)

磷化铟 HBT

Component	Part Number	Freq. Range (GHz)	Test Freq. (GHz)	Vd (V)	Id (mA)	Gain (dB)	NF (dB)	P1dB (dBm)	OIP3 (dBm)	Package (mm)
Gain Block	AVT-50663	DC - 6000	2	5	36	15.3	4	12.5	25	SOT-363 (SC70)
	AVT-51663	DC - 6000	2	5	37	19.6	3.2	12.9	25.1	SOT-363 (SC70)
	AVT-52663	DC - 6000	2	5	45	15.3	4	12.7	27	SOT-363 (SC70)
	AVT-53663	DC - 6000	2	5	48	19.6	3.2	15.1	26.5	SOT-363 (SC70)
	AVT-54689	0.05 - 6	2	5	58	17.1	4.1	17.4	29.6	SOT-89
	AVT-55689	0.05 - 6	2	5	75	17.2	4.3	19.5	32.5	SOT-89

硅集成电路

Component	Part Number	Freq. Range (GHz)	Test Freq. (GHz)	Voltage (Vd)	Current (mA)	NF (dB)	Gain (dB)	P1dB (dBm)	OIP3 (dBm)	Package
Silicon Broadband Amplifiers	ABA-31563	DC - 3.5	2.0	3	14.5	3.8	21.0	+2.0	13.0	SOT-363 (SC-70)
	ABA-51563	DC - 3.5	2.0	5	18	3.7	21.5	+1.8	11.4	SOT-363 (SC-70)
	ABA-52563	DC - 3.5	2.0	5	35	3.3	21.5	+9.8	19.9	SOT-363 (SC-70)
	ABA-53563	DC - 3.5	2.0	5	46	3.5	21.5	+12.7	22.9	SOT-363 (SC-70)
	ABA-54563	DC - 3	2.0	5	79	4.4	23.0	+16.1	27.8	SOT-363 (SC-70)
Silicon Darlington Amplifiers	ADA-4543	DC - 2.5	0.9	3.4	15	3.7	15.1	+1.9	15.0	SOT-343 (SC-70)
	ADA-4643	DC - 2.5	0.9	3.5	35	4.0	17.0	+13.4	28.3	SOT-343 (SC-70)
	ADA-4743	DC - 2.5	0.9	3.8	60	4.2	16.5	+17.1	32.6	SOT-343 (SC-70)
	ADA-4789	DC - 2.5	0.9	3.8	60	4.2	16.5	+17.1	32.6	SOT-89

射频集成电路 (砷化镓和硅)

最小表面装贴封装的射频器件 “0402 尺寸射频器件”

Component	Part Number	Freq. Range (GHz)	Vd (V)/ Idq (mA)	NF (dB)	Gain (dB)	OIP3 (dBm)	P1dB (dBm)	Package (mm)
Low Noise E-PHEMT	VMMK-1218	0.5 - 18	3/20	0.8 @ 10 GHz	10.7 @ 12 GHz	22@10 GHz	12 @ 10 GHz	SM 1x0.5x0.25
	VMMK-1225	0.5 - 26	2/20	1 @ 12 GHz	11 @ 12 GHz	23 @ 12 GHz	8 @ 12 GHz	SM 1x0.5x0.25

Component	Part Number	Freq. Range (GHz)	Biasing Condition (V @ mA)	NF (dB)	Gain (dB)	P1dB (dBm)	OIP3 (dBm)	Package (mm)
Low Noise Amplifier	VMMK-2103	0.5 - 6	5/23	2.1	14	0 (IP1dB)	8 (IIP3)	SM 1x0.5x0.25
	VMMK-2203	1 - 10	5/25	2	16.5	5	14	SM 1x0.5x0.25
	VMMK-2303	0.5 - 6	1.8/21	2	14	9	22	SM 1x0.5x0.25
	VMMK-2403	2 - 4	3/37	1.7	16	16.5	28	SM 1x0.5x0.25
	VMMK-3603	1 - 6	5/36	1.5	16.8	12	25	SM 1x0.5x0.25
	VMMK-3803	3 - 11	3/20	1.5	20	7	0.9 (IIP3)	SM 1x0.5x0.25

Component	Part Number	Freq. Range (GHz)	Biasing Condition (V @ mA)	NF (dB)	Gain (dB)	P1dB (dBm)	OIP3 (dBm)	Package (mm)
Gain Block/ Driver Amplifier	VMMK-2503	1 - 12	5/65	3.4	13.5	17	27	SM 1x0.5x0.25

Component	Part Number	Freq. Range (GHz)	Biasing Condition (V @ mA)	Control Range (dB)	Max. Gain (dB)	Control Voltage (V)	IIP3 (dBm)	Package (mm)
Variable Gain Amplifier	VMMK-3503	0.5 - 18	5/58	23	12	0.65 - 1.8	9 @ 6 GHz	SM 1x0.5x0.25

Component	Part Number	Freq. Range (GHz)	Biasing Condition (V @ mA)	In/Out R.L (dB)	Insertion loss (dB)	Dynamic Range (dB)	Directivity (dB)	Package (mm)
Power Detector	VMMK-3113	2 - 6	1.5V@ 0.15mA	20	0.2 - 0.35	35	15	SM 1x0.5x0.25
	VMMK-3213	6 - 18	1.5V@ 0.15mA	20	0.15 - 0.5	35	15	SM 1x0.5x0.25
	VMMK-3313	15 - 33	1.5V@ 0.15mA	20	0.25 - 0.7	35	15	SM 1x0.5x0.25
	VMMK-3413	25 - 45	1.5V@ 0.15mA	20	0.4 - 0.8	35	10	SM 1x0.5x0.25

