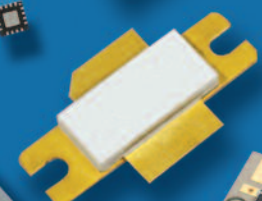
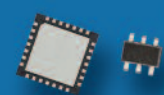


M/A-COM Technology Solutions RF and Microwave Products June 2009



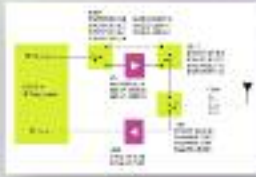
www.macomtech.com



Product Selection Guide

This Product Selection Guide contains information about our standard products. It is intended to assist in the selection of products to ensure availability, ease of use, and optimal performance.

These products represent nearly 60 years of innovation in design and manufacturing. Detailed specifications for our standard parts can be found quickly on our Web site at www.macomtech.com by typing the part number into the search box. We provide product samples, test boards, and applications support.



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Limiting Amplifiers
Package Limiters
Signal Limiters



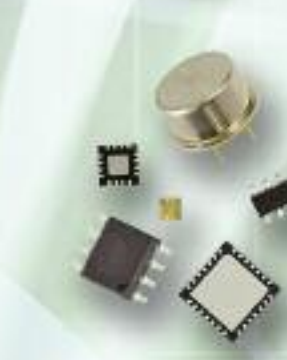
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Mixers



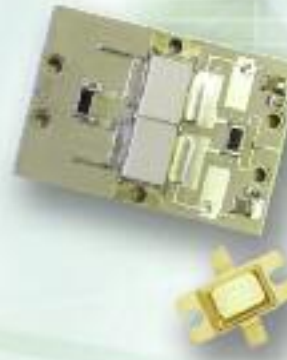
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About M/A-COM Technology Solutions



Partner of Choice

A leader in the RF and microwave industry nearly 60 years, M/A-COM Technology Solutions (M/A-COM Tech) has earned a global reputation as the partner of choice in applications for RF, microwave and millimeter wave technologies. Not only do we offer one of the industry's broadest range of solutions available today, but with our ongoing commitment to R&D, we continue to drive tomorrow's innovations.

Our technology and expertise extend across a broad range of solutions for the commercial wireless telecommunications, broadband, and aerospace and defense markets. M/A-COM Tech products are utilized around the world in some of the most challenging applications found in wireless infrastructure, handsets, WLAN, WiMAX, CATV, VSAT, RFID, automotive, instrumentation, radar and aerospace and defense.

RF and Microwave Capabilities

M/A-COM Tech is one of the only vertically-integrated, non-captive RF and microwave suppliers in the industry. We're uniquely able to produce and process semiconductor materials, design and manufacture complex devices, and combine these devices into multifunction components.

We are a leader in the industry in offering "dual use" technologies that allow us to participate successfully in both commercial and government markets. We have unique technologies and capabilities to offer innovative design solutions including:

- Si, GaAs, AlGaAs, InGaAs, InP, LDMOS, and SiGe IC products
- Unique MMIC processes: HMIC™, GMIC™, iHBT™
- In-house design, fabrication, assembly, and screening capabilities
- Multiple facilities for improved flexibility and local content manufacturing
- Wide spectrum coverage from RF to millimeter wave frequencies
- One of the broadest selection of standard and custom products in the industry

Commercial, Industrial and Military Products

This guide features our standard commercial products. We also provide custom products to meet your specific requirements. If you cannot find a product that meets your requirements in this guide, please contact us and we will work together to develop or recommend an appropriate solution.

For applications that involve more difficult requirements and critical schedules, we offer a dedicated program management team. Our staff of senior program managers is available to support all program and critical management needs and offer the experience and attention to detail that ensures success.

Our Quality Policy

The goal of M/A-COM Technology Solutions is to continually deliver effective, high quality products and services that meet our customers' and internal operations' needs in terms of delivery, performance, safety and value.

Process controls shall be implemented such that the tasks are performed properly the first time, so that products and services meet established, agreed-to requirements.

It is the personal responsibility of every employee to ensure quality, customer satisfaction, continual improvement, maintenance of our quality management system and compliance with customer and regulatory requirements.

Operational Excellence

M/A-COM Technology Solutions operations are certified to ISO 9001, ISO 14001, AS 9100, and QS-9000. Everyone is involved in the continuous improvement effort from suppliers to customers. Best practices are identified and implemented throughout the company, with a continuing challenge to identify opportunities for innovation and improvement.

In our markets, superior reliability and a robust design aren't added benefits—they're often a matter of life and death. While all companies pledge their commitment to designing more reliable products, we literally wrote the book on reliability. It's called *Design for Reliability*, and it is required reading for many college engineering courses. The methodology encompasses the full engineering cycle, from design to verification to analysis.

How to Order

Most of the standard products listed in this selection guide are available directly from the distribution partners found on our web site at www.macomtech.com/distributors. In addition, your local M/A-COM Tech sales office or nearest representative can assist you with ordering or service.

See the back cover catalog for contact information to request any of these items or to get more information.

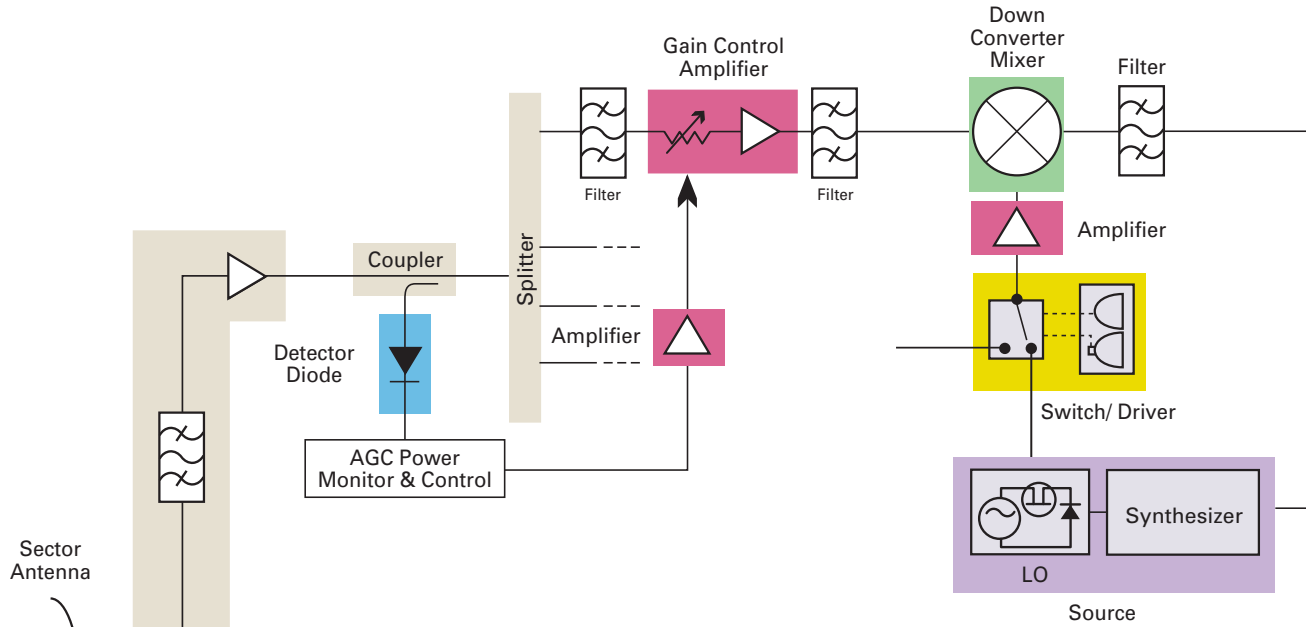
M/A-COM Technology Solutions produces custom products and modifications to standard products, so please contact us with your specifications if you cannot find a standard product that meets your needs. Most of our standard products can be up-screened to applications or we can design custom parts to your specific requirements.

See the back cover of this catalog for contact information to request any of these items.

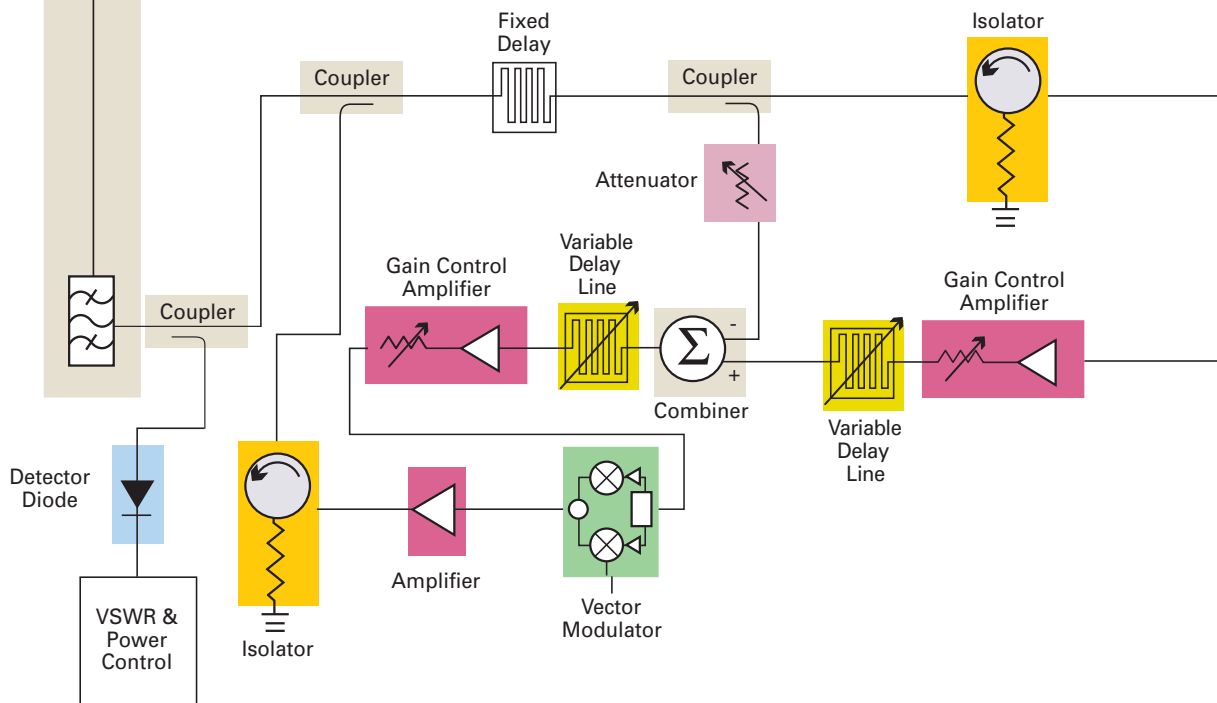
Or visit us at www.macomtech.com for more information.

Block Diagrams : Typical Transceiver

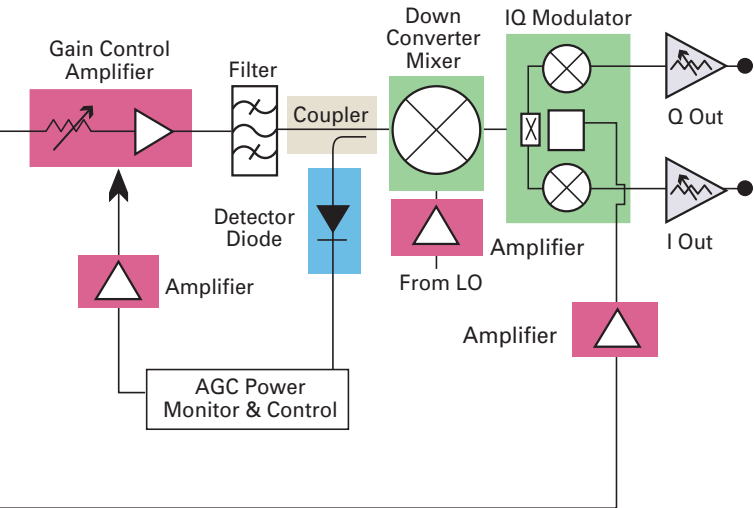
Receiver RF Front End



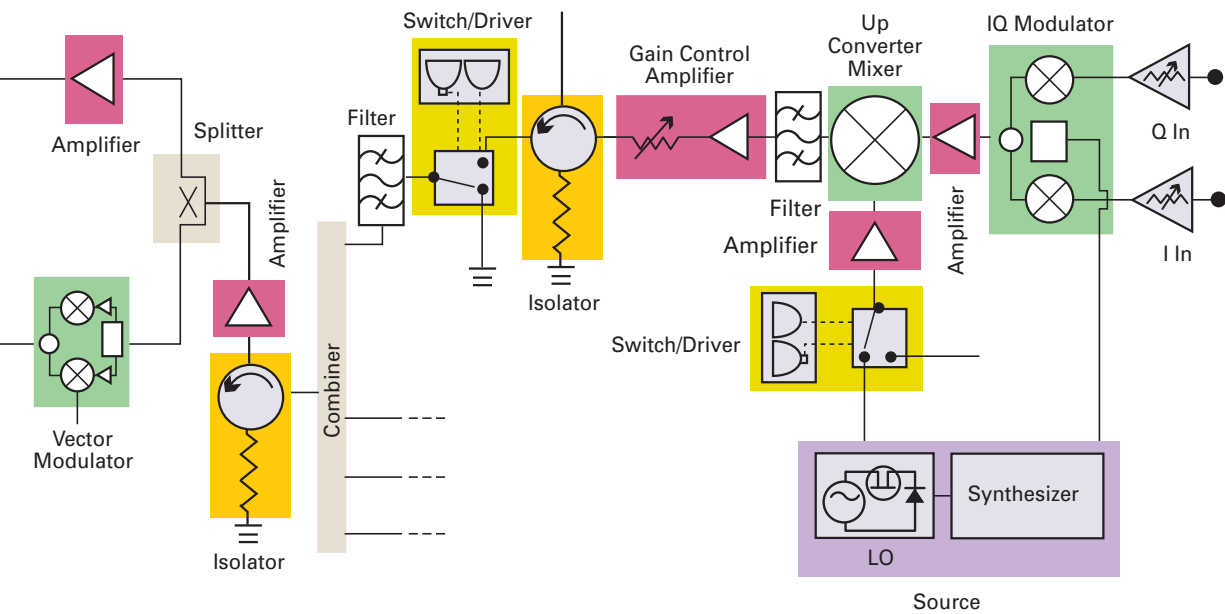
Power Amplifier



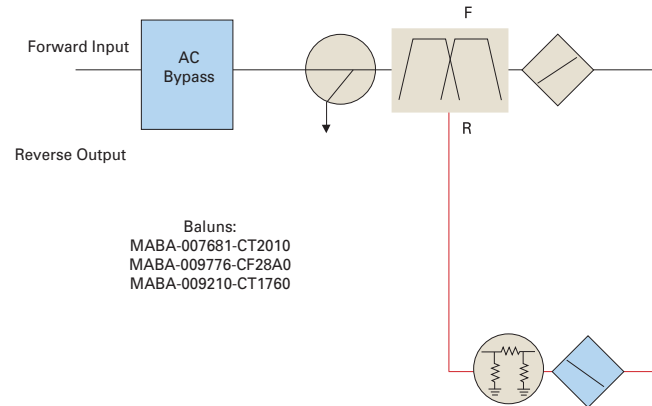
Receiver IF



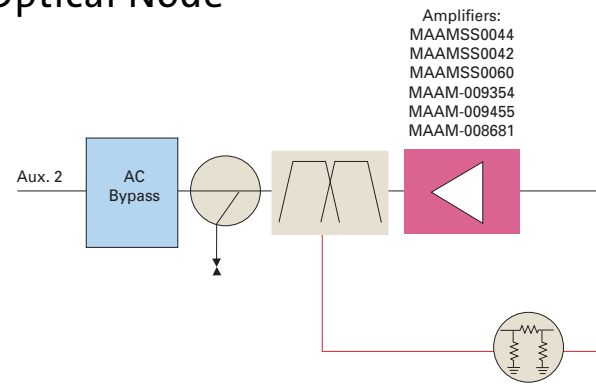
Transmitter



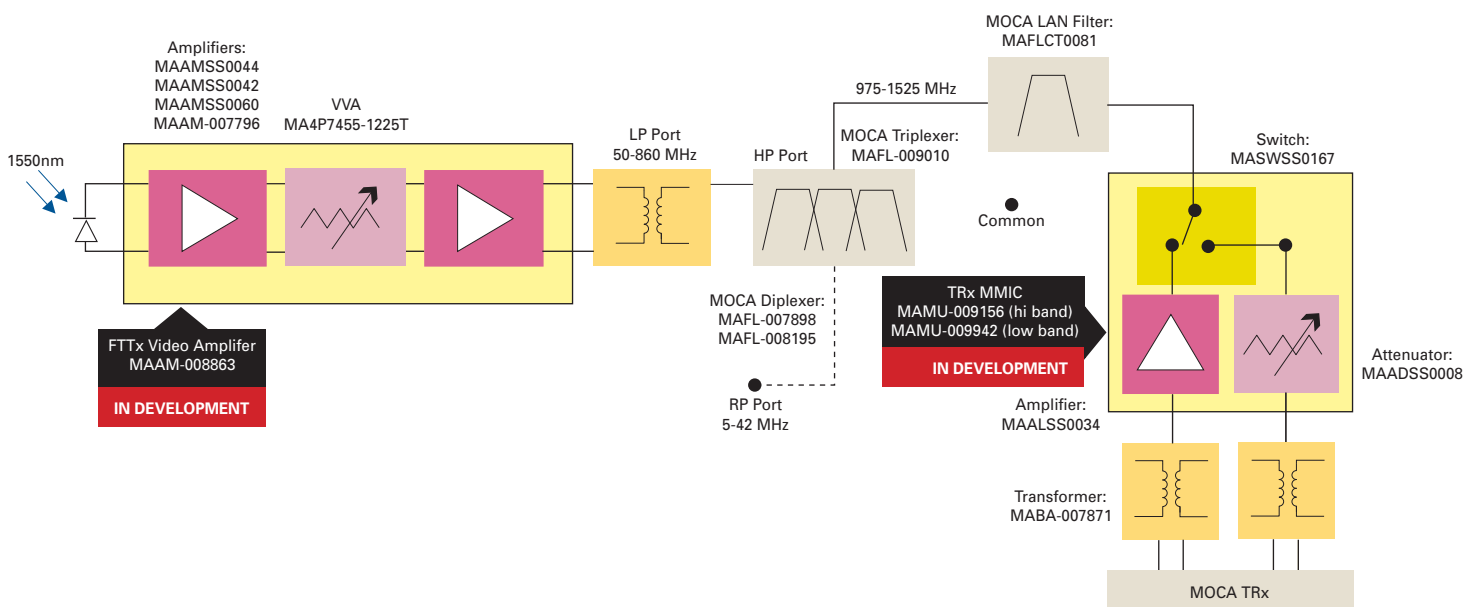
Block Diagrams : Parts for CATV/Broadband



