

Achieve Peak Performance with Microsemi MMICs



DC–65 GHz

Broadband Amplifiers and Modules

Low-Noise Amplifiers

Power Amplifiers

Prescalers and Frequency Detectors

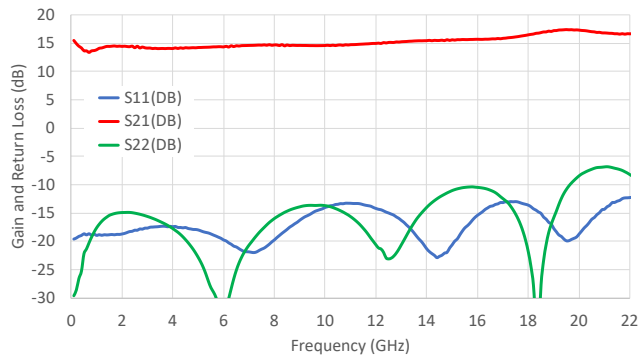
Switches

Attenuators

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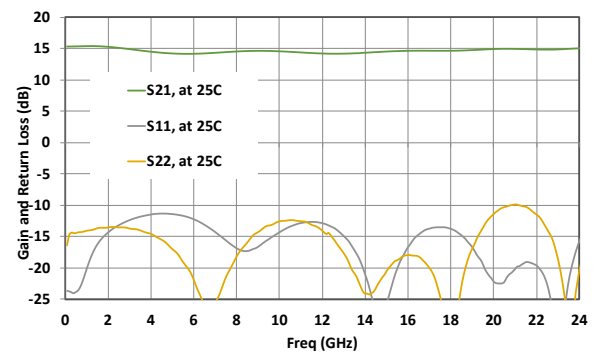
MMA052AA

DC-22GHz, 0.5Watt Distributed Power Amplifier



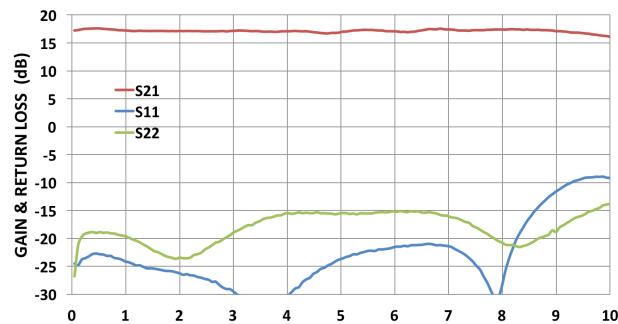
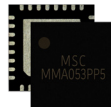
MMA051AA