晶体管

晶体管

Component	Part Number	Freq. Range (GHz)	Test Freq. (GHz)	Voltage (V)	NF (dB)	Gain (dB)	P1dB (dBm)	S21E (dB)	OIP3 (dBm)	Package
Silicon Bipolar Transistor	AT-30511	DC - 5	0.9	2.7	1.1	16.0	+7.0	17.9	17.0	SOT-143
	AT-30533	DC - 5	0.9	2.7	1.1	13.0	+7.0	15.2	17.0	SOT-23
	AT-31011	DC - 5	0.9	2.7	0.9	13.0	+9.0	19.1	20.0	SOT-143
	AT-31033	DC - 5	0.9	2.7	0.9	11.0	+9.0	15.8	20.0	SOT-23
	AT-32011	DC - 5	0.9	2.7	1.0	14.0	+13.0	18.9	24.0	SOT-143
	AT-32032	DC - 6	0.9	2.7	1.0	15.0	+13.0	11.5	23.0	SOT-323
	AT-32033	DC - 5	0.9	2.7	1.0	12.5	+13.0	15.1	24.0	SOT-23
	AT-32063	DC - 5	0.9	2.7	1.1	14.5	+12.0	17.0	24.0	SOT-363 (SC-70)

Component	Part Number	Freq. Range (GHz)	Test Freq. (GHz)	Vdd / Idq (V)	NF (dB)	Ga (dB)	P1dB (dBm)	OIP3 (dBm)	Gate Width (um)	Package (mm)
Single Voltage Low Noise GaAs E-pHEMTs	ATF-501P8	.05 - 6	2	4.5/280	1.8	14.6	+28	+47	6400	LPCC 2x2
	ATF-50189	.05 - 6	2	4.5/280	1.1	15.5	+29.1	+45.3	6400	SOT-89
	ATF-511P8	.05 - 6	2	4.5/200	1.4	14.8	+30	+42	6400	LPCC 2x2
	ATF-521P8	.05 - 6	2	4.5/200	1.5	17.0	+26.5	+42	3200	LPCC 2x2
	ATF-52189	.05 - 6	2	4.5/200	1.5	16.0	+27.0	+42	3200	SOT-89
	ATF-531P8	.05 - 6	2	4.0/135	0.6	20.0	+24.5	+38	1600	LPCC 2x2
	ATF-53189	.05 - 6	2	4.0/135	0.85	15.5	+23.0	+40	1600	SOT-89
	ATF-54143	.45 - 6	2	3.0/60	0.5	16.6	+20.4	+36	800	SOT-343 (SC-70)
	ATF-541M4	.45 - 10	2	3.0/60	0.5	17.5	+21.4	+36	800	MiniPak Package
	ATF-55143	.45 - 6	2	2.7/10	0.6	17.7	+14.4	+24	400	SOT-343 (SC-70)
	ATF-551M4	.45 - 10	2	2.7/10	0.5	17.5	+14.6	+24	400	MiniPak Package
	ATF-58143	.45 - 6	2	3.0/30	0.5	16.5	+19	+30.5	800	SOT-343 (SC-70)
Low Noise GaAs pHEMTs	ATF-33143	.45 - 6	2	4.0/80	0.5	15.0	+22	+33.5	1600	SOT-343 (SC-70)
	ATF-331M4	.45 - 6	2	4.0/80	0.6	15.0	+19	+31	1600	MiniPak Package
	ATF-34143	.45 - 6	2	4.0/60	0.5	17.5	+20	+31.5	800	SOT-343 (SC-70)
	ATF-35143	.45 - 6	2	2.0/15	0.4	18.0	+11	+21	400	SOT-343 (SC-70)
	ATF-38143	.45 - 6	2	2.0/10	0.4	16.0	+12	+22	800	SOT-343 (SC-70)
	ATF-36163	1.5 - 18	12	1.5	1.2	10.0	+5	—	200	SOT-363 (SC-70)
	VMMK-1218	0.5 - 18	—	3/20	0.7	10.7	12	12	—	SM 1x0.5
	VMMK-1225	0.5 - 26	—	2/20	0.9	11	8	23	—	SM 1x0.5

二极管— PIN

最小封装

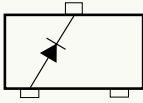
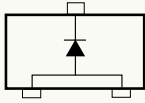
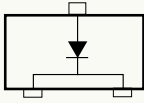
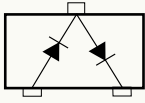
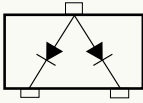
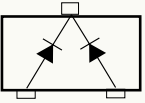
	Single	Anti-parallel	Parallel	Shunt Switch
Configuration	 (0)	 (2)	 (5)	 (T)
PIN	HMPP-3860	HMPP-3862	HMPP-3865	
	HMPP-3890	HMPP-3892	HMPP-3895	HMPP-389T

3 引脚二极管 SOT-323 (SC-70)

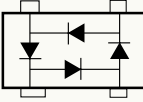
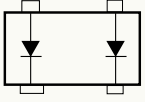
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Configuration						
PIN	HSMP-381B		HSMP-481B	HSMP-381C	HSMP-381E	HSMP-381F
	HSMP-386B			HSMP-386C	HSMP-386E	HSMP-386F
	HSMP-389B	HSMP-489B		HSMP-389C	HSMP-389E	HSMP-389F
		HSMP-482B				

二极管— PIN

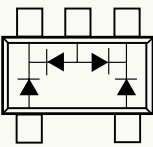
3 引脚二极管 SOT-23

	Single	Dual Anode	Dual Cathode	Series Pair	Common Anode	Common Cathode
Configuration						
PIN	HSMP-3810		HSMP-4810	HSMP-3812	HSMP-3813	HSMP-3814
	HSMP-3860			HSMP-3862	HSMP-3863	HSMP-3864
	HSMP-3890	HSMP-4890		HSMP-3892	HSMP-3893	HSMP-3894
	HSMP-3820	HSMP-4820		HSMP-3822	HSMP-3823	HSMP-3824
	HSMP-3830			HSMP-3832	HSMP-3833	HSMP-3834
				ASML-5822		
				ASML-5829		

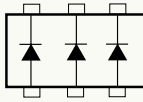
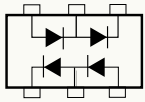
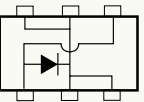
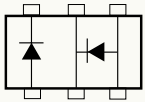
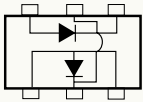
4 引脚二极管 SOT-143

	Ring Quad	Unconnected Pair
Configuration		
PIN	HSMP-386D	HSMP-3895
	HSMP-389D	

5 引脚二极管 SOT-25

	Pi Quad
Configuration	
PIN	HSMP-3816
	HSMP-3866

6 引脚二极管 SOT-363 (SC-70)