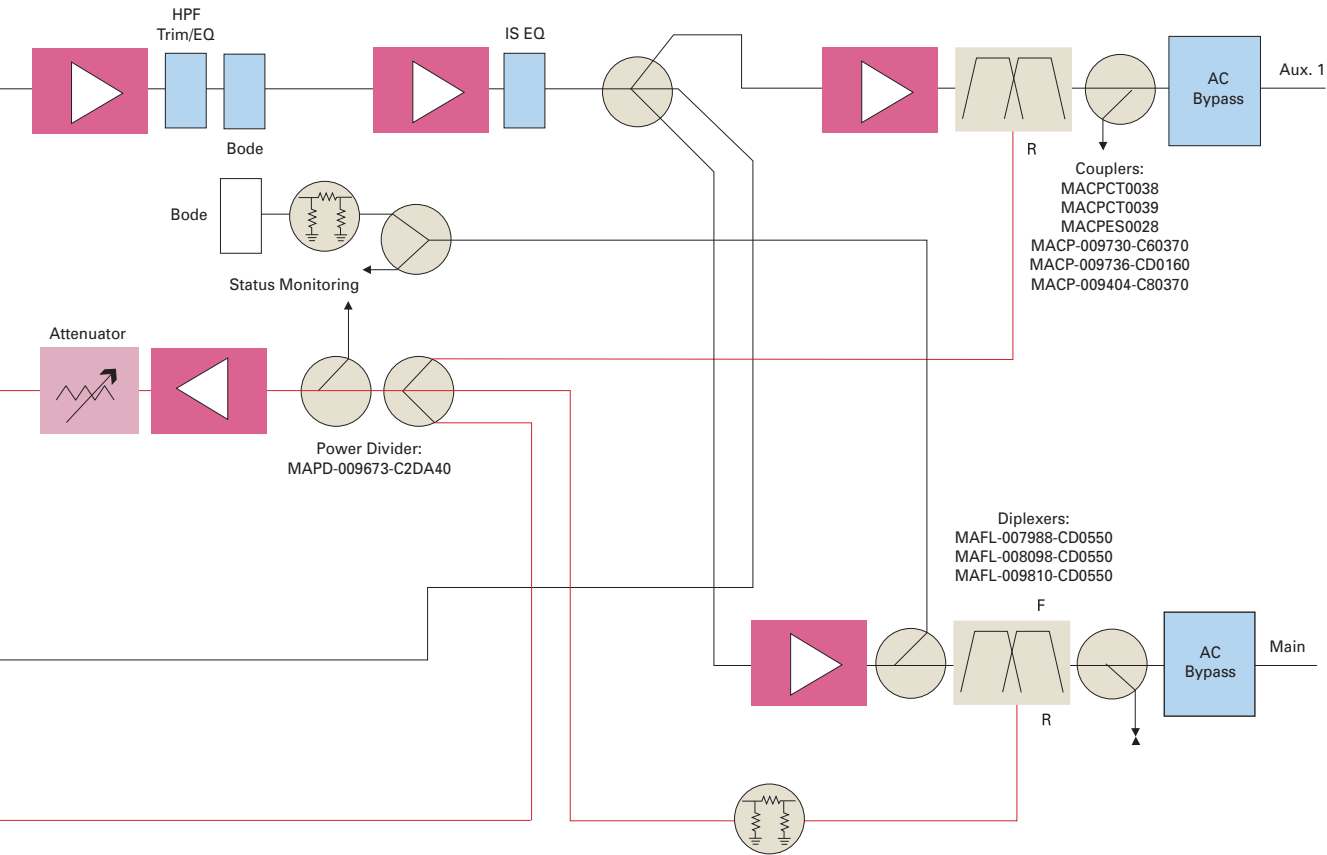
Amplifier/Optical Node



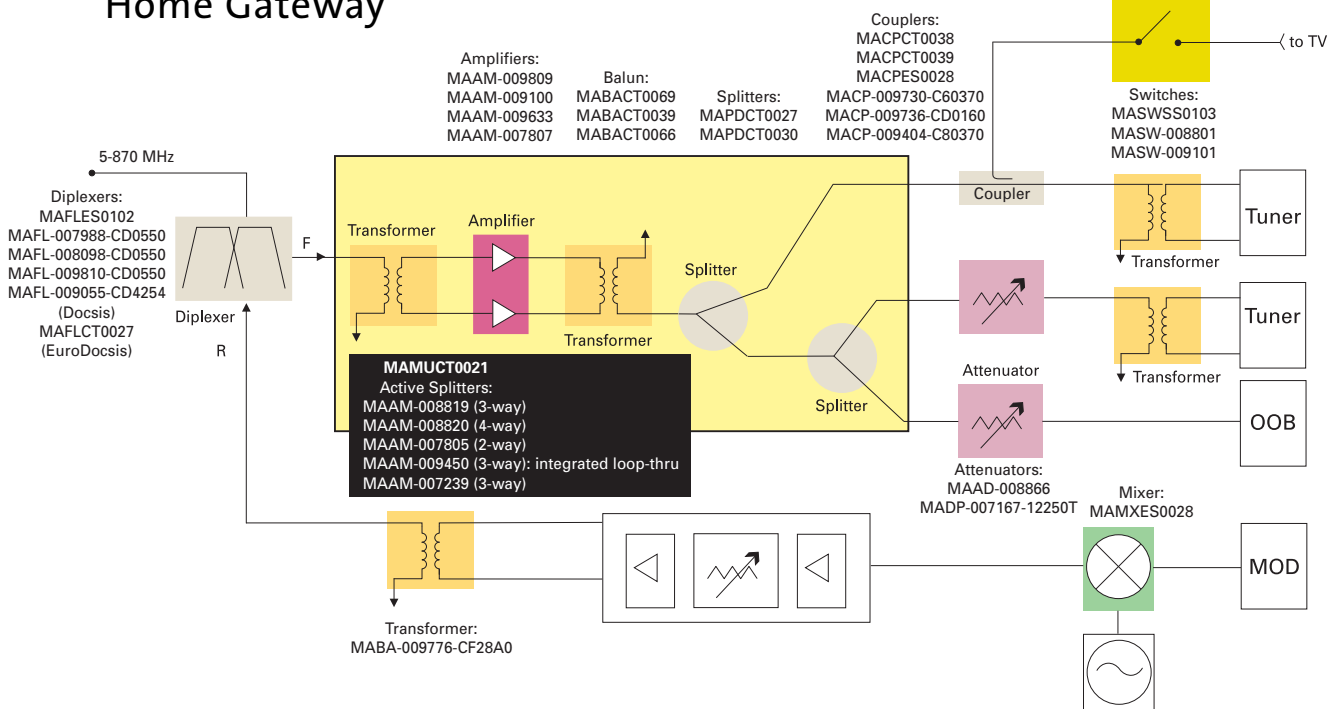
FTTx Video Amplifier with MoCA



Block Diagrams : Parts for CATV/Broadband



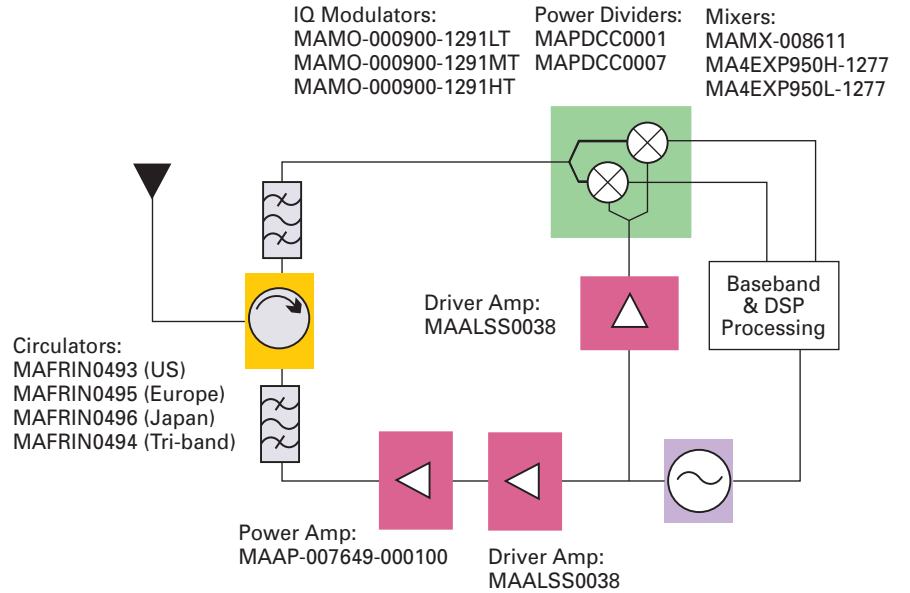
Home Gateway



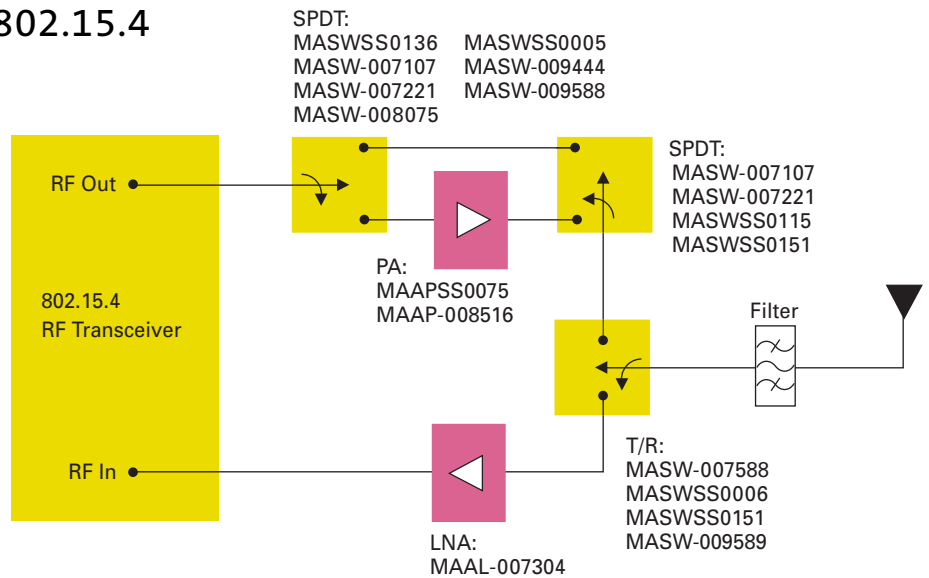
Block Diagrams : RFID and ZigBee



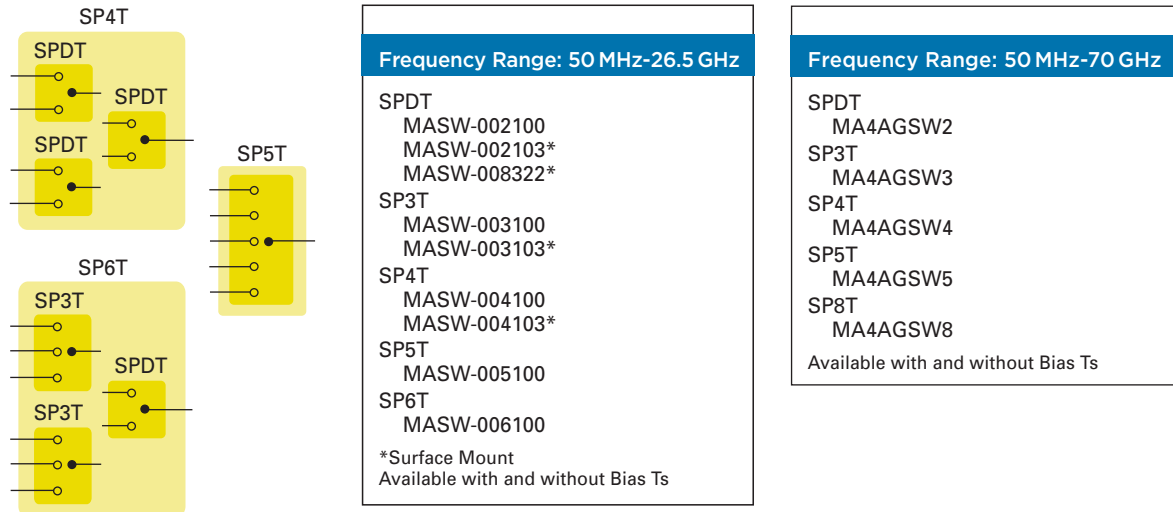
RFID Reader EPCglobal UHF Architecture



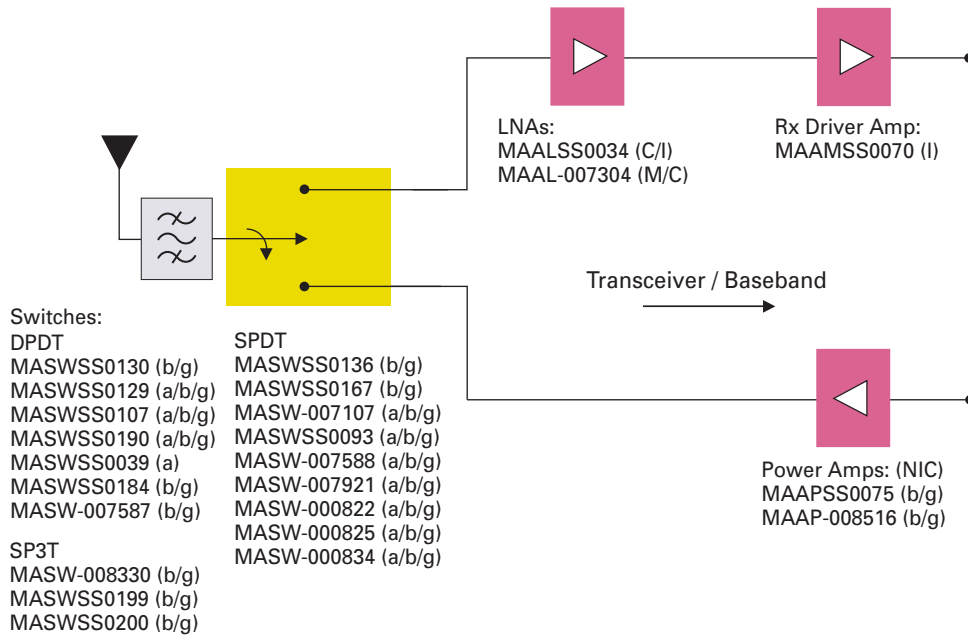
ZigBee/MESH/802.15.4



Test & Measurement Line-up

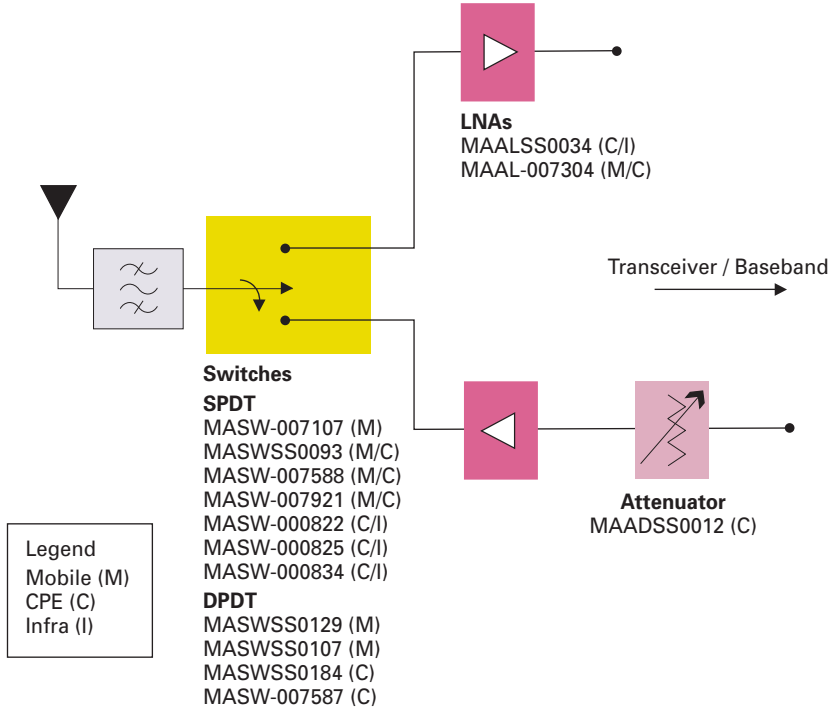


WLAN/802.11a/b/g RF Solutions

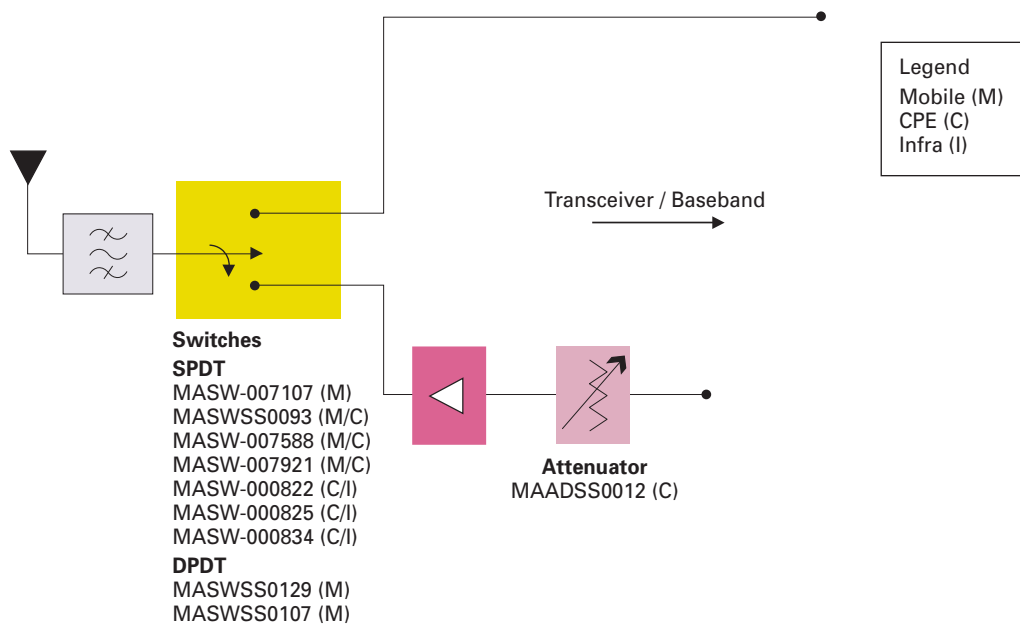


Block Diagrams : WiMAX

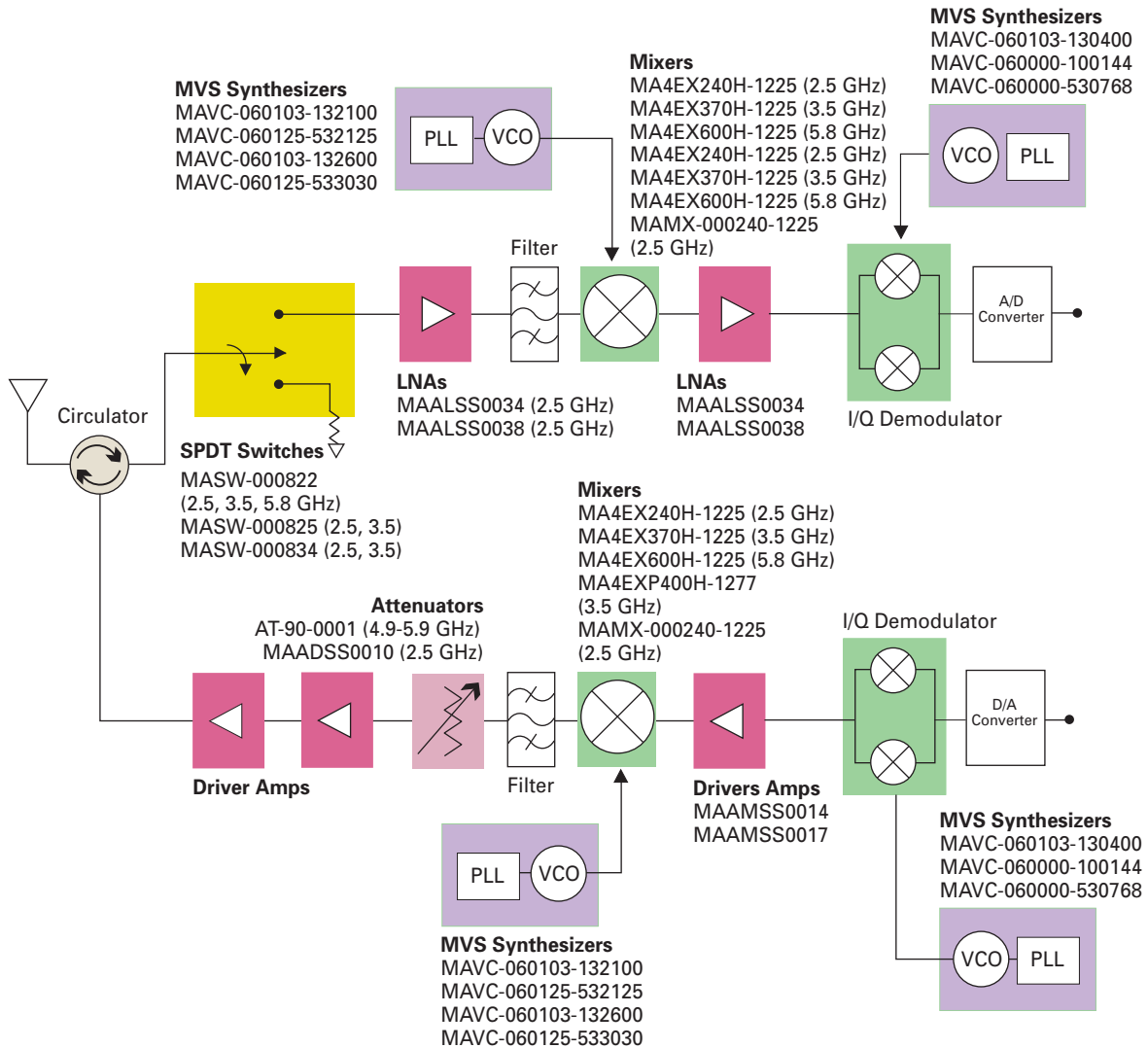
2.3–2.7 GHz and 3.3–3.8 GHz WiMAX Solutions



4.9–5.9 GHz WiMAX Solutions



WiMAX Base Station





M/A-COM Technology Solutions

amplifiers are used extensively in commercial and military electronics applications. The Company produces low noise amplifiers (LNA), power amplifiers (PA), driver amplifiers and wideband amplifiers ranging from 50 MHz to 77 GHz designed specifically for voice and data applications for the consumer and military markets.

- Cordless and mobile phones
- Infrastructure cellular base stations for
 - GSM
 - CDMA
 - PHS
 - UMTS
- Satellite radios
- Mobile GPS radios
- VSAT
- CATV and broadband
- WLAN cards and access points
- Aerospace and Defense products
- Bluetooth
- RFID



Broadband Amplifiers

Frequency (MHz)	Part Number	Gain (dB)	NF (dB)	Output PldB (dBm)	Output IP3 (dBm)	Voltage (Volts)	Current (mA)	Package
Die Products								
200 - 3000	MAAM02350	17	3.7	14	24	6	65	Die
Packaged Products								
50 - 2000	MAAM-007865-OP1R00	20	5	18.5	29.5	5	42	3 mm PQFN-12
2 - 2400	A33-1	9	4	6	19	15	19	TO-8, SMT, SMA
2 - 2400	A35-1	9	4.2	9.5	23	15	26	TO-8, SMT, SMA
100 - 2600	A36-2	15	7	14	30	15	63	TO-8, SMT, SMA
20 - 2700	MAAM-007501-SA2002	11.5	2.5	27	40	9	165	TO-8, SMT, SMA
200 - 3000	MAAM02350-A2	18	4	14	24	6	65	CR-3
100 - 3200	A43	11.5	7	8.5	21	15	45	TO-8, SMT, SMA
50 - 3300	MAAM-007866-OP1R00	27	5	22.7	36.5	5	175	3 mm PQFN-12
2000 - 12000	6884-700	27	2.7	14.2	25	15	138	SMA Connectorized

CATV Amplifiers

Frequency (MHz)	Part Number	Gain (dB)	NF (dB)	Output PldB	CTB (dBm)	CSO (dBm)	Channel Loading (dBmV/Ch)	Package
Amplifiers								
35 - 350	PAWI027 ♦	38.5	3.7	31	—	—	—	SOT115J
35 - 500	PAWI027-1 ♦	38	4.2	31	—	—	—	SOT115J
50 - 870	MAAMSS0040	12	2.8	23	-72.5	-75	135 at 25 dBmV O/P	SOIC-16
40 - 1000	MAAM-009354	20	3	—	-66	-66	132 at 44/79 at 48dBmV O/P	SOT115F