DC-22GHz, 1Watt Distributed Power Amplifier



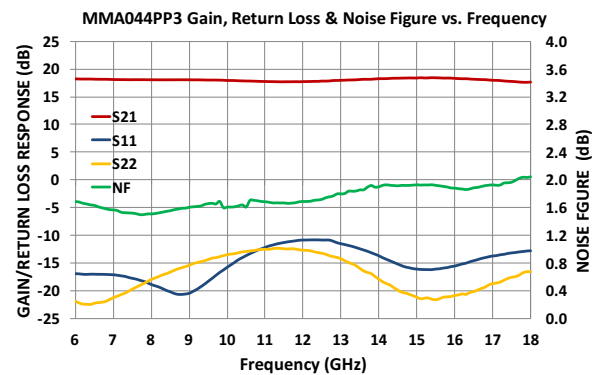
MMA053PP5

DC-8GHz, 1W Distributed Power Amplifier



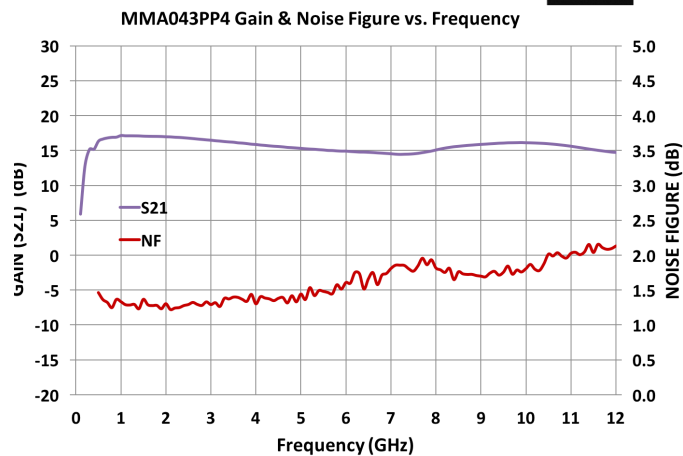
MMA044PP3

6 GHz–18 GHz Wideband LNA



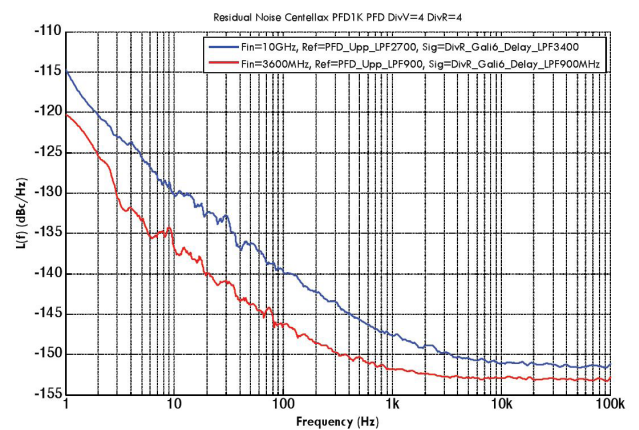
MMA043PP4

0.5 GHz–12 GHz Wideband LNA



PFD1K

8 GHz Phase Frequency
Detector with Dual 40 GHz Prescalers



MMIC Selection Guide

Microsemi's portfolio of MMIC products targets a broad range of applications including electronic warfare, radars, instrumentation (test and measurement), and microwave communications. The portfolio is comprised of broadband amplifiers (both power and low-noise), amplifier modules, prescalers, attenuators, and switches spanning DC to 65 GHz based on high-performance process technologies. Microsemi offers a large number of distributed amplifier products, including industry-leading MMICs. Microsemi's prescalers combine higher frequency operation, the flexibility to divide by a large number of ratios, and very good residual phase noise.

Wideband Low Noise Amplifiers

Part Number	Function	Frequency (GHz)	Gain (dB)	NF (dB)	OIP3 (dBm)	P1dB (dBm)	Bias	Package	ECCN
MMA043AA	Wideband LNA	0.5–12	16.5	1.4 at 7 GHz	29	17	5 V, 55 mA	Die	EAR99
MMA043PP4	Wideband LNA	0.5–12	14	2	28	17	5 V, 55 mA	4 × 4 QFN	EAR99
MMA015AA	Wideband amp	0.1–14	14	2.6 at 10 GHz	29 ³	19 ³	4 V, 80 mA ¹	Die	EAR99
MMA016AA	Wideband amp	0.1–16	14.5	2.6 at 10 GHz	29 ³	19 ³	4 V, 80 mA ¹	Die	EAR99
MMA044AA	Wideband LNA	6–18	21	1.7 at 12 GHz	30	17	4 V, 102 mA	Die	EAR99
UA5M15MP	Distributed amp	5–18	13	6.5 at 10 GHz	28 ³	18 ³	5 V, 130 mA ¹	3 × 3 QFN	EAR99
MMA044PP3	Wideband LNA	6–18	17	2	28	14	4 V, 100 mA	3 × 3 QFN	EAR99
MMA040PP5	Distributed LNA	DC–20	14	2.5	23	13	8 V, 60 mA	5 × 5 QFN	EAR99
MMA041PP5	Distributed LNA	DC–20	18	2.5	35	21	8 V, 160 mA	5 × 5 QFN	EAR99
MMA021AA	Distributed amp	5–20	15.5	5.5 at 10 GHz	28 ³	18 ³	5 V, 135 mA ¹	Die	EAR99
MMA041AA	Distributed LNA	DC–26	18	3.2 at 13 GHz	35	22	8 V, 160 mA	Die	EAR99
MMA040AA	Distributed LNA	DC–28	16.5	2.5 at 10 GHz	27	16	8 V, 60 mA	Die	EAR99
MMA022AA	Distributed LNA	DC–30	17	2.5	29 ³	19 ³	8 V, 200 mA ¹	Die	EAR99
MMA025AA	Distributed LNA	DC–30	17	2.5 at 15 GHz	29 ³	19 ³	8 V, 200 mA ¹	Die	EAR99
MMA026AA	Distributed LNA	DC–30	10.5	4.5 at 20 GHz	29 ³	19 ³	8 V, 190 mA ¹	Die	EAR99
MMA023AA	Distributed amp	DC–30	17	3.0 at 10 GHz	32 ³	22 ³	8 V, 250 mA ¹	Die	EAR99
MMA024AA	Distributed amp	DC–30	10.5	5.5 at 20 GHz	31 ³	21 ³	8 V, 250 mA ¹	Die	EAR99
MMA027AA	Distributed amp	DC–30	11	2.5 at 20 GHz	24 ³	14 ³	4.5 V, 85 mA ¹	Die	EAR99
UAS3LK	Distributed amp	DC–35	19		29 ³	19 ³	5 V, 180 mA ¹	7 × 7 QFN ²	3A001.b.2.d
MMA030AA	Distributed LNA	DC–45	11.5	2.5 at 20 GHz	24 ³	14 ³	4.5 V, 85 mA ¹	Die	3A001.b.2.d
MMA029AA	Distributed amp	DC–45	11	4.5 at 20 GHz	29 ³	19 ³	8 V, 190 mA ¹	Die	3A001.b.2.d
MMA031AA	Distributed amp	DC–45	10	5.5 at 20 GHz	26.5 ³	16.5 ³	8 V, 250 mA ¹	Die	3A001.b.2.d
MMA032AA	Distributed amp	DC–45	10.5	5.5 at 20 GHz	31 ³	21 ³	8 V, 250 mA ¹	Die	3A001.b.2.d
MMA033AA	Distributed amp	DC–45	11	3.0 at 20 GHz	25.5 ³	15.5 ³	7.5 V, 85 mA ¹	Die	3A001.b.2.d
MMA036AA	Distributed LNA	DC–65	11	2.3 at 20 GHz	24 ³	14 ³	4.5 V, 85 mA ¹	Die	3A001.b.2.d
MMA034AA	Distributed amp	DC–65	10.5	5.5 at 20 GHz	31 ³	21 ³	8 V, 250 mA ¹	Die	3A001.b.2.d
MMA035AA	Distributed amp	DC–65	11	4.5 at 20 GHz	28 ³	18 ³	8 V, 190 mA ¹	Die	3A001.b.2.d