	Unconnected Trio	Dual Mode Switch	Low Inductance	Series Shunt Pair	High Frequency Series Shunt Pair
Configuration					
PIN	HSMP-386L				
	HSMP-389L	HSMP-389R	HSMP-389T	HSMP-389U	HSMP-389V

二极管— PIN

PIN 二极管

Application	Part Number	C_i (pF) (max/typ)	R_S (Ω) (max)	V_{BR} (V) (min)	T_{rr} (nS) (typ)	Lifetime (nS) (typ)
Low Distortion Attenuator	HSMP-381x	0.35/0.27	3.0	100	300	1500
Low Distortion/Low Inductance Attenuator	HSMP-481x	0.40/0.35	3.0	100	300	1500
Low Resistance Limiter	HSMP-382x	0.8/0.6	0.6	50	7	70
Low Inductance Limiter	HSMP-482x	1.0/0.75	0.6	50	7	70
Low Current Switch/ Attenuator	HSMP-383x	0.3/0.2	1.5	200	80	500
Low Current Switch/ Attenuator	HMPP/HSMP-386x	- / 0.2	1.5 typ	50	80	500
Low Resistance Switch	HMPP/HSMP-389x	0.30/0.20	2.5	50	—	200
Low Resistance/Low Inductance Switch	HSMP-489X	0.38/0.33	2.5	50	—	200

外伸引脚 PIN Diodes

Part Number	C_i (pF)	R_S (Ω)	V_{BR} (V)	T_{rr} (nS)	Lifetime (nS)	Configuration	Package
HPND-4005	0.017	4.7	120	n/a	100	Single	Beam Lead
HPND-4028	0.045	2.3	60	3	36	Single	Beam Lead

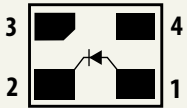
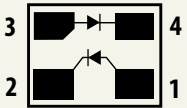
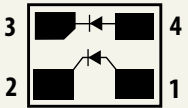
Component	Part Number	Freq. Range (MHz)	IIP3 (dBm)	IP1dB (dBm)	Dynamic Range (dB)	IL (dB)	VSWR (dB)	Package (mm)
50MHz – 4GHz PIN Diode Variable Attenuator Module	ALM-38140	50 - 1000	50	28.8	38	2.8	1.4	3.8x3.8x1.0 MCOB
		1000 - 2000	48.9	35.6	36	3.2	1.4	

Component	Part Number	Freq. Range (MHz)	IIP3 (dBm)	IP1dB (dBm)	ISO (dB)	IL (dB)	RL (dB)	Package
PIN Diode Diversity Switch	HSMP-386D	900	56.8	47.4	25.4	0.35	27.0	SOT-143
	HSMP-389D	900	55.4	46.3	25.7	0.36	28.0	

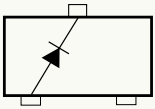
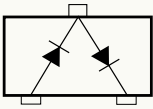
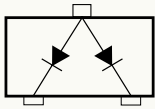
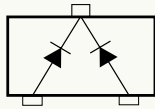
Component	Part Number	Freq. Range (MHz)	OP1dB (dBm)	IL (dB)	RL (dB)	Package
Schottky Assisted PIN Diode Low Power Limiter	ASML-5822	900	2.85	0.85	10.9	SOT-323
	ASML-5829	900	6.05	0.33	15.6	

二极管—肖特基二极管

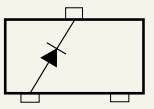
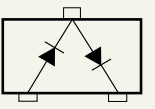
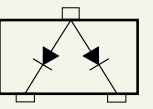
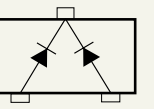
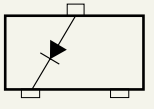
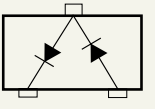
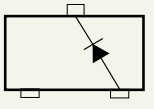
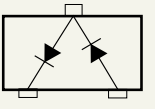
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	Single	Anti-parallel	Parallel
Configuration	 (0)	 (2)	 (5)
Schottky	HMP5-2820	HMP5-2822	HMP5-2825

3 引脚二极管 SOT-323 (SC-70)

	Single	Series Pair	Common Anode	Common Cathode
Configuration				
Schottky	HSMS-270B	HSMS-270C		
	HSMS-280B	HSMS-280C	HSMS-280E	HSMS-280F
	HSMS-281B	HSMS-281C	HSMS-281E	HSMS-281F
	HSMS-282B	HSMS-282C	HSMS-282E	HSMS-282F
	HSMS-285B	HSMS-285C		
	HSMS-286B	HSMS-286C	HSMS-286E	HSMS-286F

3 引脚二极管 SOT-23

	Single	Series Pair	Common Anode	Common Cathode
Configuration				
Schottky	HSMS-2700	HSMS-2702		
	HSMS-2800	HSMS-2802	HSMS-2803	HSMS-2804
	HSMS-2810	HSMS-2812	HSMS-2813	HSMS-2814
	HSMS-2820	HSMS-2822	HSMS-2823	HSMS-2824
	HSMS-2860	HSMS-2862	HSMS-2863	HSMS-2864
				
	HSMS-2850	HSMS-2852		
				
	HSMS-8101	HSMS-8202		

二极管—肖特基二极管

4 引脚二极管 SOT-143

	Unconnected Pair	Ring Quad	Bridge Quad	Crossover Quad
Configuration				
Schottky	HSMS-2805		HSMS-2808	
	HSMS-2815	HSMS-2817	HSMS-2818	
	HSMS-2825	HSMS-2827	HSMS-2828	HSMS-2829
	HSMS-2865			
		HSMS-8207		HSMS-8209
	HSMS-2855			

6 引脚二极管 SOT-363 (SC-70)

	High Isolation Unconnected Pair	Unconnected Trio	Common Cathode Quad	Common Anode Quad	Bridge Quad	Ring Quad
Configuration						
Schottky	HSMS-280K	HSMS-280L	HSMS-280M	HSMS-280N	HSMS-280P	HSMS-280R
	HSMS-281K	HSMS-281L				
	HSMS-282K	HSMS-282L	HSMS-282M	HSMS-282N	HSMS-282P	HSMS-282R
		HSMS-285L			HSMS-285P	
	HSMS-286K	HSMS-286L			HSMS-286P	HSMS-286R