50 - 1000	MAAM-009809 (with bypass)	18	2	15	-50	-50	132 at 15 dBmV O/P	3 mm PQFN-12
50 - 1000	MAAM-009100	14.8	3	18	63	63	132 at 30 dBmV O/P	SOT-89
50 - 1000	MAAM-009633	17	1.9	23	-75	-60	132 at 30 dBmV O/P	SOT-89
50 - 1000	MAAM-009455	22	3.5	24	-75	-80	77 at 39 dBmV O/P	4 mm PQFN-20
50 - 1000	MAAM-007796-000000	21	3.8	20	-70	-70	132 at 20 dBmV O/P	4 mm PQFN-20
50 - 1000	MAAM-007807-000000	9	3.8	17	-75	-65	132 at 15 dBmV O/P	SOT-89
50 - 1000	MAAMSS0041	14.8	2.7	23	-80	-70	132 at 23 dBmV O/P	SOT-89
50 - 1000	MAAMSS0042	15	3	21	-70	-70	132 at 30 dBmV O/P	SOT-89
50 - 1000	MAAMSS0044	12.5	3.7	24	75	80	79 at 34 dBmV O/P	4 mm PQFN-20
50 - 1000	MAAMSS0060	17	1.8	23	-75	-60	132 at 30 dBmV O/P	SOT-89
50 - 1000	MAAMSS0067	12.2	3.3	24	-78	-78	135 at 13 dBmV I/P	4 mm PQFN-20
50 - 1005	MAAM-007724-000000	12.2	3.3	24	-78	-78	135 at 13 dBmV I/P	4 mm PQFN-20
50 - 2000	MAAM-007865-OP1R00	20	5	18.5	—	—	—	3 mm PQFN-12

Frequency (MHz)	Part Number	Gain (dB)	NF (dB)	Output PldB	CTB (dBm)	CSO (dBm)	Channel Loading (dBmV/Ch)	Package
Active Splitter Modules								
50 - 860	MAUCT0021 (3 splits)	8.5	3.4	24	-78	-78	+13 dBmV/channel	SMTBoard
50 - 1100	MAAM-007805 (2 splits)	8.5	4	25	-75	-60	+15 dBmV/channel	3 mm PQFN-12
50 - 1100	MAAM-008818 (2 splits)	3.6	4	21	-63	-60	+15 dBmV/channel	2 mm PDFN-8
50 - 1100	MAAM-009811 (2 splits)	2.5	4	22	-60	-60	+15 dBmV/channel	2 mm PDFN-8
50 - 1100	MAAM-009450 (3 splits)	2.5	4.5	22	-65	-60	+15 dBmV/channel	3 mm PQFN-20
50 - 1100	MAAM-007239 (3 splits)	4.6	4.5	30	-83	-70	+15 dBmV/channel	3 mm PQFN-16
50 - 1100	MAAM-008819 (3 splits)	2.5	3.8	24	-67	-65	+15dBmV/channel	2 mm PDFN-8
50 - 1100	MAAM-008820 (4 splits)	3	3.1	21	-70	-68	+15dBmV/channel	3 mm PQFN-12
950 - 2150	MAAM-008970 (2 splits)	4.5	4	25	-60	-60	+15dBmV/channel	3 mm PQFN-12

Note: Part numbers are RoHS compliant. ♦ indicates non-RoHS compliant.

Blue listings indicate standard stock items widely available from our franchised distribution partners.

Detailed specifications for our standard parts can be found quickly on our web site at www.macomtech.com by typing the part number into the search box.

All specifications are subject to change.



M/A-COM Technology Solutions

amplifiers are used extensively in commercial and military electronics applications. The Company produces low noise amplifiers (LNA), power amplifiers (PA), driver amplifiers and wideband amplifiers ranging from 50 MHz to 77 GHz designed specifically for voice and data applications for the consumer and military markets.