1. Power can be selected by choosing on-chip source resistor; 2. hermetic package; 3. the selected bias point may be changed to modify this parameter.

Broadband Power Amplifiers

Part Number	Function	Frequency (GHz)	Gain (dB)	NF (dB)	OIP3 (dBm)	P1dB (dBm)	Bias	Package	ECCN
MMA053AA	Distributed Amp	DC–8	17	3	43	31	11 V, 420 mA	Die	EAR99
MMA053PP5	Distributed Amp	DC– 8	16	4	41	29	11 V, 420 mA	5 × 5 QFN	EAR99
MMA052AA	Distributed Amp	DC–22	15	3.8	38	27.5	9V, 260mA	DIE	EAR99
MMA051AA	Distributed Amp	DC–22	15	3	40	29	10V, 450mA	DIE	EAR99

MMIC Selection Guide

Wideband Amplifier Modules

Part Number	Frequency (GHz)	Gain (dB)	Gain Flatness (dB)	NF (dB)	Psat (dBm)	Bias	Connector	ECCN
UA0L30VM	0.0001–30	33	±2	4.5 at 15 GHz	23	7 V, 475 mA	2.92 mm “K”	EAR99
UA0U50HM	0.01–50	25	±3	10.0 at 30 GHz	22–30	7 V, 1800 mA	2.4 mm	3A001.b.4.c
UA2V50HM	2–50	23–30	±4	10.5 at 30 GHz	22–30	7 V, 1800 mA	2.4 mm	3A001.b.4.c
UA2V50LM	2–50	18	±4.5		22–30	6 V, 1600 mA	2.4 mm	3A001.b.4.c
UA0L65VM	0.0001–65	23–35		5.2 at 30 GHz	22	7 V, 475 mA	2.4 mm	3A001.b.4.f

Note: Contact sales for additional connector options and bias board information.

Prescalers and Frequency Detectors

Part Number	Function	Frequency (GHz)	Pout (dBm)	10 kHz SSB Noise (dBc/Hz)	Pdiss (W)	Package	ECCN
UXN14M9P	/8 to /511, programmable all integers	DC–14	4	–147	1.1	6 × 6 QFN	EAR99
UXN14M32K	/1 to /(2 ³² –1) programmable	DC–15	4	–150	0.30–0.80	4 × 4 ceramic	EAR99
UXM15P	/2/4/8 or /4/5/6/7/8/9 programmable	DC–15	5	–153	0.6	4 × 4 QFN	EAR99
MX1DS10P	/2 to /220 programmable	DC–15	–4	–153	1.4	6 × 6 QFN	EAR99
UXC20P	/2/4/8 programmable	DC–20	5	–153	0.5	4 × 4 QFN	EAR99
UXD20P	/1/2/4/8 programmable	DC–20	5	–153	0.43	4 × 4 QFN	EAR99
UXD20K	/1/2/4/8 programmable	DC–26.5	5	–153	0.43	4 × 4 ceramic	EAR99
UXN40M7K	/1 to /127 programmable, all integers	0.5–40	2	–153	0.75	4 × 4 ceramic	EAR99
PFD1K	8 GHz phase frequency detector with dual 40 GHz prescalers	DC–40	0.4 V _{P-P}	–153	1.32	6 × 6 ceramic	EAR99

Switches

Part Number	Function	Frequency (GHz)	Insertion Loss (dB)	Isolation (dB)	Input P1dB (dBm)	Control Voltage	Package	ECCN
MMS008AA	SP4T non-reflective	DC–8	1.6	45	28	0/–5 V	Die	EAR99
MMS008PP3	SP4T non-reflective	DC–8	1.5	44	29	0/–5 V	3 × 3 QFN	EAR99
MMS006AA	SP2T non-reflective	DC–20	2	40	24	0/–5 V	Die	EAR99
MMS006PP3	SP2T non-reflective	DC–20	2	42	23	0/–5 V	3 × 3 QFN	EAR99

Voltage Variable Attenuators

Part Number	Function	Frequency (GHz)	Insertion Loss (dB)	Dynamic Range (dB)	Return Loss (dB)	Input P1dB (dBm)	Package	ECCN
MMS005AA	Analog VVA	DC–40	3	17	10	8	Die	EAR99
MMS004AA	Analog VVA	DC–50	5	27	12	3	Die	EAR99



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