二极管—肖特基二极管

肖特基势垒二极管

Application	Part Number	V_{BR} (V) (min)	V_F (mV) (max) IF = 1 mA	$V_F @ I_F$ (V @ mA) (max)	C_t (pF) (typ)	R_D (Ω) (typ)	Volt. Sens. (Y) (mV/mW)			Rv (K Ω) (typ)
							900 MHz	2.45 GHz	5.8 GHz	
General Purpose Detector	HMPS/HSMS-282x	15	340	0.7 @ 30	1.0	12.0	—	—	—	—
High Current Clipping/ Clamping	HSMS-270x	15	—	550 @ 100	6.7	0.65	—	—	—	—
Lowest flicker noise	HSMS-281x	20	400	1.0 @ 35	1.2	15.0	—	—	—	—
High V_{BR}	HSMS-280x	70	400	1.0 @ 35	2.0	35	—	—	—	—
Zero bias detector	HSMS-285x	—	250	0.15 @ 0.1	0.3	—	40	30	22	8
High frequency up to 14 GHz	HSMS-286x	4	350	0.25 @ 0.1	0.3	—	50	35	25	5
Mixer	HSMS-8x0x	4	350	0.25 @ 0.1	0.26	11.0	—	35	25	5

外伸引脚肖特基二极管

Part Number	V_{BR} (V)	V_F (mV)	C_t (pF)	R_D (Ω)	Configuration	Package
HSCH-5310	4	500	0.1	20.0	Medium Barrier	Beam-Lead
HSCH-5312	4	500	0.15	16.0	Medium Barrier	Beam-Lead
HSCH-5314	4	500	0.15	16.0	Medium Barrier	Beam-Lead
HSCH-5330	4	375	0.1	20.0	Low Barrier	Beam-Lead
HSCH-5332	4	375	0.15	16.0	Series Pair	Beam-Lead
HSCH-5340	4	375	0.1	20.0	Low Barrier	Beam-Lead

毫米波集成电路

毫米波集成电路选型指南

	Frequency Bands / GHz															
	<6	6	7	8	10	11	13	15	18	20	23	26	28	32	38	>38
Power Amplifiers																
AMMP-6408																
AMMC-6408																
AMMP-6421																
AMMC-6425																
AMMC-6440																
AMMP-6441																
AMMC-6442																
AMMP-6442																
AMGP-6432																
AMGP-6434																
Driver/Buffer Amps																
AMMP-5618																
AMMC-5618																
AMMP-5620																
AMMC-5620																
AMMC-6333																
AMMP-6333																
AMMC-5040																
AMMC-6345																
Low Noise Amplifiers																
AMMP-6220																
AMMC-6220																
AMMP-6222																
AMMC-6222																
AMMC/AMMP-6232																
AMMP-6233																
AMMC-6241																
VMMK-1218																
VMMK-1225																
Travelling Wave Amplifiers																
AMMP-5024																
AMMC-5024																
AMMC-5026																
AMMC-5025																

毫米波集成电路

毫米波集成电路选型指南

	Frequency Bands / GHz															
	<6	6	7	8	10	11	13	15	18	20	23	26	28	32	38	>38
Attenuators																
AMMC-6630																
AMMP-6630																
AMMC-6640																
AMMP-6640																
AMMC-6650																
AMMP-6650																
Mixers																
AMMP-6530 IRM																
AMMC-6530 IRM																
AMMP-6522																
AMMC-6522																
AMMP-6545 Sub Harmonic																
AMMC-6545 Sub Harmonic																
AMMP-6546 Sub Harmonic																
AMMP-6548 Sub Harmonic																
Doublers																
AMMP-6120																
AMMC-6120																
AMMP-6125																
AMMC-6140																
Multipliers																
AMMC-5040																
Switches																
AMMC-2008 SPDT																

毫米波集成电路

毫米波集成电路选型指南

Component	Part Number	Freq. Range (GHz)	Bias condition (V @ mA)	NF (dB)	Gain (dB)	P1dB (dBm)	OIP3 (dBm)	Package (mm)
GaAs MMIC Low Noise Amplifier	AMMC-5024	30Khz - 40	4V @ 160	3.7	17.5	17.3	22.5	Chip
	AMMC-5026	2 - 35	7V @ 150	3.6	10.0	+24	31	Chip
	AMMC-6220	6 - 20	3V @ 55	1.8	23.0	9	19	Chip
	AMMC-6222	7-21	4V @ 120	2.4	25.0	16	29	Chip
	AMMC-6232	18 - 32	4V @ 135	2.8	27.0	18	29	Chip
	AMMC-6241	26 - 43	3V @ 60	2.7	20.0	10	20	Chip
	AMMP-6220	6 - 20	3V @ 55	1.9	23.0	10	21	SM 5x5
	AMMP-6222	7 - 21	4V @ 120	2.3	24	15.5	29	SM 5x5
	AMMP-6232	18 - 32	4V @ 138	3.0	23	18	29	SM 5x5
	AMMP-6233	18 - 32	3V @ 65	2.6	23	8	19	SM 5x5
	VMMK-1218	0.5 - 18	3/20	0.7	10.7	12	12	SM 1x0.5
	VMMK-1225	0.5 - 26	2/20	0.9	11	8	23	SM 1x0.5
GaAs MMIC Broadband Medium Power Amplifiers	AMMC-5025	30Khz -80	5V @ 100	—	8	15	20	Chip
	AMMC-5040	20 - 45	4.5V @ 300	8	24	22	23	Chip
	AMMC-5618	6 - 20	5V @ 107	4.4	14.5	+19.5	26	Chip
	AMMC-5620	6 - 20	5V @ 95	4.2	19	+15	23.5	Chip
	AMMC-6333	18 - 33	5V@230mA	5	20	23	30	Chip
	AMMC-6345	20 - 45	5V @ 480	9.0	20.0	24	32	Chip
	AMMP-5618	6 - 20	5V @ 107	4.4	14.5	+19.5	30	SM 5x5
	AMMP-5620	6 - 20	5V @ 95	5.1	17.5	15	22.5	SM 5x5
	AMMP-6333	18 - 33	5V@230mA	5.5	20	23	30	SMT 5X5