- Cordless and mobile phones
- Infrastructure cellular base stations for
 - GSM
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 - PHS
 - UMTS
- Satellite radios
- Mobile GPS radios
- VSAT
- CATV and broadband
- WLAN cards and access points
- Aerospace and Defense products
- Bluetooth
- RFID



Broadband Amplifiers

Frequency (MHz)	Part Number	Gain (dB)	NF (dB)	Output PldB (dBm)	Output IP3 (dBm)	Voltage (Volts)	Current (mA)	Package
Die Products								
200 - 3000	MAAM02350	17	3.7	14	24	6	65	Die
Packaged Products								
50 - 2000	MAAM-007865-OP1R00	20	5	18.5	29.5	5	42	3 mm PQFN-12
2 - 2400	A33-1	9	4	6	19	15	19	TO-8, SMT, SMA
2 - 2400	A35-1	9	4.2	9.5	23	15	26	TO-8, SMT, SMA
100 - 2600	A36-2	15	7	14	30	15	63	TO-8, SMT, SMA
20 - 2700	MAAM-007501-SA2002	11.5	2.5	27	40	9	165	TO-8, SMT, SMA
200 - 3000	MAAM02350-A2	18	4	14	24	6	65	CR-3
100 - 3200	A43	11.5	7	8.5	21	15	45	TO-8, SMT, SMA
50 - 3300	MAAM-007866-OP1R00	27	5	22.7	36.5	5	175	3 mm PQFN-12
2000 - 12000	6884-700	27	2.7	14.2	25	15	138	SMA Connectorized

CATV Amplifiers

Frequency (MHz)	Part Number	Gain (dB)	NF (dB)	Output PldB	CTB (dBm)	CSO (dBm)	Channel Loading (dBmV/Ch)	Package
Amplifiers								
35 - 350	PAWI027 ♦	38.5	3.7	31	—	—	—	SOT115J
35 - 500	PAWI027-1 ♦	38	4.2	31	—	—	—	SOT115J
50 - 870	MAAMSS0040	12	2.8	23	-72.5	-75	135 at 25 dBmV O/P	SOIC-16
40 - 1000	MAAM-009354	20	3	—	-66	-66	132 at 44/79 at 48dBmV O/P	SOT115F
50 - 1000	MAAM-009809 (with bypass)	18	2	15	-50	-50	132 at 15 dBmV O/P	3 mm PQFN-12
50 - 1000	MAAM-009100	14.8	3	18	63	63	132 at 30 dBmV O/P	SOT-89
50 - 1000	MAAM-009633	17	1.9	23	-75	-60	132 at 30 dBmV O/P	SOT-89
50 - 1000	MAAM-009455	22	3.5	24	-75	-80	77 at 39 dBmV O/P	4 mm PQFN-20
50 - 1000	MAAM-007796-000000	21	3.8	20	-70	-70	132 at 20 dBmV O/P	4 mm PQFN-20
50 - 1000	MAAM-007807-000000	9	3.8	17	-75	-65	132 at 15 dBmV O/P	SOT-89
50 - 1000	MAAMSS0041	14.8	2.7	23	-80	-70	132 at 23 dBmV O/P	SOT-89
50 - 1000	MAAMSS0042	15	3	21	-70	-70	132 at 30 dBmV O/P	SOT-89
50 - 1000	MAAMSS0044	12.5	3.7	24	75	80	79 at 34 dBmV O/P	4 mm PQFN-20
50 - 1000	MAAMSS0060	17	1.8	23	-75	-60	132 at 30 dBmV O/P	SOT-89
50 - 1000	MAAMSS0067	12.2	3.3	24	-78	-78	135 at 13 dBmV I/P	4 mm PQFN-20
50 - 1005	MAAM-007724-000000	12.2	3.3	24	-78	-78	135 at 13 dBmV I/P	4 mm PQFN-20
50 - 2000	MAAM-007865-OP1R00	20	5	18.5	—	—	—	3 mm PQFN-12

Frequency (MHz)	Part Number	Gain (dB)	NF (dB)	Output PldB	CTB (dBm)	CSO (dBm)	Channel Loading (dBmV/Ch)	Package
Active Splitter Modules								
50 - 860	MAUCT0021 (3 splits)	8.5	3.4	24	-78	-78	+13 dBmV/channel	SMTBoard
50 - 1100	MAAM-007805 (2 splits)	8.5	4	25	-75	-60	+15 dBmV/channel	3 mm PQFN-12
50 - 1100	MAAM-008818 (2 splits)	3.6	4	21	-63	-60	+15 dBmV/channel	2 mm PDFN-8
50 - 1100	MAAM-009811 (2 splits)	2.5	4	22	-60	-60	+15 dBmV/channel	2 mm PDFN-8
50 - 1100	MAAM-009450 (3 splits)	2.5	4.5	22	-65	-60	+15 dBmV/channel	3 mm PQFN-20
50 - 1100	MAAM-007239 (3 splits)	4.6	4.5	30	-83	-70	+15 dBmV/channel	3 mm PQFN-16
50 - 1100	MAAM-008819 (3 splits)	2.5	3.8	24	-67	-65	+15dBmV/channel	2 mm PDFN-8
50 - 1100	MAAM-008820 (4 splits)	3	3.1	21	-70	-68	+15dBmV/channel	3 mm PQFN-12
950 - 2150	MAAM-008970 (2 splits)	4.5	4	25	-60	-60	+15dBmV/channel	3 mm PQFN-12

Note: Part numbers are RoHS compliant. ♦ indicates non-RoHS compliant.

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All specifications are subject to change.

Driver Amplifiers

Frequency (MHz)	Part Number	Gain (dB)	NF (dB)	Output P1dB (dBm)	Output IP3 (dBm)	Voltage (Volts)	Current (mA)	Package
Packaged Products								
1700 - 2500	MAAMSS0007 ◆	13	5.5	23	40	5	100	3 mm PQFN-12
50 - 2500	MAAMSS0017 ◆	18	4.8	20	38.5	5	70	SOT-89
50 - 2500	MAAMSS0046	18	4.8	20	38.5	5	70	SOT-89
250 - 3800	MAAMSS0070	12	3.3	22	41	5	150	SOT-89

Low Noise Amplifiers

Frequency (MHz)	Part Number	Gain (dB)	NF (dB)	Output P1dB (dBm)	Output IP3 (dBm)	Voltage (Volts)	Current (mA)	Package
Die Products								
1200 - 1750	MAAM12000	26	1.25	14	24	5	80	Die
Packaged Products								
10 - 100	AM-162-PIN	12.5	1.5	15	30	15	11	TO-8-1
10 - 100	AMS-162-PIN	12.5	1.5	15	30	15	11	SF-1
5 - 200	A71	18	2.1	-2.5	10	15	9	TO-8, SMT, SMA
10 - 200	A80-1	27.3	2	16	28	15	30	TO-8, SMT, SMA
10 - 250	A231	26	1.7	10	22	5	16	TO-8, SMT, SMA
10 - 250	A70	8	1.6	8	24	15	10	TO-8, SMT, SMA
10 - 250	A70-1	8	1.8	14	28	15	15	TO-8, SMT, SMA
10 - 250	A70-2	8	2.2	19	38	15	25	TO-8, SMT, SMA
5 - 500	A1	16	2.4	-1	11	15	9	TO-8, SMT, SMA
10 - 500	A531	31.7	2	2.5	14	5	17	TO-8, SMT, SMA
5 - 500	A75	21	2.1	9	21	15	24	TO-8, SMT, SMA
10 - 500	A75-3	20.5	1.7	3	16	15	14	TO-8, SMT, SMA
20 - 500	A80	29	2.3	14.3	27	15	45	TO-8, SMT, SMA
400 - 500	MAAL-008624-000000	21	0.9	28	28	5	60	SOIC-8
400 - 500	MAALSS0025 ◆	21	0.9	16.5	28	5	60	SOIC-8
800 - 960	PA1162 ◆	27	1.8	35.5	50	12	780	Flange Mount Carrier
800 - 1000	AM50-0003 ◆	15	1.2	16.5	30	5	60	SOIC-8
800 - 1000	AM55-0016 ◆	16	1.6	—	40	2.7	—	MSOP-8 Lead
800 - 1000	MAAL-008091-000000	15	1.2	16.5	30	5	60	SOIC-8
100 - 1200	A1212	14	1.8	19	29	5	70	TO-8, SMT, SMA
5 - 1200	SMA21-1	15.5	2.4	-1	11	15	10	TO-8, SMT, SMA
1550 - 1600	AM50-0002 ◆	27	1.15	1	13	5	20	SOIC-8
1550 - 1600	MAALSS0042	27	1.15	1	13	5	20	SOIC-8
1500 - 1600	MAALSS0044	21	1.55	6	19	5	8	SOIC-8
1500 - 1600	MAAM12021 ◆	21	1.55	6	19	5	8	SOIC-8
1200 - 1750	MAAM12000-A1	26	1.35	14	24	5	80	CR-3, CR-10
100 - 2000	A32	13	2.1	22	32	15	92	TO-8, SMT, SMA
1800 - 2000	PA2001 ◆	21	2	30.3	46.5	12	345	Flange Mount Carrier
1400 - 2000	AM50-0004 ◆	14	1.4	16	29	5	45	SOIC-8
1400 - 2000	AM50-0006 ◆	18	1.6	1	12	3	6.5	SOT-26

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Low Noise Amplifiers (continued)

Frequency (MHz)	Part Number	Gain (dB)	NF (dB)	Output P1dB (dBm)	Output IP3 (dBm)	Voltage (Volts)	Current (mA)	Package
Packaged Products								
1400 - 2000	MAALSS0048	18	1.6	1	13	3	6.5	SOT-26
1700 - 2000	MAAL-007673-000000	20	1.65	7	19	5	8	SOIC-8
1700 - 2000	MAAM12031 ◆	20	1.65	7	19	5	8	SOIC-8
1400 - 2000	MAAMSS0045	14	1.4	16	29	5	45	SOIC-8
500 - 3000	MAAL-007304-000000	25.5	.7	7	19	3	11.5	SOT-26
70 - 3000	MAALSS0034	12	1.6	23	36	5	88	SOT-89
70 - 3000	MAALSS0038 ◆	12	1.5	21	32	5	87	SC-70
1000 - 4000	A4011	15.5	2	18.3	29	5	65	TO-8, SMT, SMA
2000 - 6000	A6011	14.8	1.5	18	30	5	58	TO-8, SMT, SMA

Power Amplifiers

Frequency (MHz)	Part Number	Gain (dB)	NF (dB)	Output P1dB (dBm)	Output IP3 (dBm)	Voltage (Volts)	Current (mA)	Package
Packaged Products								
5 - 100	A101	17	3	23	36	12	105	TO-8, SMT, SMA
35 - 350	PAW1027	38.5	3.7	31	43	24	300	SOT115J
100 - 400	AM55-0024	22.5	4	17.5	30	5	400	8 mm PBGA
10 - 500	PA511	12.7	4.6	24.8	40	15	118	TO-8, SMT, SMA
10 - 500	PA512	18	5.2	27.5	40	15	200	TO-8, SMT, SMA
35 - 500	PAW1027-1	38	4.2	31	43	24	300	SOT115J
800 - 960	PA1162	27	1.8	35.5	50	12	780	Flange Mount Carrier
10 - 1000	SMRA69	25	4.5	23	34	15	130	TO-8B, SMT, SMA
800 - 1000	MAAP-007649-000100	19	—	34	49	7.5	540	4 mm PQFN-16
1435 - 1525	AM42-0054	26	—	—	—	—	—	R380
1710 - 1910	AM40-0023	11	0.9	-13	—	—	—	CR-5
1880 - 1930	MAAP-000082-000000	36	—	26.5	23	3	280	3 mm PQFN-12
1880 - 1930	MAAPSS0071	26	—	26	36	2.4	400	3 mm PQFN-12
1880 - 1930	MAAPSS0076	25	—	25.5	36.5	2.4	320	3 mm PQFN-12
1800 - 2000	PA1132	21	2.5	33.5	48	12	495	Flange Mount Carrier
1800 - 2000	PA2003 ◆	21	2.5	33.5	49	12	495	Flange Mount Carrier
1800 - 2000	AM55-0004	24	—	24	—	—	—	SSOP-28
200 - 2000	PA2010	10	5	25.5	33	15	179	TO-8, SMT, SMA
200 - 2000	PA38	10	4	23	34	15	150	TO-8, SMT, SMA
1800 - 2000	PA2001 ◆	21	2	30.3	46.5	12	345	Flange Mount Carrier
2200 - 2400	AM42-0055	29	—	—	—	—	—	R380
2400 - 2500	MAAPSS0066	27	—	25	35	2.4	400	3 mm PQFN-12
2400 - 2500	MAAPSS0075	29.5	—	26.5	52	3.3	185	3 mm PQFN-12
2400 - 2500	MAAP-008516	30	—	23	—	3.3	80	2.5 x 2 mm PQFN-14
200 - 2600	PA38-2	8.5	4.5	23.5	33	15	150	TO-8, SMT, SMA
20 - 2700	MAAM-007501-SA2002	11.5	2.5	27	40	9	165	TO-8, SMT, SMA
1000 - 4000	PA48	16	5.5	24	34	15	225	TO-8B, SMT, SMA
14000 - 14500	AM42-0002	22	—	29.5	39	9	800	CR-15
14000 - 14500	AM42-0007	22	—	32	41	9	1000	CR-15

General Amplifiers

Frequency (MHz)	Part Number	Gain (dB)	NF (dB)	Output P1dB (dBm)	Output IP3 (dBm)	Voltage (Volts)	Current (mA)	Package
Packaged Products								
5 - 100	A101	17	3	23	36	12	105	TO-8, SMT, SMA
10 - 100	AM-162-PIN	12.5	1.5	15	30	15	11	TO-8-1, CONN
10 - 100	AMS-162-PIN	12.5	1.5	15	30	15	11	SF-1
15 - 100	AM05-0005	15	5	23	37	—	—	LGA-1
15 - 100	AM05-0006	10.6	5	23	40	—	—	LGA-1
5 - 200	A71	18	2.1	-2.5	10	15	9	TO-8, SMT, SMA
10 - 200	A80-1	27.3	2	16	28	15	30	TO-8, SMT, SMA
5 - 250	A74-1	31	4.5	8.5	21	15	40	TO-8, SMT, SMA
5 - 250	A75-2	21	4.2	8	19	15	24	TO-8, SMT, SMA
5 - 250	EA54	27	3.8	5	16	5	30	TO-5
10 - 250	A83-1	35.5	2.5	-1.5	9	15	31	TO-8, SMT, SMA
10 - 250	A181	16.5	3.8	22	35	15	95	TO-8, SMT, SMA
10 - 250	A231	26	1.7	10	22	5	16	TO-8, SMT, SMA
10 - 250	A70	8	1.6	8	24	15	10	TO-8, SMT, SMA
10 - 250	A70-1	8	1.8	14	28	15	15	TO-8, SMT, SMA
10 - 250	A70-2	8	2.2	19	38	15	25	TO-8, SMT, SMA
20 - 250	A70-3	8	2.8	21	40	15	37	TO-8, SMT, SMA
20 - 250	A81	25.5	3	17	28	15	35	TO-8, SMT, SMA
20 - 250	A81-1	25	2.5	13.5	27	15	25	TO-8, SMT, SMA
20 - 250	A82	25	2.8	20	31	15	50	TO-8, SMT, SMA
20 - 250	A82-1	19	2.8	15	26	15	50	TO-8, SMT, SMA
30 - 250	AM-119-PIN	8	2.5	21	35	15	50	TO-8-1, CONN
5 - 300	A78	14	3.5	19.5	35	15	65	TO-8, SMT, SMA
5 - 300	A79	14	4	22	38	15	88	TO-8, SMT, SMA
10 - 300	A87-2	16	2.9	11	24	5	15	TO-8, SMT, SMA
35 - 350	PAW1027 ◆	38.5	3.7	31	43	24	300	SOT115J
5 - 400	A56	26	5.5	13.5	27	15	69	TO-8, SMT, SMA
5 - 400	EA1	14	4.3	-4.5	13	15	10	TO-5
5 - 400	EA2	13.5	5.7	9	21	15	27	TO-5
10 - 400	A411	15.8	3	10	24	5	16	TO-8, SMT, SMA
10 - 400	A87	14	3.8	17.5	33	15	33	TO-8, SMT, SMA
10 - 400	A87-1	16	3.4	17	31	15	30	TO-8, SMT, SMA
10 - 400	MAAM-008199-000A51	15	2.7	-3.5	10	15	7	TO-8, SMT, SMA
5 - 500	A5	14.8	4.5	8.5	22	15	25	TO-8, SMT, SMA
5 - 500	A514	28	4	19	32	15	96	TO-8, SMT, SMA
5 - 500	A515	27.5	3.5	22	33	15	127	TO-8, SMT, SMA
5 - 500	A54	15.5	4	9	21	15	34	TO-8, SMT, SMA
5 - 500	A5-5	15.5	4	9	21	15	24	TO-8, SMT, SMA
5 - 500	A58	11.5	4	19	34	15	65	TO-8, SMT, SMA
5 - 500	A59	11.5	4.3	22	36	15	88	TO-8, SMT, SMA
5 - 500	A72	15	3.3	12.5	26	15	30	TO-8, SMT, SMA
5 - 500	A73	32	3.5	1.5	15	15	20	TO-8, SMT, SMA
5 - 500	A74	30	3	8.5	20	15	40	TO-8, SMT, SMA
5 - 500	A74-2	26	3.8	-1	10	5	13	TO-8, SMT, SMA
5 - 500	A76	28	3	14.7	28	15	62	TO-8, SMT, SMA
5 - 500	A76-1	27.5	3	12.7	26	5	47	TO-8, SMT, SMA
5 - 500	A77	16.5	4.5	16.5	30	15	50	TO-8, SMT, SMA
5 - 500	A88	18.7	6.5	20.5	30	15	79	TO-8, SMT, SMA

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General Amplifiers (continued)