Component	Part Number	Freq. Range (GHz)	Biasing Condi- tion (V @ mA)	NF (dB)	Gain (dB)	P1dB (dBm)	OIP3 (dBm)	Package (mm)
GaAs MMIC Power Amplifiers	AMMC-6408	6 - 18	5V@650mA	4.3	19	29	38	Chip
	AMMP-6408	6 - 18	5V @ 650	4.5	18.0	28	38	SM 5x5
	AMMC-6425	18 - 28	5V @ 900 mA	9	20	28	38	Chip
	AMMC-6431	25 - 33	5V @ 650 mA	8.5	19	28.5	37	Chip
	AMMC-6442	37 - 40	5V @ 700 mA	7.5	23	30	36.5	Chip
	AMMP-6442	37 - 40	5V @ 700 mA	8	23	30	36	SM 5x5
	AMGP-6432	28 - 31	6V @ 700 mA	—	20	33	40 @ 30 GHz	SM 5x5
	AMGP-6434	28 - 31	6V @ 1400 mA	—	20	35.5	42 @ 30 GHz	SM 5x5

毫米波集成电路

毫米波集成电路选型指南

Component	Part Number	Freq. Range (GHz)	In/Output RL (dB)	Control Range (dB)	MIn. IL (dB)	Control Voltage (V)	IIP3 (dBm)	Package (mm)
GaAs MMIC Variable Attenuators	AMMC-6630	5 - 45	10/10	20	3.5 @ 25 GHz	0 to +1V	+23 @ 25 GHz	Chip
	AMMC-6640	DC - 50	12/12	20	4 @ 50 GHz	0 to +1.2V	+27 @ 10dB/ 30 GHz	Chip
	AMMC-6650	DC - 40	15/15	22	3.1 @ 40 GHz	0 to +1.5V	+7 @ 22 GHz	Chip
	AMMP-6630	5 - 30	10/10	20	3.5 @ 25 GHz	0 to +1V	+23 @ 25 GHz	SM 5x5
	AMMP-6640	DC-40	10/10	20	4.4 @ 30 GHz	0 to +1.2V	+27 @ 10dB/ 30 GHz	SM 5x5
	AMMP-6650	DC-30	12/12	22	2.1 @ 30 GHz	0 to +1.5V	+7 @ 22 GHz	SM 5x5

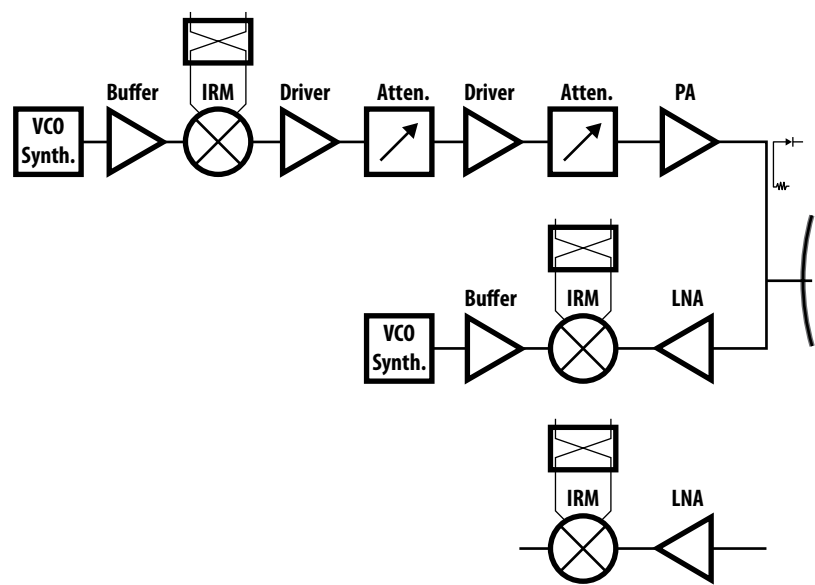
Component	Part Number	Freq. Range (GHz)	Insertion Loss (dBm)	Isolation (dB)	Input P1dB (dBm)	Control Input (Vdc)	Package
GaAs MMIC SPDT Switch	AMMC-2008	DC - 50	2.3	25	14	0 / -5	Chip

Component	Part Number	RF Freq. (GHz)	IF Freq. (GHz)	Conversion Gain (dB)	LO/RF Iso (dB)	IIP3 (dBm)	Image Reject (dB)	Package (mm)
GaAs MMIC Mixers/Converter	AMMC-6530	5 - 30	DC - 5	-10	22	18	15	Chip
	AMMP-6522	7 - 20	DC - 3.5	13		-4	15	SM 5x5
	AMMP-6530	5 - 30	DC - 5	-8	22	18	15	SM 5x5
	AMMP-6545	18 - 45	DC - 3.5	-11	30	11	—	SM 5x5
	AMMP-6522	7 - 20	DC - 3.5	-13	—	-2 @ 16 GHz	15	SM 5x5
	AMMP-6530	5 - 30	DC - 5	-5 @ 20 GHZ	25	24 @ 23 GHZ	15	SM 5x5
	AMMP-6532	20 - 32	1 - 5	-13	—	-2 @ 26 GHz	15	SM 5x5
	AMMP-6545	18 - 40	DC - 3.5	-11 @ 36GHz	30	12	—	SM 5x5
	AMMP-6546	18 - 40	DC - 3.5	-11 @ 35GHz	30	16 @ 30 GHZ	—	SM 5x5
	AMMC-6530	5 - 30	DC - 5	-5 @20 GHZ	25	24 @ 23 GHZ	15	Chip
	AMMC-6545	18 - 45	DC - 3.5	-9 @ 30GHz	33	18	—	Chip

Component	Part Number	Input Freq. (GHz)	Output Freq. (GHz)	IP1dB (dBm)	Pout (dBm)	Fo (dBc)	3Fo (dBc)	Package (mm)
GaAs MMIC Doublers	AMMC-6120	4 - 12	8 - 24	2.0	15	25	25	Chip
	AMMC-6140	10 - 20	20 - 40	5.0	-1	30	25	Chip
	AMMP-6130	15	30	3.0	21	60	50	SM 5x5
	AMMP-6120	4 - 12	8 - 24	2.0	15	25	25	SM 5x5
	AMMP-6125	5 - 12	10 - 24	0	22	20	20	SM 5x5

微波无线中继应用电路

微波中继封装型推荐 7–8 GHz 解决方案

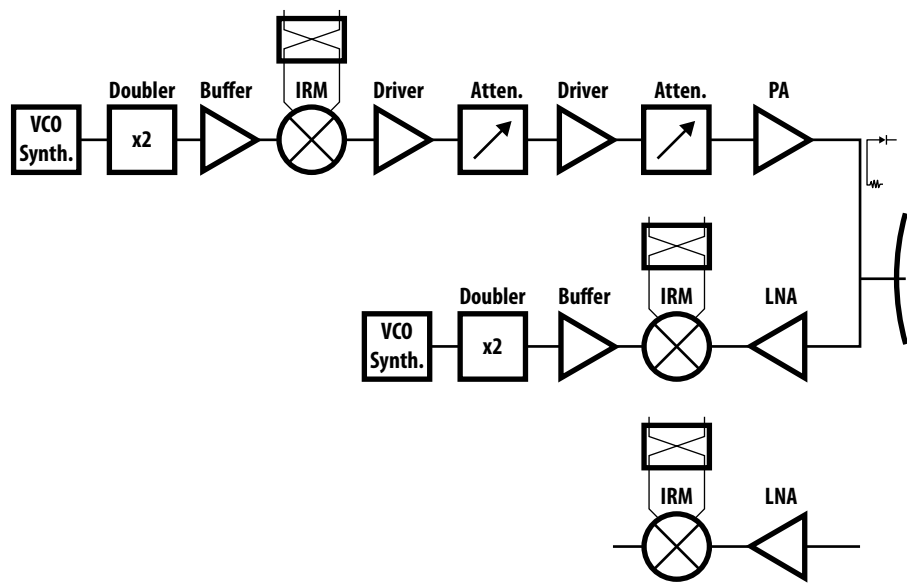


微波中继封装型推荐 7–8 GHz 解决方案

Component	Part Number	Freq. Range (GHz)	Bias condition (V @ mA)	NF (dB)	Gain (dB)	P1dB (dBm)	OIP3 (dBm)	Package (mm)
	AMMP-5618	6 - 20	5V @ 107	4.4	14.5	+19	—	5x5
	AMMP-5620	6 - 20	5V @ 95	5.1	17.5	+15	—	5x5
	AMMP-6220	6 - 20	3V @ 55	2.5	22	+10.0	—	5x5
	AMMP-6222	7 - 21	4V @ 120	2.3	24	+15.5	—	5x5
	VMMK-3213	6 - 18	1.5V@0.15	—	—	—	—	1x0.5x0.25

微波无线中继应用电路

微波中继封装型推荐 10–18 GHz 解决方案



微波中继封装型推荐 10–11 GHz 解决方案

Component	Part Number	Freq. Range (GHz)	Bias condition (V @ mA)	NF (dB)	Gain (dB)	P1dB (dBm)	OIP3 (dBm)	Package (mm)
	AMMP-5618	6 - 20	5V @ 107	4.4	14.5	+19	—	5x5
	AMMP-5620	6 - 20	5V @ 95	5.1	17.5	+15	—	5x5
	AMMP-6120	8 - 24	5V @ 112	—	—	—	—	5x5
	AMMP-6125	10 - 24	3.5V/5V @ 260	—	—	—	—	5x5
	AMMP-6220	6 - 20	3V @ 55	2.5	22	+10.0	—	5x5
	AMMP-6222	7 - 21	4V @ 120	2.3	24	+15.5	—	5x5
	VMMK-3213	6 - 18	1.5V@0.15	—	—	—	—	1x0.5x0.25

微波中继封装型推荐 13–15 GHz 解决方案

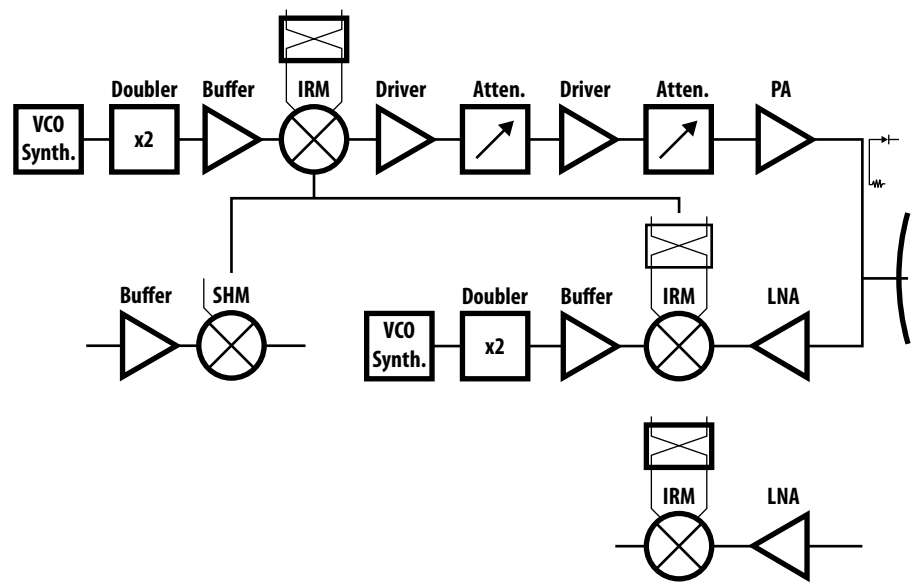
Component	Part Number	Freq. Range (GHz)	Bias condition (V @ mA)	NF (dB)	Gain (dB)	P1dB (dBm)	OIP3 (dBm)	Package (mm)
	AMMP-5618	6 - 20	5V @ 107	4.4	14.5	+19	—	5x5
	AMMP-5620	6 - 20	5V @ 95	5.1	17.5	+15	—	5x5
	AMMP-6120	8 - 24	5V @ 112	—	—	—	—	5x5
	AMMP-6125	10 - 24	3.5V/5V @ 260	—	—	—	—	5x5
	AMMP-6220	6 - 20	3V @ 55	2.5	22	+10.0	—	5x5
	AMMP-6222	7 - 21	4V @ 120	2.3	24	+15.5	—	5x5
	VMMK-3213	6 - 18	1.5V@0.15	—	—	—	—	1x0.5x0.25