Frequency (MHz)	Part Number	Gain (dB)	NF (dB)	Output P1dB (dBm)	Output IP3 (dBm)	Voltage (Volts)	Current (mA)	Package
Packaged Products								
5 - 500	AM-123-PIN	10	5.5	18	30	15	62	FP-9, CONN
5 - 500	AM-131-PIN	10	5	19	35	15	65	TO-8-1
5 - 500	AM-143-PIN	15.8	2.5	6	20	15	13	TO-8-1, CONN
5 - 500	AM-147-PIN	17	3.4	20	32	15	52	TO-8-1, CONN
5 - 500	AM-151-PIN	12	4.3	22	36	15	88	TO-8-1, CONN
5 - 500	EA53-2	19	3.6	11	24	15	33	TO-5
5 - 500	EA54-2	29.5	4.5	9.5	20	15	55	TO-5
5 - 500	A1	16	2.4	-1	11	15	9	TO-8, SMT, SMA
5 - 500	A75	21	2.1	9	21	15	24	TO-8, SMT, SMA
5 - 500	RA89	26.5	3.7	21.5	35	15	130	TO-8B, SMT, SMA
5 - 500	MAAM-009503-AM147A	17	3.5	21	35	15	52	TO-8-1
10 - 500	A180	16.5	3.4	18	33	15	63	TO-8, SMT, SMA
10 - 500	A511	17	3.4	20	32	15	52	TO-8, SMT, SMA
10 - 500	A513	20	5.5	18	30	12	120	TO-8, SMT, SMA
10 - 500	A53	15	3	3.5	16	15	12	TO-8, SMT, SMA
10 - 500	A55	14.7	5	11	24	15	30	TO-8, SMT, SMA
10 - 500	A57	14.7	4.8	14	28	15	44	TO-8, SMT, SMA
10 - 500	AM-146-PIN	21	4.5	22	35	15	130	FP-9, CONN
10 - 500	MAAM-008200-000A83	30	3	-1	10	5	13	TO-8, SMT, SMA
10 - 500	A531	31.7	2	2.5	14	5	17	TO-8, SMT, SMA
10 - 500	A75-3	20.5	1.7	3	16	15	14	TO-8, SMT, SMA
10 - 500	PA511	12.7	4.6	24.8	40	15	118	TO-8, SMT, SMA
10 - 500	PA512	18	5.2	27.5	40	15	200	TO-8, SMT, SMA
10 - 500	RA89-1	30	3.2	21.5	36	15	130	TO-8B, SMT, SMA
20 - 500	A81-2	24.5	3	15	28	15	29	TO-8, SMT, SMA
20 - 500	A81-3	17	4	8	20	15	29	TO-8, SMT, SMA
20 - 500	A80	29	2.3	14.3	27	15	45	TO-8, SMT, SMA
20 - 500	SMA80	29	2.3	14.3	27	15	45	TO-8, SMT, SMA
35 - 500	PAW1027-1	38	4.2	31	43	24	300	SOT115J
5 - 600	A77-1	16	5	16.5	30	15	50	TO-8, SMT, SMA
6 - 600	A5-6	16	4.5	8.5	21	15	24	TO-8, SMT, SMA
10 - 600	A67-1	15	3.7	17	30	15	36	TO-8, SMT, SMA
10 - 600	CA67-1	15	3.7	17	30	15	36	TO-8, SMT, SMA
100 - 600	AM-160-PIN	28.2	2.5	19	30	15	70	FP-9
100 - 600	AM-191-PIN	23.5	3	22	32	15	77	FP-2
5 - 700	A611	15	3.2	12.5	24	5	31	TO-8, SMT, SMA
10 - 700	A59-1	10.5	6	22	36	15	88	TO-8, SMT, SMA
10 - 800	A67	14	4	16	30	15	32	TO-8, SMT, SMA
100 - 800	A89	22	4.5	17.5	30	15	42	TO-8, SMT, SMA
800 - 960	PA1162 ♦	27	1.8	35.5	50	12	780	Flange Mount Carrier
5 - 1000	A11	14.7	3.1	-2	10	15	9	TO-8, SMT, SMA
5 - 1000	A11-2	16	2.5	-1	10	15	9	TO-8, SMT, SMA
5 - 1000	A63	16	3	4	15	15	14	TO-8, SMT, SMA
5 - 1000	AM-176-PIN	13.2	4	13	27	15	38	TO-8-1
5 - 1000	AM-182-PIN	28.2	3.5	10	20	15	44	TO-8-1
10 - 1000	A1021	26	3.8	14.5	26	5	60	TO-8, SMT, SMA
10 - 1000	A1031	28.5	2.7	10	22	5	36	TO-8, SMT, SMA
10 - 1000	A12	16	2.8	8	22	15	22	TO-8, SMT, SMA

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General Amplifiers (continued)

Frequency (MHz)	Part Number	Gain (dB)	NF (dB)	Output P1dB (dBm)	Output IP3 (dBm)	Voltage (Volts)	Current (mA)	Package
Packaged Products								
110 - 1000	A17	12	6	15.3	27	15	44	TO-8, SMT, SMA
10 - 1000	A18-1	14.7	3.8	16	30	15	44	TO-8, SMT, SMA
0 - 1000	A19-1	11.5	5.5	22.5	35	15	90	TO-8, SMT, SMA
10 - 1000	A66-1	27.5	2.9	15	28	15	66	TO-8, SMT, SMA
10 - 1000	A66-3	26	3	3	13	5	16	TO-8, SMT, SMA
10 - 1000	AM-145-PIN	10.7	3	18	32	15	50	TO-8-1, CONN
10 - 1000	AM-177-PIN	12	6.5	22	35	15	105	TO-8-1
10 - 1000	AM-183-PIN	28.5	4	14	23	15	72	TO-8-1, CONN
10 - 1000	RA66	37	3.5	15.5	30	15	81	TO-8B, SMT, SMA
10 - 1000	RA69	25	4.5	23	34	15	130	TO-8B, SMT, SMA
800 - 1000	MAAP-007649-000100	19	—	34	49	7.5	540	4 mm PQFN-16
5 - 1200	A21-1	15.5	2.4	-1	11	15	10	TO-8, SMT, SMA
10 - 1200	A1211	14	2.8	6	20	5	15.5	TO-8, SMT, SMA
10 - 1200	A64	26	3.4	8	20	15	35	TO-8, SMT, SMA
10 - 1200	A66	23.5	4	15	28	15	64	TO-8, SMT, SMA
10 - 1200	MAAM-008198-00A162	13	3.5	6	18	5	15	TO-8, SMT, SMA
100 - 1200	A1212	14	1.8	19	29	5	70	TO-8, SMT, SMA
2 - 1500	A25-1	13.5	3	9	22	15	25	TO-8, SMT, SMA
5 - 1500	A24	20	4.2	8	21	15	34	TO-8, SMT, SMA
5 - 1500	A25	10	6	9	21	15	24	TO-8, SMT, SMA
10 - 1500	A26	20.5	5	16	27	15	64	TO-8, SMT, SMA
10 - 1500	A27	8.5	7.5	15.5	28	15	50	TO-8, SMT, SMA
10 - 1500	A28	11	6	15	29	15	45	TO-8, SMT, SMA
10 - 1500	A28-2	14	3.5	10.5	24	5	27	TO-8, SMT, SMA
10 - 1500	A29-1	9	5.5	22	32	15	90	TO-8, SMT, SMA
300 - 1800	AM-153-PIN	12.4	2.5	7.5	17	15	13	TO-8-1
300 - 1800	AM-155-PIN	12.3	3.5	20	30	15	50	TO-8-1, CONN
10 - 2000	A31-1	11.5	3.5	-2	9	15	9	TO-8, SMT, SMA
10 - 2000	A33	9.5	4.5	3	15	15	14	TO-8, SMT, SMA
10 - 2000	A35	10	5	9	21	15	24	TO-8, SMT, SMA
10 - 2000	A37	10	6.8	15	28	15	47	TO-8, SMT, SMA
10 - 2000	A38	9.5	6.5	19	30	15	65	TO-8, SMT, SMA
10 - 2000	A39	7.5	8.5	22	34	15	90	TO-8, SMT, SMA
10 - 2000	AM-180-PIN	9.7	6	14.5	2.8	15	45	TO-8-1, CONN
10 - 2000	AM-184-PIN	20.0	5	11	21	15	52	TO-8-1, CONN
50 - 2000	MAAM-007865-0P1R00	20	5	18.5	29.5	5	42	3 mm PQFN-12
100 - 2000	A32-1	11.5	2.5	15.5	25	5	44	TO-8, SMT, SMA
100 - 2000	A34	16	5.5	7	18	15	35	TO-8, SMT, SMA
100 - 2000	A36	16.5	5.5	12	23	15	63	TO-8, SMT, SMA
100 - 2000	A32	13	2.1	22	32	15	92	TO-8, SMT, SMA
100 - 2000	RA36	24	5.5	13	22	15	76	TO-8B, SMT, SMA
200 - 2000	PA2010	10	5	25.5	33	15	179	TO-8, SMT, SMA
200 - 2000	PA38	10	4	23	34	15	150	TO-8, SMT, SMA
1800 - 2000	PA1132 ♦	21	2.5	33.5	48	12	495	Flange Mount Carrier

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General Amplifiers (continued)

Frequency (MHz)	Part Number	Gain (dB)	NF (dB)	Output P1dB (dBm)	Output IP3 (dBm)	Voltage (Volts)	Current (mA)	Package
Packaged Products								
1800 - 2000	PA2003 ◆	21	2.5	33.5	49	12	495	Flange Mount Carrier
1800 - 2000	PA2001 ◆	21	2	30.3	46.5	12	345	Flange Mount Carrier
100 - 2300	A36-1	16.2	6	12	23	15	63	TO-8, SMT, SMA
2 - 2400	A33-1	9	4	6	19	15	19	TO-8, SMT, SMA
2 - 2400	A35-1	9	4.2	9.5	23	15	26	TO-8, SMT, SMA
0.01 - 2500	A3010	9.5	4.5	19	35	12	160	TO-8, SMA
100 - 2600	A36-2	15	7	14	30	15	63	TO-8, SMT, SMA
200 - 2600	PA38-2	8.5	4.5	23.5	33	15	150	TO-8, SMT, SMA
20 - 2700	MAAM-007501-SA2002	11.5	2.5	27	40	9	165	TO-8, SMT, SMA
50 - 3300	MAAM-007866-OP1R00	27	5	22.7	36.5	5	175	3 mm PQFN-12
1000 - 4000	A4012	18	3.5	15.5	26	5	65	TO-8, SMT, SMA
1000 - 4000	A45	17.5	4	19.5	29	15	120	TO-8, SMT, SMA
1000 - 4000	A45-1	17.5	4	13	26	5	65	TO-8, SMT, SMA
1000 - 4000	A4011	15.5	2	18.3	29	5	65	TO-8, SMT, SMA
1000 - 4000	PA48	16	5.5	24	34	15	225	TO-8B, SMT, SMA
1000 - 4000	RA46	25.5	4.5	19	30	12	175	TO-8B, SMT, SMA
2000 - 6000	A61	7.5	3.2	12.5	25	5	35	TO-8, SMT, SMA
2000 - 6000	A6011	14.8	1.5	18	30	5	58	TO-8, SMT, SMA
2000 - 6000	RA62	16	4	13	28	15	65	TO-8B, SMT, SMA
2000 - 6000	RA63-1	22	5.5	16	32	5	120	TO-8B, SMT, SMA
2000 - 12000	6884-700	27	2.7	14.2	25	15	138	SMA Connectorized

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Attenuators



M/A-COM Technology Solutions

attenuators are used in various applications for automotive and wireless markets. There are serial and parallel logic controlled digital attenuators and voltage variable analog attenuators (VVAs) that range from DC to 6 GHz.

- Cellular infrastructure
- Handset gain control
- Radar systems
- Satellite radios
- Test equipment



Voltage Variable Attenuators

Frequency (MHz)	Part Number	I.L. (dB)	Attenuator Range (dB)	Input IP3 (dBm)	Voltage (Volts)	Current (mA)	Package
Packaged Products							
0 - 2000	AT-250 ◆	3.2	12	36	-4	0.020	SOIC-8
0 - 2000	MAAV-007941	3.2	12	36	-4	0.020	SOIC-8
0 - 2000	AT-259 ◆	3.2	12	36	-4	0.020	SOT-143
0 - 2000	MAAVSS0005	3.2	12	36	-4	0.020	SOT-143
0 - 2000	AT-635 ◆	7.2	35	36	-4	0.020	SOIC-14
0 - 2000	MAAVSS0004	7.2	35	36	-4	0.020	SOIC-14
0 - 2500	AT-255 ◆	3.6	25	36	-3	0.025	SOT-25
0 - 2000	MAAVSS0006	3.6	25	36	-3	0.025	SOT-25
5 - 2000	G1*	2.5	25	—	+15	15	TO-8, SMT, SMA
5 - 2000	G2	2.6	23	—	+5	15	TO-8, SMT, SMA
5 - 3000	MA4P274-1225T ◆	1	30	43	—	—	SOT-25
5 - 3000	MA4P7455-1225T	1	30	43	—	—	SOT-25
5 - 3000	MA4P290-1225T ◆	2.8	25	50	—	—	SOT-25
5 - 3000	MADP-007167-12250T	2.8	25	50	—	—	SOT-25
50 - 1000	MAAV-007088-000100	2.8	42	34	—	—	SOW-16
100 - 2000	G30**	2.5	35	—	+15	10	TO-8, SMT, SMA
500 - 2000	AT-109 ◆	2.5	35	25	+5	0.050	SOIC-8
500 - 2000	AT-110 ◆	2.8	30	28	+5	0.300	SOIC-8
500 - 2000	AT-110-2 ◆	2.8	39	28	+5	0.300	SOIC-8
500 - 2000	MAAVSS0008	2.8	39	28	+5	0.300	SOIC-8
500 - 2000	AT-113 ◆	2.7	40	28	+3	0.050	SOIC-8
500 - 2000	MAAV-008022	2.7	40	28	+3	0.050	SOIC-8
500 - 3000	AT-108 ◆	2.5	40	28	+5	0.050	SOIC-8
500 - 3000	MAAVSS0007	2.5	40	32	+5	0.050	SOIC-8
500 - 4000	G40	2.5	25	—	+15	12	TO-8, SMT, SMA
600 - 1200	MA4VAT904-1061T	1	24	49	—	—	SOIC-8
600 - 1200	MA4VAT907-1061T	1	24	49	—	—	SOIC-8
600 - 2000	MA4VAT900-1277T	1	24	40	—	—	3 mm PQFN
800 - 1000	MAAV-007089-000100	4.2	35	35	—	30	SOW-16
800 - 1000	MAAV-007092-000100	3.6	38	40	—	30	CSP-8
824 - 960	AT65-0009 ◆	1.7	25	40	—	—	SOT-25
1200 - 2500	MA4VAT2000-1277T	1.2	25	21	—	—	3 mm PQFN
1500 - 2500	MA4VAT2004-1061T	1.4	24	49	—	—	SOIC-8
1500 - 2500	MA4VAT2007-1061T	1.4	24	52	—	—	SOIC-8
1700 - 2000	MAAV-007090-000100	3.5	35	31	—	—	SOW-16
1700 - 2200	MAAV-007091-000100	2.9	33	31	—	30	CSP-8
1800 - 2500	AT-119 ◆	2.4	42	32	+2.25	0.050	SOT-25
1800 - 2500	MAAVSS0001	2.4	42	32	+2.25	0.050	SOT-25

*LG1 Linearizer is compatible with the G1 Attenuator. Yields linear attenuation (dB) for linear control voltage. Available in TO-8, SMT, SMA

**LG30 Linearizer is compatible with the G30 Attenuator. Yields linear attenuation (dB) for linear control voltage. Available in TO-8, SMT, SMA

Note: Part numbers are RoHS compliant. ◆ indicates non-RoHS compliant.

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All specifications are subject to change.