微波中继封装型推荐 18 GHz 解决方案

Component	Part Number	Freq. Range (GHz)	Bias condition (V @ mA)	NF (dB)	Gain (dB)	P1dB (dBm)	OIP3 (dBm)	Package (mm)
	AMMP-5618	6 - 20	5V @ 107	4.4	14.5	+19	—	5x5
	AMMP-5620	6 - 20	5V @ 95	5.1	17.5	+15	—	5x5
	AMMP-6120	8 - 24	5V @ 112	—	—	—	—	5x5
	AMMP-6125	10 - 24	3.5V/5V @ 260	—	—	—	—	5x5
	AMMP-6220	6 - 20	3V @ 55	2.5	22	+10.0	—	5x5
	AMMP-6222	7 - 21	4V @ 120	2.3	24	+15.5	—	5x5
	AMMP-6232	18 - 32	4V @ 135	3.0	23	+18.0	—	5x5
	AMMP-6233	18 - 32	3V @ 65	2.6	23	+8.0	—	5x5
	VMMK-3313	15 - 33	1.5V@0.15	—	—	—	—	1x0.5x0.25

微波无线中继应用电路

微波中继封装型推荐 23-26 GHz 解决方案



微波中继封装型推荐 23 GHz 解决方案

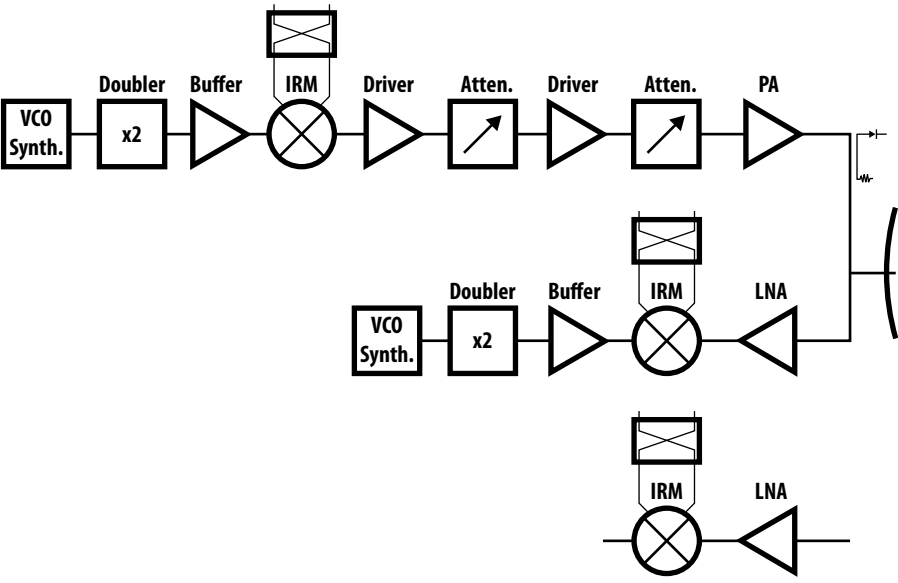
Component	Part Number	Freq. Range (GHz)	Bias condition (V @ mA)	NF (dB)	Gain (dB)	P1dB (dBm)	OIP3 (dBm)	Package (mm)
	AMMP-5618	6 - 20	5V @ 107	4.4	14.5	+19	—	5x5
	AMMP-5620	6 - 20	5V @ 95	5.1	17.5	+15	—	5x5
	AMMP-6120	8 - 24	5V @ 112	—	—	—	—	5x5
	AMMP-6125	10 - 24	3.5V/5V @ 260	—	—	—	—	5x5
	AMMP-6220	6 - 20	3V @ 55	2.5	22	+10.0	—	5x5
	AMMP-6222	7 - 21	4V @ 120	2.3	24	+15.5	—	5x5
	AMMP-6232	18 - 32	4V @ 135	3.0	23	+18.0	—	5x5
	AMMP-6233	18 - 32	3V @ 65	2.6	23	+8.0	—	5x5
	AMMP-6333	18 - 33	5V @ 230mA	5.5	20	23	30	5x5
	VMMK-3313	15 - 33	1.5V @ 0.15	—	—	—	—	1x0.5x0.25

微波中继封装型推荐 26 GHz 解决方案

Component	Part Number	Freq. Range (GHz)	Bias condition (V @ mA)	NF (dB)	Gain (dB)	P1dB (dBm)	OIP3 (dBm)	Package (mm)
	AMMP-5618	6 - 20	5V @ 107	4.4	14.5	+19	—	5x5
	AMMP-5620	6 - 20	5V @ 95	5.1	17.5	+15	—	5x5
	AMMP-6220	6 - 20	3V @ 55	2.5	22	+10.0	—	5x5
	AMMP-6222	7 - 21	4V @ 120	2.3	24	+15.5	—	5x5
	AMMP-6232	18 - 32	4V @ 135	3.0	23	+18.0	—	5x5
	AMMP-6233	18 - 32	3V @ 65	2.6	23	+8.0	—	5x5
	AMMP-6333	18 - 33	5V @ 230mA	5.5	20	23	30	5x5
	VMMK-3313	15 - 33	1.5V @ 0.15	—	—	—	—	1x0.5x0.25