Digital Attenuators

Frequency (MHz)	Part Number	I.L. (dB)	Step Size (dB)	Attenuator Range (dB)	Input IP3 (dBm)	Package
Die Products						
0 - 2000	MADA2030G ◆	1.9	0.5	15.5	45	Die
Packaged Products						
0 - 2000	AT-210 ◆	1.5	1	15	50	SOIC-16
0 - 2000	MAATSS0015	1.5	1	15	50	SOIC-16
0 - 2000	AT-220 ◆	1.6	2	30	50	SOIC-16
0 - 2000	MAADSS0009	1.6	2	30	50	SOIC-16
0 - 2000	AT-230 ◆	1.6	4	28	50	SOIC-14
0 - 2000	AT-232	2.5	2	30	50	CR-6
0 - 2000	AT-260 ◆	1.9	1	31	50	SSOP-20
0 - 2000	MAATSS0020	1.9	1	31	50	SSOP-20
0 - 2000	AT-266 ◆	0.3	10	10	50	SOT-25
0 - 2000	MAATSS0018	0.3	10	10	50	SOT-25
0 - 2000	AT-267 ◆	0.3	15	15	50	SOT-25
0 - 2000	MAADSS0008	0.3	15	15	50	SOT-25
0 - 2000	AT-280 ◆	1.5	0.5	15.5	45	SOIC-16
0 - 2000	MAATSS0021	1.5	0.5	15.5	45	SOIC-16
0 - 2000	AT-357 ◆	6.5	1	31	47	C-46
0 - 2000	AT15-0001	7.3	1	31	40	Ceramic
0 - 3000	AT-213	2.5	1	15	50	CR-11
20 - 2000	AT-358 ◆	2.7	10	10	35	TO-8-2
400 - 2500	MAATSS0001 ◆	1.9	0.5	15.5	46	QSOP-16 (SSOP-16)
400 - 2500	MAATSS00017	1.9	0.5	15.5	46	QSOP-16 (SSOP-16)
400 - 2500	MAATSS0002 ◆	1.8	1	31	43	QSOP-16 (SSOP-16)
400 - 2500	MAADSS0010	1.8	1	31	43	QSOP-16 (SSOP-16)
500 - 2000	AT-264 ◆	2.2	2	30	47	TSSOP-16
500 - 2000	MAATSS0016	2.2	2	30	47	TSSOP-16
500 - 2500	MAATSS0022	1.75	0.5	15.5	46	MSOP-10
500 - 4000	MAATSS0019	1.6	1	15	47	TSSOP-16
500 - 4000	MAADSS0013	1.0	—	15	42	3 mm PQFN-16
500 - 4000	MAADSS0014	1.3	—	30	42	3 mm PQFN-16
500 - 4000	MAADSS0016	1.4	—	31	42	3 mm PQFN-16
2000 - 6000	MAADSS0012	0.75	—	21	42	2 mm PDFN-8
2000 - 6000	MAADSS0018	2.0	—	15.5	42	3 mm PQFN-16
2000 - 6000	MAADSS0019	1.3	—	15	42	3 mm PQFN-16
Attenuators with Drivers						
0 - 2000	AT-106	4.6	1	50	46	CR-13
0 - 2000	AT-107	4	0.5	31.5	48	CR-13
0 - 2000	AT-233	2.8	2	30	50	CR-12
0 - 2000	AT-263	3	1	31	48	CR-12
0 - 2000	AT-273	1.9	16	32	48	CR-11
0 - 2000	AT-283	2.9	0.5	15.5	47	CR-12
0 - 2000	AT20-0106	4.6	1	50	46	CR-13
0 - 2000	AT20-0107	3.8	0.5	31.5	48	CR-13
0 - 2000	AT20-0263	3	1	31	48	CR-12
0 - 2000	AT20-0273	1.9	16	32	48	CR-11
0 - 2000	MAAD-007086-000100	4.7	1	50	48	SOW-24
0 - 2000	MAATCC0005	4.2	0.5	31.5	48	SOW-24
0 - 2000	MAATCC0007	3.2	1	31	48	SOW-16

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Digital Attenuators (continued)

Frequency (MHz)	Part Number	I.L. (dB)	Step Size (dB)	Attenuator Range (dB)	Input IP3 (dBm)	Package
Attenuators with Drivers						
0 - 2000	MAAD-007084-000100	3	0.5	15.5	48	SOW-16
0 - 2400	MAAD-007082-000100	6	1	50	48	CSP-1
0 - 2400	MAAD-007080-000100	6	1	50	48	CSP-1
0 - 2500	MAATCC0012	2.7	2	30	48	CSP-1
0 - 2500	MAAD-007079-000100	2.7	2	30	48	CSP-1
0 - 3000	MAAD-007085-000100	2.8	1	15	50	SOW-16
0 - 3000	MAATCC0006	3.1	2	30	50	SO-16
0 - 3000	MAATCC0008	1.7	1	15	50	SO-16
0 - 3000	MAATCC0010	4	1	31	48	CSP-1
0 - 3000	MAATCC0012	3.1	2	30	50	SO-16
0 - 3000	MAAD-007078-000100	3.8	1	31	48	CSP-1
0 - 3500	MAAD-007081-000100	3.2	0.5	15.5	48	CSP-1
0 - 3500	MAATCC0014	3.2	0.5	15.5	48	CSP-1
0 - 4000	MAATCC0009	5.1	0.5	31.5	48	CSP-1
0 - 4000	MAADCC0006	2.5	1	15	48	CSP-1
0 - 4000	MAATCC0011	5.1	0.5	31.5	48	CSP-1
0 - 4000	MAAD-007077-000100	2.5	1	15	48	CSP-1
0 - 6000	MAAD-007083-000100	5.8	1	31	48	CSP-1

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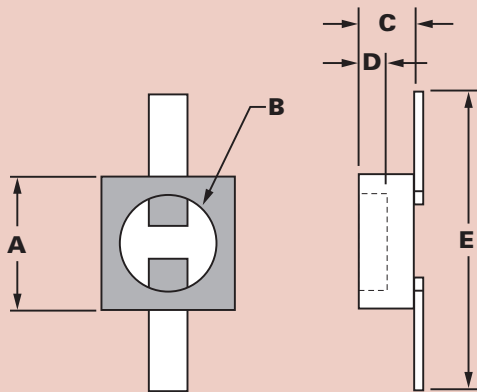
An industry leader in RF and microwave technology, **M/A-COM Technology Solutions** is also an industry leader in **ceramic packages** for RF, microwave and optoelectronic devices. The Company manufactures high thermal conductivity, low loss packages for a broad spectrum of advanced semiconductor devices, including:

- RF bipolar transistors
- RF LDMOS transistors
- GaAs FETs and MMICs
- GaN/SiC FETs
- Microwave diodes
- Hermetic, surface-mount component packages for mixers, LNAs, doublers, etc
- Photodiodes
- LEDs
- VCSELs and MEMS
- Both hermetic and non-hermetic packages

Our modern facility is fully equipped with all of the preparation, tooling, firing, brazing, plating, and inspection equipment necessary to produce state-of-the-art custom designs, as well as to execute high volume production runs. Progressive quality concepts are applied at all levels of business, with dedication to continuous process improvement.



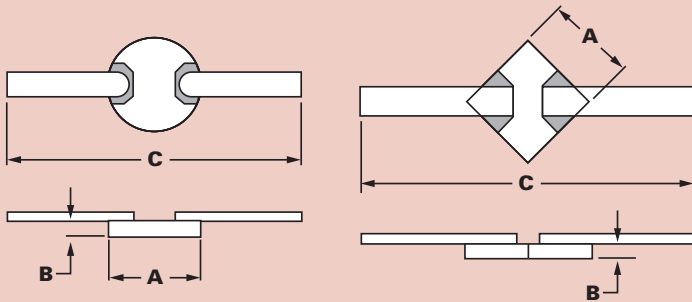
J-Packs



A	B	C	D	E Available lead lengths
.070" Sq."	ø.050"	.030"	.015"	.155"
.070" Sq."	ø.055"	.030"	.015"	.165"
.100" Sq."	ø.055"	.030"	.015"	.400"
.100" Sq."	ø.063"	.030"	.015"	.500"
.100" Sq."	ø.072"	.030"	.015"	.540"

Parts are available in 2, 3, or 4 lead configurations

W-Packs



A	B	C Available lead lengths
ø.053"	.010" or .015"	.270"
ø.100"	.010 or .015"	.290"
.050" Sq.	.010" or .015"	.300"
.070" Sq.	.010" or .015"	.330"
.100" Sq.	.010" or .015"	.400"

Parts are available in 2, 3, or 4 lead configurations

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RF and Microwave Diodes: PIN, Schottky, and Varactor Devices

M/A-COM Technology Solutions produces one of the widest variety of PIN, Schottky, and varactor diodes in the industry for microwave circuit applications from 1 MHz to 80 GHz. Diodes are manufactured in die form, plastic, ceramic, and metal packaging.

- Broadband and high power switch circuits: silicon and GaAs PIN switch diodes
- Analog attenuator circuits: silicon PIN attenuator diodes
- High power limiter circuits: silicon PIN limiter diodes
- Detector and mixer circuits: GaAs and silicon Schottky diodes
- Multiplier circuits: GaAs and silicon Schottky diodes
- Filter and VCO circuits: GaAs and silicon varactor diodes

Limiter Diodes

- Die series for chip and wire high frequency microwave applications
- Ceramic packaged series for wave guide, coaxial and surface mount applications

Multiplier Diodes

- Flip chip series for higher frequency millimeter wave applications
- Plastic packaged series for microwave frequency surface mount applications
- Ceramic packaged series for high power waveguide and coaxial applications

Mixer and Detector Diodes

- SURMOUNT™ “0502” style diodes for surface mount high performance applications
- GaAs flip chip and GaAs beam lead series for surface mount millimeter frequency applications
- Plastic series for cost effective, surface mount applications
- Ceramic series for microwave frequency surface mount applications

Switch and Attenuator PIN Diodes

- CERMACHIP series for microwave frequency applications
- Plastic series for cost effective, surface mount applications, AlGaAs series for low loss, high isolation millimeter frequency applications
- GaAs and silicon flip chip series for surface mount millimeter applications
- SURMOUNT™ “0502” style diodes for surface mount high performance applications
- HIPAX series for high average power surface mount UHF applications
- KILOVOLT series for high peak voltage HF and VHF applications
- HIPAX non-magnetic series for high average power MRI HF and VHF applications

Tuning Diodes

- GaAs constant gamma series for higher frequency and high Q applications
- Plastic packaged silicon hyperabrupt varactor diodes for surface mount applications, including VCOs, tunable filters, and phase shifters



Limiter

Part Number	Junction Capacitance (pf)	Max. Peak Power (W) at 1_S P.W. 0.1% Duty	Carrier Lifetime (ns)	Voltage Rating (V)	Input P1dB (dBm)	Packages
Die and Packaged Products						
MA4L011 Series	0.13 - 0.24	80	10	15-35	7	Die, Ceramic
MA4L021 Series	0.14 - 0.24	90	10	20-35	8	Die, Ceramic
MA4L022 Series	0.13 - 0.23	90	10	20-35	8	Die, Ceramic
MA4L031 Series	0.14 - 0.21	125	15	30-50	10	Die, Ceramic
MA4L032 Series	0.13 - 0.2	125	15	30-50	11	Die, Ceramic
MA4L062 Series	0.07 - 0.15	200	40	50-75	15	Die, Ceramic
MA4L101 Series	0.15 Max	250	90	100 Min	20	Die, Ceramic
MA4L401 Series	0.3 Max	1000	800	250 Min	30	Die, Ceramic

Multiplier

Standard Part Number Series	Junction Capacitance at Vr=6V (pf)	Min. Breakdown Voltage (Vb)	Carrier Lifetime (ns)	Typical Transition Time (ns)	Package
Discrete Die Products					
MA44621A-134	0.2 - 0.3	20	7	50	Die
MA43543-134	0.2 - 0.55	20	25	60	Die
MA44631A-134	0.3 - 0.5	30	8	70	Die
MA44641A-134	0.4 - 0.6	40	12	90	Die
MA44631C-134	0.7 - 0.9	30	8	70	Die
Ceramic Packaged Products					
MA43543 Series	0.2 - 0.55	20	25	60	
MA43592 Series	0.2 - 0.3	25	27	90	
MA43004 Series	0.45 - 0.85	30	50	150	
MA43000 Series	3.0 - 4.5	85	500	600	
Standard Part Number Series	RoHS Compliant Part Number	Total Capacitance at Vr=6V (pf)	Min. Breakdown Voltage (Vb)	Carrier Lifetime (ns)	Typical Transition Time (ns)
Plastic Packaged Products					
MA44769 Series ♦	MA144769, MAVR-044769 Series	0.8 - 1.2	30	50	150
MA44768 Series ♦	MAVR-044768 Series	1.6 - 2.4	30	225	250
MA44767 Series ♦	MAVR-044767 Series	3 - 4.5	30	500	600

Mixing & Detector

Part Number	Junction Capacitance (pf)	Tss (dBm)	Frequency (MHz)	Package
Flip Chip & Beam Lead Products — GaAs				
MA4E1317	0.045	-55	0 - 80000	Flip Chip
MADS-001317-1296AG	0.045	-55	0 - 80000	Flip Chip
MA4E1318	0.045	-55	0 - 80000	Flip Chip
MA4E1319-1	0.045	-55	0 - 80000	Flip Chip
MA4E1319-2	0.045	-55	0 - 80000	Flip Chip
MA4E2160	0.045	-56	1 - 80000	Flip Chip
MA4E2037	0.05	-55	0 - 60000	Beam Lead
MA4E2039	0.05	-55	0 - 60000	Beam Lead
MA4E2040	0.05	-55	0 - 60000	Beam Lead

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Mixing & Detector

Part Number	Junction Capacitance (pf)	Tss (dBm)	Frequency (MHz)	Package
Die and Surface Mount Products — Silicon				
MA4E931Z2-1261A	0.11	-55	0 - 18000	Die
MADS-002054-1296LR	0.15	-55	0 - 18000	Die
MA4E2099-1284	0.16	-53	0 - 18000	Die
MA4E2062 Series	0.4	—	0 - 20000	Die
MADS-002545-1307MG	0.11	-53	1 - 18000	Surmount
MA4E2501L-1290	0.12	-53	0 - 26000	Surmount
MA4E2502 Series	0.12	-53	0 - 26000	Surmount
MA4E2513L-1289	0.12	-53	0 - 26000	Surmount
MA4E2514 Series	0.12	-53	0 - 26000	Surmount
MA4E2532 Series	0.16	-53	0 - 26000	Surmount
MA4E2544L-1282	0.22	-53	0 - 26000	Surmount
MA4E2508 Series	0.24	-53	0 - 26000	Surmount

Standard Part Number Series	RoHS Compliant Part Number	Junction Capacitance (pf)	Total Max. Capacitance (pf)	Tss (dBm)	Frequency (MHz)
Plastic Packaged Products					
MA4E2200 Series ♦	MA4E2200X1*, MADS-002200 Series	0.11	0.25	-55	0 - 4000
MA4E2054 Series ♦	MA4E2054X1*, MADS-002054 Series	0.15	0.3	-50	0 - 4000
	MADS-003000 Series	0.4	0.5	-50	0 - 3000
	MA4E2062, MADS-002062 Series	0.4	0.5	-50	0 - 3000
	MA4E2072, MADS-002072 Series	0.5	0.63	-50	0 - 3000
MA4E1338 Series ♦	MA4E1338X1*, MADS-001338 Series	0.7	1	-47	0 - 3000
MA4E1340 Series ♦	MA4E1340X1*, MADS-001340 Series	0.9	2	-45	0 - 3000
MA4E1339 Series ♦	MA4E1339X1*, MADS-001339 Series	1	1.2	-45	0 - 3000

*Note: The "X" in the above RoHS compliant part numbers varies depending upon the specific part configuration.