微波无线中继应用电路

微波中继封装型推荐 28–32 GHz 解决方案



微波中继封装型推荐 28 GHz 解决方案

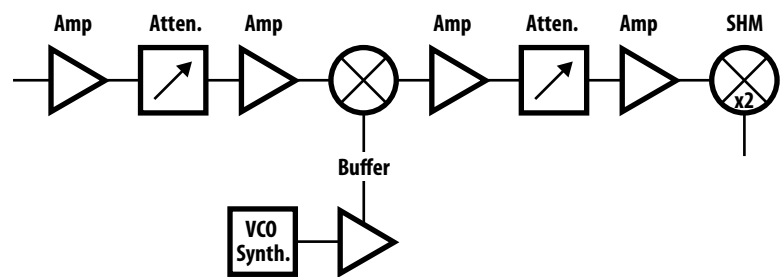
Component	Part Number	Freq. Range (GHz)	Bias condition (V @ mA)	NF (dB)	Gain (dB)	P1dB (dBm)	OIP3 (dBm)	Package (mm)
	AMMP-5618	6 - 20	5V @ 107	4.4	14.5	+19	—	5x5
	AMMP-5620	6 - 20	5V @ 95	5.1	17.5	+15	—	5x5
	AMMP-6220	6 - 20	3V @ 55	2.5	22	+10.0	—	5x5
	AMMP-6222	7 - 21	4V @120	2.3	24	+15.5	—	5x5
	AMMP-6232	18 - 32	4V @135	3.0	23	+18.0	—	5x5
	AMMP-6425	18 - 28	5V @ 650	—	22	+28.0	—	5X5
	AMMP-6233	18 - 32	3V @ 65	2.6	23	+8.0	—	5x5
	AMMP-6333	18 - 33	5V@230mA	5.5	20	23	30	5X5
	VMMK-3313	15 - 33	1.5V@0.15	—	—	—	—	1x0.5x0.25

微波中继封装型推荐 32 GHz 解决方案

Component	Part Number	Freq. Range (GHz)	Bias condition (V @ mA)	NF (dB)	Gain (dB)	P1dB (dBm)	OIP3 (dBm)	Package (mm)
	AMMP-5618	6 - 20	5V @ 107	4.4	14.5	+19	—	5x5
	AMMP-5620	6 - 20	5V @ 95	5.1	17.5	+15	—	5x5
	AMMP-6220	6 - 20	3V @ 55	2.5	22	+10.0	—	5x5
	AMMP-6222	7 - 21	4V @120	2.3	24	+15.5	—	5x5
	AMMP-6232	18 - 32	4V @135	3.0	23	+18.0	—	5x5
	AMMP-6233	18 - 32	3V @ 65	2.6	23	+8.0	—	5x5
	AMMP-6333	18 - 33	5V@230mA	5.5	20	23	30	5X5
	VMMK-3413	25 - 45	1.5V@0.15	—	—	—	—	1x0.5x0.25

微波无线中继应用电路

微波中继中频第一级和第二级推荐解决方案



微波中继中频第一级和第二级推荐解决方案

Part Number	Freq. Range (GHz)	Test Freq. (GHz)	Vd (V)	Id (mA)	Gain (dB)	NF (dB)	P1dB (dBm)	OIP3 (dBm)	Package (mm)
ABA-53563	DC - 3.5	2	5	46	21.5	3.5	12.7	22.9	SOT-363 (SC70)
ABA-54563	DC - 3	2	5	79	23	4.4	16.1	27.8	SOT-363 (SC70)
ADA-4789	DC - 2.5	0.9	3.8	60	16.5	4.2	17.1	32.6	SOT-89
ATF-54143	0.45 - 6	2	3	60	16.6	0.5	20.4	36	SOT-363 (SC70)
ATF-541M4	0.45 - 10	2	3	60	17.5	0.5	21.4	36	MiniPak Package
AVT-50663	DC-6000	2	5	36	15.3	4	12.5	25	SOT-363 (SC70)
AVT-52663	DC-6000	2	5	45	15.3	4	12.7	27	SOT-363 (SC70)
AVT-53663	DC-6000	2	5	48	19.5	3.2	15.1	26.5	SOT-363 (SC70)
MGA-30489	0.25 - 3.0	1.9	5	97	13.3	3	—	39	SOT-89
MGA-30689	0.04 - 2.6	1.95	5	104	14.6	3.3	—	40	SOT-89
MGA-30889	0.04 - 2.6	0.9	5	65	15.5	—	—	38	SMT 4.5x4.1x1.5
MGA-565P8	0.1 - 3	2	5	67	21.8	—	—	—	LPCC2x2
MGA-62563	0.1 - 3	0.5	3	60	22	0.9	17.8	32.9	SOT-363 (SC70)
VMMK-2403	1.5 - 4.0	3	3	38	15	1.8	16.5	29	1x0.5x0.25
VMMK-2503	1.0 - 1.2	6	5	65	14	3.3	17	27	1x0.5x0.25

微波中继中频第一级和第二级推荐解决方案

Part Number	Freq. Range (GHz)	IIP3 (dBm)	IP1dB (dBm)	Dynamic Range (dB)	IL (dB)	VSWR (dB)	Package (mm)
ALM-38140	50 - 1000	50	28.8	38	2.8	1.4	3.8x3.8x1.0 MCOB
	1000 - 2000	48.9	35.6	36	3.2	1.4	

Part Number	Freq. Range (GHz)	Test Freq. (GHz)	IIP3 (dBm)	Attenuation (dB)	Insertion Loss (dB)	Return Loss (dB)	Package (mm)
HSMP-3816	0.3 - 4	1	45	38	-3	-22	SOT - 25
HSMP-3866	0.3 - 4	1	30	36	-2.5	-18	SOT - 25



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上海	上海市定西路1100号辽油大厦5楼D座	邮编：200050	厦门	厦门市湖滨南路609号夏商置业大厦17层E单元	邮编：361004
杭州	杭州市西湖区文三路535号莱茵达大厦805室	邮编：310013	苏州	苏州市平江区娄门路266号博济创意园9幢205室	邮编：215000
宁波	宁波市江东区百丈路168号会展中心A座16楼C3室	邮编：315040	沈阳	沈阳市和平区青年大街322号昌鑫大厦F栋909室	邮编：110004
成都	成都市武侯区佳灵路3号红牌楼广场2号楼513室	邮编：610041	郑州	郑州市二七区华中路11号院25号楼3单元5楼西户	邮编：470006
重庆	重庆市江北区红旗河沟国际商会大厦24楼	邮编：400020	株洲	株洲市天元区长江北路8号保利大厦2216室	邮编：412007



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Avago 通信光纤选型指南



Cypress存储器选型指南



Cypress产品选型指南
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EMC RF Labs微波器件选型指南



Epson 晶体产品选型指南



Infineon 射频大功率器件选型指南



Littelfuse 电路保护器件选型指南



Melexis产品选型指南
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Micrel 产品选型指南
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Renesas MCU选型指南



Renesas 电子射频和微波器件选型指南



Renesas 通用IC、晶体管选型指南



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