Part Number	Junction Capacitance (pf)	Total Max. Capacitance (pf)	Tss (dBm)	Frequency (MHz)
Ceramic Packaged Products				
MA40045-137	0.10	0.30	—	0 - 6000
MA40064-119	0.12	0.32	-55	0 - 6000
MA40115-276	0.12	0.32	—	0 - 16000
MA40126-186	0.12	0.32	—	0 - 16000
MA40143-213	0.12	0.32	-50	0 - 10000
MA40147-213	0.12	0.32	-50	0 - 10000
MA40201-119	0.12	0.32	-55	0 - 10000
MA40205-119	0.12	0.32	-55	0 - 10000
MA40215-120	0.12	0.32	-55	0 - 10000
MA40261-186	0.12	0.32	-55	0 - 10000
MA40264-186	0.12	0.32	-55	0 - 10000
MA4E914-276	0.14	0.35	—	0 - 18000
MA4E920-276	0.14	0.35	—	0 - 18000
MA4E185-276	0.2	0.4	—	0 - 12000
MA4E190-276	0.2	0.4	—	0 - 12000
MA4E197-186	0.2	0.4	—	0 - 12000
MA4E926-276	0.2	0.4	—	0 - 18000
MA4E929A-119	0.25	0.45	-55	0 - 18000
MA4E929B-119	0.25	0.45	-55	0 - 18000

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Switch & Attenuator

Part Number	Total Capacitance (pF)	Dynamic Resistance (ohms)	Frequency (MHz)	Package
Discrete Diode Products — GaAs				
MA4GP905	0.025	3	100 - 30000	Beam Lead
MA4GP907	0.025	4.2	100 - 30000	Flip Chip
Discrete Diode Products — AlGaAs				
MA4AGP907	0.025	3	100 - 30000	Flip Chip
MA4AGSBP907	0.025	3	100 - 30000	Flip Chip w/ Solder Bu
MA4AGFCP910	0.018	5.2	100 - 40000	Flip Chip
MA4AGBLP912	0.02	4	100 - 40000	Beam Lead
Discrete Diode Products — Silicon				
MA4SPS422	0.18	3.1	1 - 6000	Surmount
MA4SPS421	0.09	6	1 - 10000	Surmount
MA4SPS502	0.14	2.4	10 - 18000	Surmount
MADP-000208-13180W	0.81	0.4	30 - 2000	Surmount
MADP-030015-1314	0.79	0.49	50 - 2000	Surmount
MADP-042505-130600	0.6	0.6	50 - 2000	Surmount
MADP-030025-1314	0.5	0.65	50 - 2000	Surmount
MADP-042408-1305	0.36	0.67	50 - 4000	Surmount
MADP-017015-1314	0.32	0.72	50 - 4000	Surmount
MADP-042405-130600	0.27	0.8	50 - 4000	Surmount
MA4SPS302	0.4	1	50 - 4000	Surmount
MADP-042305-130600	0.14	1.3	50 - 6000	Surmount
MADP-017025-1314	0.23	1	50 - 8000	Surmount
MADP-042508-1305	0.18	0.97	50 - 10000	Surmount
MADP-042308-1305	0.09	1.57	50 - 15000	Surmount
MA4SPS552	0.06	2.5	50 - 15000	Surmount
MADP-042905-130600	0.06	3.1	50 - 16000	Surmount
MADP-042908-1305	0.04	3.63	50 - 18000	Surmount
MA4SPS402	0.04	4.5	50 - 18000	Surmount
MADP-064908-131000	0.05	5	50 - 18000	Surmount
MA4FCP305	0.05	2.1	100 - 18000	Flip Chip
MA4FCP300	0.025	2.6	100 - 30000	Flip Chip
MA4FCP200	0.02	2.8	100 - 40000	Flip Chip
MA4PBL027	0.030	2.8	100 - 18000	Beam Lead
Ceramic Packaged Products — GaAs				
MA4GP030 Series	0.06	2	100 - 18000	Ceramic, Die
MA4GP032 Series	0.12	1.5	100 - 15000	Ceramic, Die
MA4GP022 Series	0.15	1.0	100 - 10000	Ceramic, Die
Ceramic Packaged Products — Silicon				
MA4P203 Series	0.15	1.5	30 - 18000	Ceramic, Die
MA4P303 Series	0.15	1.5	20 - 18000	Ceramic, Die
MA4P202 Series	0.25	2.5	50 - 18000	Ceramic, Die
MA4P604 Series	0.3	1	0.5 - 8000	Ceramic, Die
MA4P606 Series	0.6	0.7	0.5 - 1000	Ceramic, Die
MA4P607 Series	1.3	0.4	0.5 - 500	Ceramic, Die
MA4PK2000 Series	2.7	0.2	0.1 - 500	Ceramic, Die
MA4PK3000 Series	3.2	0.15	0.1 - 500	Ceramic, Die
MA4P504 Series	0.20	0.6	1 - 10000	Ceramic, Die, MELF
MA4P404 Series	0.20	0.8	5 - 10000	Ceramic, Die, MELF
MA4P505 Series	0.35	0.45	1 - 6000	Ceramic, Die, MELF

Note: Part numbers are RoHS compliant. ♦ indicates non-RoHS compliant.

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All specifications are subject to change.

Switch & Attenuator (continued)

Part Number	Total Capacitance (pF)	Dynamic Resistance (ohms)	Frequency (MHz)	Package
HIPAX/MELF Products				
MA4P1450-1091T	1.4	0.35	1 - 300	MELF
MA4P1250-1072T	0.7	0.5	5 - 500	MELF
MA4P7100 Series	0.7	0.5	1 - 1000	MELF, HIPAX
MA4PH235-1072T	0.8	0.5	50 - 500	MELF
MA4P4000 Series	1.8	0.5	0.1 - 500	MELF, HIPAX
MA4PH237-1072T	1.2	0.6	10 - 300	MELF
MA4P7000 Series	0.4	0.8	1 - 1000	MELF, HIPAX
MA4P4300 Series	1.6	1	0.1 - 500	MELF, HIPAX
MA4PH236-1072T	0.2	3	50 - 1000	MELF
MA4PH238-1072T	0.2	6	10 - 1000	MELF
MA4PH239-1072T	0.5	25	10 - 1000	MELF
MA4P7464F-1072T	0.4	0.5	1 - 500	MELF Non-Magnetic Pkg
MA4P7461F-1072T	0.6	0.5	1 - 500	MELF Non-Magnetic Pkg
MA4P7441F-1091T	1.8	0.5	0.5 - 500	MELF Non-Magnetic Pkg
MA4P7446F-1091T	1.8	0.5	0.5 - 500	MELF Non-Magnetic Pkg
MA4P7470F-1072T	0.4	0.8	0.5 - 1000	MELF Non-Magnetic Pkg
MA4P7452F-1072T	0.4	0.9	0.5 - 1000	MELF Non-Magnetic Pkg

Standard Part Number Series	RoHS Compliant Part Number	Total Capacitance (pF)	Dynamic Resistance (ohms)	Frequency (MHz)
Plastic Packaged Products				
	MADP-008120-12790T	0.13	2.5	5 - 6000
MA4P274 Series ◆	MA4P7455, MADP-007455 Series	0.15	3	5 - 2500
MA4P277 Series ◆	MA4P7437, MADP-007437 Series	0.15	6	5 - 4000
MA4P278 Series ◆	MA4P7438, MADP-007438 Series	0.15	10	1 - 4000
MA4P789 Series ◆	MA4P7433, MADP-007433 Series	0.2	1.5	25 - 4000
MA4P290 Series ◆	MADP-007167 Series	0.2	16	1 - 4000
MA4P275 Series ◆	MA4P7436, MADP-007436 Series	0.8	0.5	25 - 2500
MA4P282 Series ◆	MA4P7447, MADP-007155 Series	1.0	0.6	15 - 2500

Tuning

Part Number	Total Capacitance at Vr = 4.0V (pF)	Min. Reverse Breakdown Voltage (Vb)	Gamma	Q (Min.) at 50 MHz	Package
Discrete Die Products — GaAs					
MA46H146	0.06	25	1	5000	Flip Chip
MA46H120	0.35	15	1	3000	Flip Chip
MA46585-1209	0.5	18	1	3000	Beam Lead
MA46580-1209	0.5	18	1.25	3000	Beam Lead
Ceramic Packaged Products — GaAs					
MA46600 Series	0.30	30	0.5	8000	
MA46602 Series	0.5	30	0.5	7000	
MA46504 Series	0.6	30	0.5	6000	
MA46603 Series	0.60	30	0.5	6500	
MA46604 Series	0.80	30	0.5	6000	
MA46505 Series	1	30	0.5	5700	
MA46H070 Series	0.6	20	0.75	4500	
MA46H071 Series	1	20	0.75	4500	

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Tuning (continued)

Part Number	Total Capacitance at Vr = 4.0V (pF)	Min. Reverse Breakdown Voltage (Vb)	Gamma	Q (Min.) at 50 MHz	Package
Ceramic Packaged Products — GaAs					
MA46H072 Series	3	20	0.75	3000	
MA46H073 Series	5	20	0.75	2200	
MA46450 Series	0.5	22	1.0	4000	
MA46451 Series	0.70	22	1.0	4000	
MA46457 Series	2.20	22	1.0	3000	
MA46461 Series	4.7	22	1.0	1500	
MA46470 Series	0.5	22	1.25	4000	
MA46H200 Series	0.6	22	1.25	3000	
MA46471 Series	0.7	22	1.25	4000	
MA46472 Series	1	22	1.25	3000	
MA46H201 Series	1	22	1.25	3000	
MA46473 Series	1.2	22	1.25	3000	
MA46474 Series	1.5	22	1.25	3000	
MA46475 Series	1.8	22	1.25	3000	
MA46476 Series	2	22	1.25	3000	
MA46477 Series	2.2	22	1.25	3000	
MA46H202 Series	3	22	1.25	2000	
MA46479 Series	3.30	22	1.25	2000	
MA46480 Series	3.8	22	1.25	2000	
MA46H203 Series	5	22	1.25	1500	
MA46483 Series	6.8	22	1.25	1500	
MA46485 Series	10	22	1.25	1500	
MA46H204 Series	10	22	1.25	1500	
MA46410 Series	0.5	18	1.5	3000	
MA46H500 Series	0.6	18	1.5	2500	
MA46413 Series	1	18	1.5	2500	
MA46H501 Series	1	18	1.5	2500	
MA46416 Series	1.8	18	1.5	2500	
MA46418 Series	2.7	18	1.5	1800	
MA46420 Series	3.8	18	1.5	1800	
MA46H503 Series	5	18	1.5	1200	
MA46425 Series	10	18	1.5	1200	
Standard Part Number	RoHS Compliant Series	Total Capacitance at 0.5V (pF)	Min. Breakdown Voltage (Vb)	Q (Min.) Gamma	Q (Min.) at 50 MHz
Plastic Packaged Products — Silicon					
MA4ST1350 Series ◆	MAVR-001350 Series	11	12	1	1100
MA4ST350 Series ◆	MAVR-000350 Series	11.8	12	1	400
MA4ST1340 Series ◆	MAVR-001340 Series	18	12	1	1050
MA4ST340 Series ◆	MAVR-000340 Series	18.5	12	1	350
MA4ST1330 Series ◆	MAVR-001330 Series	25	12	1	900
MA4ST330 Series ◆	MAVR-000330 Series	26	12	1	350
MA4ST1320 Series ◆	MAVR-001320 Series	55	12	1	550
MA4ST320 Series ◆	MAVR-000320 Series	58	12	1	300

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Tuning (continued)

Standard Part Number	RoHs Compliant Series	Total Capacitance at 2.0V (pF)	Min. Breakdown Voltage (Vb)	Gamma	Q (Min.) at 50 MHz
Plastic Packaged Products					
MA4ST250 Series ♦	MAVR-000250 Series	2.7	12	1	450
MA4ST1240 Series ♦	MA4ST1241, MAVR-001240 Series	3.4	12	1	1200
MA4ST240 Series ♦	MAVR-000240 Series	3.5	12	1	450
MA4ST1230 Series ♦	MA4ST1231, MAVR-001230 Series	4.7	12	1	850
MA4ST230 Series ♦	MAVR-000230 Series	5.0	12	1	400

Standard Part Number	RoHs Compliant Series	Total Capacitance at 2.5V (pF)	Min. Breakdown Voltage (Vb)	Gamma	Q (Min.) at 50 MHz
Plastic Packaged Products					
MA4ST083 Series ♦	MAVR-000083 Series	5	12	1.3	450
MA4ST082 Series ♦	MAVR-000082Series	7.3	12	1.3	350
MA4ST081 Series ♦	MAVR-000081 Series	10.1	12	1.3	300
MA4ST080 Series ♦	MAVR-000080 Series	24.8	12	1.3	150
MA4ST079 Series ♦	MAVR-000079 Series	54.1	12	1.3	80

Standard Part Number	RoHs Compliant Series	Total Capacitance at 4.0V (pF)	Min. Breakdown Voltage (Vb)	Gamma	Q (Min.) at 50 MHz
Plastic Packaged Products					
MA45436 Series ♦	MAVR-045436 Series	4.7	30	0.5	1800
MA45438 Series ♦	MAVR-045438 Series	6.8	30	0.5	1600
MA45439 Series ♦	MAVR-045439 Series	8.2	30	0.5	1500
MA45440 Series ♦	MAVR-045440 Series	10	30	0.5	1300
MA4ST401 Series ♦	MAVR-000401 Series	10	22	1	250
MA45441 Series ♦	MAVR-045441 Series	12	30	0.5	1200
MA4ST402 Series ♦	MAVR-000402 Series	12	22	1	250
MA4ST1103-1141T ♦	—	14	22	1.5	350
MA4ST403 Series ♦	MAVR-000403 Series	15	22	1	250
MA4ST404 Series ♦	MAVR-000404 Series	18	22	1	175
MA4ST405 Series ♦	MAVR-000405 Series	22	22	1	175
MA45445 Series ♦	MAVR-045445 Series	27	30	0.5	900
MA4ST406 Series ♦	MAVR-000406 Series	27	22	1	150
MA45446 Series ♦	MAVR-045446 Series	33	30	0.5	750
MA4ST407 Series ♦	MAVR-000407 Series	33	22	1	150
MA4ST408 Series ♦	MAVR-000408 Series	39	22	1	150
MA4ST409 Series ♦	MAVR-000407 Series	47	22	1	150

Standard Part Number	RoHs Compliant Series	Total Capacitance at 4.7V (pF)	Min. Breakdown Voltage (Vb)	Gamma	Q (Min.) at 50 MHz
Plastic Packaged Products					
MA4ST2200 Series ♦	MAVR-002200 Series	0.5	12	1.5	1750
MA4ST2300 Series ♦	MAVR-002300 Series	1.9	12	1.5	1850
MA4ST2400 Series ♦	MAVR-002400 Series	3.3	12	1.5	1450
MA4ST2500 Series ♦	MAVR-002500 Series	4.6	12	1.5	1150
MA4ST2600 Series ♦	MAVR-002600 Series	6.3	12	1.5	1000

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M/A-COM Technology Solutions drivers are used extensively in wireless infrastructure base stations as well as military and defense applications. Drivers are typically used to translate TTL control voltages for attenuators and switches.

- Cordless and mobile phones
- Cellular base stations/wireless infrastructure
- Satellite radio
- GPS & DAB
- 2.4 GHz and 5.0 GHz WLAN
- VSAT
- CATV and broadband
- Bluetooth
- Fixed Wireless Access (FWA)
- Instrumentation
- Commercial and military radar
- Radar systems
- Test equipment



Drivers

Vcc (V)	Part Number	Type	Rise Time/Fall Time (ns)	Vee (-V)	Package
Die Products					
5	MADRMA-0001 ◆	Quad	500	-5	Die
Packaged Products					
5	MADR-007097-000100	Single	35	-7	SO-8
5	MADRCC0004	Quad	500	-5	SO-16
5	MADR-007098-000100	PIN	—	—	SOW-16
5	MADRCC0005	Single	500	-5	SO-8
5	MADRCC0006	Single	500	-5	SO-8
5	MADRCC0007	Quad	500	-5	SO-16
5	MADRMA-0002	Quad	500	-5	QFN-20, Tin Plating
5	MADR-007131-000100	Dual Pin Driver	—	—	CSP-9
5	MADR-007690-DR0002 ◆	Quad	500	-5	QFN-20, Tin-Lead Plating
15	LG1 ◆	PIN	30000	-15	TO-8, SMT, SMA
15	LG30 ◆	PIN	2000	-15	TO-8, SMT, SMA

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Frequency Doublers



M/A-COM Technology Solutions frequency doublers are a specialized class of broadband mixers. They are used in a variety of communications applications.

- Surface mount, connectorized and drop-in packaging available for standard components
- Multi-octave input frequency coverage in the range of 5 MHz-12 GHz high performance applications



Frequency Doublers

Input Frequency (MHz)	Part Number	VSWR (ratio)	Input Power (dBm)	Conversion Loss (dB)	Package
Packaged Products					
5 - 2400	FD25 ◆	1.5:1	10	11.5	TO-8
5 - 2400	FD25C ◆	1.5:1	10	11.5	SMA
5 - 2400	FD25E ◆	1.5:1	10	11.5	FP
5 - 2400	FD25H ◆	1.5:1	23	12	TO-8
5 - 2400	FD25HC ◆	1.5:1	23	12	SMA
5 - 2400	SFD25 ◆	1.5:1	10	11.5	SMT
5 - 2400	SFD25H ◆	1.5:1	23	12	SMT
5 - 2400	FMS-109 ◆	1.5:1	10	11	SMT
10 - 750	FM-105 ◆	2.0:1	13	14.5	Relay Header
10 - 2400	CSFD25 ◆	2.0:1	10	11.5	SMT
10 - 2400	CSFD25H ◆	2.0:1	23	12	SMT
50 - 3300	CSFD26 ◆	2.0:1	10	12.5	SMT
50 - 3300	FD26 ◆	2.0:1	10	13	TO-8
50 - 3300	FD26C ◆	2.0:1	10	13	SMA
50 - 3300	FD26E ◆	2.0:1	10	13	FP
50 - 3300	SFD26 ◆	2.0:1	10	13	SMT
75 - 1500	FM-104 ◆	2.5:1	13	12	FP
200 - 3000	FM-106 ◆	2.0:1	13	13	FP
2000 - 9000	FD93 ◆	1.5:1	12	12	Hermetic Module
2000 - 9000	FD93C ◆	1.5:1	12	12	SMA
2000 - 9000	FD93H ◆	1.5:1	19	12	Hermetic Module
2000 - 9000	FD93HC ◆	1.5:1	19	12	SMA
3000 - 12000	FDZ5013 ◆	2.0:1	13	12	Hermetic Module
3000 - 12000	FDZ5013C ◆	2.0:1	13	12	SM

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All specifications are subject to change.



M/A-COM Technology Solutions offers a complete line of RF and Microwave **limiters**, limiting amplifiers and LNA/limiters up to 18 GHz. Our limiters and limiting amplifiers use the latest thin-film hybrid manufacturing techniques to obtain the highest levels of performance, repeatability, reliability and cost-effectiveness. These products use the latest technology available in the industry for silicon and GaAs MMICs, silicon bipolar, and GaAs FET devices.



Limiting Amplifiers

Frequency (MHz)	Part Number	Gain (dB)	NF (dB)	Output P1dB (dBm)	Max. Limiting (dBm)	VSWR In/Out	Voltage (Volts)	Current (mA)	Package
Packaged Products									
10 - 500	SMLA88	16.5	6	17	20.5	1.7	15	89	TO-8, SMT, SMA
10 - 1000	LA17	11.5	5.8	10	15	1.7	15	55	TO-8, SMT, SMA
50 - 500	AL7	13	5	-1.5	0.5	1.5	15	54	TO-8, SMT, SMA
50 - 500	LA7	12.5	7	12	15.5	1.5	15	54	TO-8, SMT, SMA
1000 - 4000	LA45	11.5	8	14	15.5	1.7	15	110	TO-8, SMT, SMA
1000 - 4000	LA45-1	14	7.5	17	18.5	1.8	15	110	TO-8, SMT, SMA

Package Limiters

Frequency (MHz)	Part Number	I.L. (dB)	Avg. Power (W)	Peak Power (W)	Leakage (mw)	Recovery Time (ns)	Package
Packaged Products							
1000 - 2000	2690-1001 ◆	0.7	1	100	75	100	Coax
1000 - 2000	2690-1003 ◆	0.9	3	1000	100	1000	Coax
2000 - 8000	2690-1005 ◆	1.1	1	100	50	100	Coax
2000 - 8000	2690-1007 ◆	1.3	3	1000	100	1000	Coax
2000 - 18000	2690-1013 ◆	2	1	100	50	100	Coax
2000 - 18000	2690-1014 ◆	2.2	2	500	75	250	Coax
2000 - 18000	2690-1015 ◆	2.3	3	1000	100	1000	Coax
8000 - 18000	2690-1009 ◆	1.8	1	100	50	100	Coax
8000 - 18000	2690-1011 ◆	2.3	3	1000	100	1000	Coax

Signal Limiters

Frequency (MHz)	Part Number	I.L. (dB)	Limiting Level (dB)	Input VSWR	Output VSWR	Voltage (Volts)	Current (mA)	Package
Packaged Products								
5 - 3000	L1	3	4	1.7	1.9	+15	7	TO-8, SMT, SMA
50 - 4000	L42	4	4.5	1.7	2	+15	7	TO-8, SMT, SMA

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Mixers and Modulators



M/A-COM Technology Solutions mixers and modulators are widely used in aerospace and defense, wireless and broadband communications applications. We offer a variety of connectorized, flat pack, drop-in and surface mount packages with a broad range of operating frequency ranges and performance specifications for these markets.

Mixers

- Double and triple balanced designs
- Variety of technologies
 - Hybrid assemblies using Schottky quad diodes
 - GaAs pHEMT
 - Si HMIC
- Products available in subsets of the frequency range
 - RF/LO: 50 KHz - 24 GHz
 - IF: DC - 8 GHz

Modulators

- I/Q mod/demod versions available
- Products available in subsets of the 9 - 960 MHz frequency range
- Surface mount packaging for maximum performance



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Mixers and Modulators

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IQ Modulators

Frequency RF/LO (MHz)	Frequency IQ (MHz)	Part Number	LO Carrier Suppression (dBc)	SSB Rejection (dBc)	Package
Packaged Products					
850 - 960	0 - 0	MA4IQP900L-1291T ◆	34	35	6 mm PFQN
850 - 960	0 - 0	MA4IQP900M-1291 ◆	50	40	6 mm PFQN
850 - 960	0 - 0	MA4IQP900H-1291T ◆	26	30	6 mm PFQN
850 - 960	0 - 0	MAMO-000900-1291HT	34	36	6 mm PQFN
850 - 960	0 - 0	MAMO-000900-1291LT	42	38	6 mm PQFN
850 - 960	0 - 0	MAMO-000900-1291MT	40	42	6 mm PFQN
921 - 960	0.001 - 0.27	MAMO-007252-IN2960 ◆	27/34	55	SM-28

Demodulators

Frequency Fmin (MHz)	Fmax (MHz)	Part Number	Conversion Loss (dB)	Amplitude Unbalance (dB)	Phase Unbalance (deg)	Harmonic 3X I/Q (dBc)	Package
Packaged Products							
70	90	MAAD-007251 ◆					6 mm PFQN
850	960	MA4IQP900L-1291T ◆	12.6	0.09	3		6 mm PFQN
850	960	MA4IQP900M-1291 ◆	13	0.12	0.5	70	6 mm PFQN
850	960	MA4IQP900H-1291T ◆	12.5	0.2	2		6 mm PFQN
850	960	MAMO-000900-1291HT	12	.05	1	68	6 mm PQFN
850	960	MAMO-000900-1291LT	12.2	.06	1	58	6 mm PQFN
850	960	MAMO-000900-1291MT	12	0.05	0.5		6 mm PFQN

Mixers: Space Products

Frequency (RF/LO) (MHz)	Frequency (IF) (MHz)	Part Number	LO Drive (dBm)	Conversion Loss (dB)	Isol. (LO/RF) (dB)	Package
Packaged Products						
0.5 - 500	0.5 - 500	MD20-0016-S	7	35	1	FP-2
5 - 1500	5 - 1500	MD20-0018-S	9	30	1	FP-2
10 - 3000	10 - 3000	MD20-0017-S	8	25	6	FP-2

Up/Down Converters

Frequency (MHz)	Part Number	Gain (dB)	NF (dB)	Input IP3 (dBm)	Carrier Suppression (dBc)	I _{dd} (mA)	Package
Packaged Products							
1500	SA65-0003 ◆	8	1.5	25	—	45	QSOP-16

Vector Modulators

Part Number	I.L. (dB)	Phase Shift (Degrees)	Amplitude Flatness (dB)	Dev. from Linear Phase (deg)	Return Loss (-dB)	Output IP3 (dBm)	Package
Packaged Products							
MAIA-007100-000100	11.5	360	0.1	0.2	17	41	CSP-6
MAIA-007099-000100	—	360	0.05	0.75	18	—	CSP-6
MAIA-007150-000100	15	360	0.25	0.5	17	—	CSP-5

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Mixers and Modulators

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Mixers

Frequency (RF/LO) (MHz)	Frequency (IF) (MHz)	Part Number	LO Drive (dBm)	Conversion Loss (dB)	Isol. (LO/RF) (dB)	Input P1dB (dBm)	Package
Die Products							
20000 - 26000	0 - 6000	MA4EX2401	13	8	30	10.5	CHIP
Packaged Products							
DC - 960	820 - 915	MAMXES0072	7	7	40	5	SM-89
0.05 - 200	0 - 200	M6D-50 ◆	7	7	50	0	RH
0.05 - 200	0 - 200	SM6D ◆	7	7	45	—	SMT
0.2 - 200	0 - 200	MAC-50 ◆	7	6	25	1	TO-52
0.2 - 200	0.2 - 200	MDS-222 ◆	7	7.5	35	2	SF-1
0.4 - 500	0 - 500	M6V, SM6V ◆	7	6.5	47	0	TO-5, SMT
0.5 - 500	0 - 500	ELCM-1	7	6.2	27	1	SM-89
0.5 - 500	0 - 500	ELCM-1H	17	7.2	35	14	SM-87
0.5 - 500	0 - 500	EMRS-1	7	6.2	27	1	SM-1
0.5 - 500	0 - 500	M9BC ◆	17	7	52	8	RH
0.5 - 500	0 - 500	MAMXES0022	7	6.5	30	1	SM-134
0.5 - 500	0 - 500	MD-124 ◆	7	7	25	2	FP-2
1 - 400	0 - 400	M9E ◆	27	7	40	20	RH
1 - 500	0 - 500	MD-161 ◆	13	8	25	10	FP-2
1 - 1000	0 - 1000	ESMD-C1	7	7.5	45	1	SM-2
1 - 1000	1 - 1000	MAMXES0028 ◆	7	7.5	30	1	SM-134
1 - 1500	1 - 1000	MD-160 ◆	13	9	25	—	RH-3
1 - 3400	1 - 2000	CSM4T	10	8	35	7	SMT
1 - 3400	1 - 2000	CSM4T17	17	8	35	14	SMT
1 - 3400	1 - 2000	M4T ◆, SM4T	10	8	35	6	FP, SMT
1 - 3400	1 - 2000	M4TH, SM4TH ◆	23	8	35	17	FP, SMT
1 - 3400	1 - 2000	M8T, M8TC ◆	10	7	38	7	TO-8, SMA
1 - 3400	1 - 2000	M8TH, M8THC ◆	23	7.5	36	17	TO-8, SMA
1 - 3400	1 - 2000	SM4T17	17	8	35	13	SMT
1 - 3500	1 - 3500	MD-189 ◆	23	8	35	20	FP-2
1 - 3500	1 - 3500	MDC-169 ◆	10	10	35	7	C-7
1 - 3500	1 - 3500	MD-169 ◆	10	10	35	7	FP-2
1 - 3500	5 - 1500	MDS-169v	10	8	35	7	SF-1
1 - 3500	1 - 3500	MDS-189 ◆	23	8	35	20	SF-1
1 - 4000	5 - 1500	MD-179 ◆	7	10.5	35	5	FP-2
1 - 4000	5 - 1500	MDC-179 ◆	7	10.5	35	5	C-7
2 - 500	0 - 500	ELCM-1MH	13	6	30	9	SM-89
2 - 2200	2 - 2200	MAMX-009646-230BML	17-23	6	47	23	SM-194
5 - 500	0 - 500	M6E-50v	7	7.5	43	—	RH
5 - 500	0 - 500	MAC-51 ◆	7	7	25	2	TO-5-2
5 - 500	0 - 500	MD-108 ◆	7	9	35	2.5	RH-3
5 - 750	0 - 500	SM6EH ◆	20	6	45	13	SMT
5 - 750	0 - 500	M6EHv	20	6	47	13	RH
5 - 1000	0 - 1000	ELCM-2	7	7	25	1	SM-89
5 - 1000	0 - 1000	MAMXES0115	7	7	25	1	SM-89
5 - 1000	0 - 1000	MD-113 ◆	7	8	25	0	FP
5 - 1000	0 - 1000	EMRS-2	7	7	25	1	SM-1
5 - 1500	0 - 1000	ELCM-5	7	7.5	30	1	SM-87
5 - 1500	0 - 1000	EMRS-5MH	13	9	30	7.5	SM-1
5 - 1500	0 - 1000	MD-158 ◆	7	9	20	1	FP
5 - 1900	5 - 1000	ELCM-11X	7	7.4	27	1	SM-87
5 - 1900	5 - 1000	MAMXES0041 ◆	7	7.4	30	1	SM-134

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Mixers and Modulators

www.macomtech.com/mixers

Mixers (continued)

Frequency (RF/LO) (MHz)	Frequency (IF) (MHz)	Part Number	LO Drive (dBm)	Conversion Loss (dB)	Isol. (LO/RF) (dB)	Input P1dB (dBm)	Package
Packaged Products							
5 - 2500	5 - 1500	MAMX-007238-CM25MH	13	6.5	36	30	SM-87
10 - 500	10 - 500	MDS-223 ◆	7	7	40	2.5	SF-1
10 - 1000	0 - 600	M2E, SM2E, M2EC ◆	20	8	33	—	TO-8, SMT, SMA
10 - 1200	0 - 1000	M6R ◆	7	8	40	0	TO-5
10 - 1500	0 - 800	M2A, M2AC ◆	7	7.5	40	0	TO-8, SMA
10 - 1500	0 - 1000	M4A, SM4A ◆	7	7.5	35	0	FP, SMT
10 - 1500	0 - 1000	M4B, SM4B ◆	13	7.5	35	7	FP, SMT
10 - 1500	0 - 600	M9H, M9HC ◆	20	8	29	15	TO-8, SMA
10 - 1500	10 - 1500	MD-148 ◆	10	6	40	5	FP
10 - 1500	10 - 1500	MD-149 ◆	7	7.5	40	0	FP
10 - 1500	10 - 1500	MDS-148 ◆	10	6	40	5	SMT
10 - 1500	10 - 1500	MDS-149 ◆	7	7.5	40	0	SMT
10 - 1600	0 - 800	M2B, M2BC ◆	13	7.5	43	7	TO-8, SMA
10 - 2000	10 - 800	ESMD-C15	10	6.5	30	5	SM-2
10 - 2400	1 - 1000	M2T, M2TC ◆	13	8	40	11	TO-8, SMA
50 - 4800	50 - 3000	CSM5Tv	10	7.2	35	7	SMT
50 - 4800	50 - 3000	CSM5T17 ◆	17	7.8	33	14	SMT
50 - 4800	50 - 3000	CSM5THv	23	7	35	17	SMT
50 - 5000	50 - 3000	M5Tv	10	8	32	7	FP
50 - 5000	50 - 3000	SM5T ◆	10	7.5	32	7	SMT
50 - 5000	50 - 3000	SM5T17 ◆	17	7.5	32	13	SMT
50 - 5000	50 - 3000	SM5TH ◆	23	7.7	32	17	SMT
80 - 2500	0 - 1000	ESMD-C50H	17	7.3	28.9	14	SM-2
80 - 2500	0 - 1000	MAMXES0117	17	7.3	29	14	SM-2
80 - 2500	0 - 1000	ESMD-C50L	10	7.7	30	5	SM-2
80 - 2500	0 - 1000	ESMD-C50M	13	7.4	29.1	8	SM-2
234 - 245	10 - 20	MAMX-007242-ES0103	17-21	6	36	22	SM-2
300 - 5000	0.1 - 3000	MD-154 ◆	10	10	11	7	FP
350 - 2000	0 - 400	EMRS-11F	7	6.8	25	1	SM-1
500 - 9000	10 - 2000	MDC-164 ◆	13	6.5	17	8	SMA
500 - 19000	30 - 5000	M87, M87C ◆	13	9	24	8	Minpac, SMA
600 - 3000	0 - 1000	MD-156 ◆	7	9	20	0	FP
700 - 1000	10 - 150	MD22-0002-MUC	5	—	22	8	SM-41
700 - 1000	0 - 400	MA4EX900L-I226T ◆	5	6.5	26	1	MSOP-8
700 - 1200	0 - 400	MA4EX950H-I225T ◆	15	6.6	27.5	8.3	SOT-25
700 - 1200	0 - 400	MA4EX950L-I225T ◆	5	6.5	28	1.5	SOT-25
700 - 1200	0 - 400	MA4EX950M-I225T ◆	10	7	26	4.3	SOT-25
700 - 1400	0 - 400	MAMX-000900-1061LT	7	7	37	14	SOIC-8
700 - 1400	0 - 400	EMD40-900L	17	9	28	2.5	SOIC-8
700 - 2000	0 - 300	MD-614 ◆	7	8	25	0	FP
800 - 1000	1 - 150	CSM11-13 ◆	13	7.5	35	9	SMT
800 - 1000	0 - 100	MD54-0004 ◆	13	7.5	38	21	SOIC-8
800 - 1000	0 - 100	MAMXSS0011	13	7.5	38	21	SOIC-8
800 - 1000	0 - 200	MD54-0005 ◆	5	8	35	15	SOT-25
800 - 1000	0 - 200	MAMXSS0012	5	8	35	15	SOT-25
800 - 1000	170	MD57-0001 ◆	-5	9.3	28	14	SOT-26
800 - 1000	170	MAMX-008611	-5	9.3	28	14	SOT-26
800 - 2400	0 - 1500	M4G, SM4G ◆	7	7.5	32	0	FP, SMT
800 - 3500	0 - 1500	M2G, M2GC ◆	7	8	28	0	TO-8, SMA

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Mixers and Modulators

www.macomtech.com/mixers

Mixers (continued)

Frequency (RF/LO) (MHz)	Frequency (IF) (MHz)	Part Number	LO Drive (dBm)	Conversion Loss (dB)	Isol. (LO/RF) (dB)	Input P1dB (dBm)	Package
Packaged Products							
810 - 1000	10 - 100	EFM-900	13	8.5	22	22	SM-108
850 - 1050	0 - 200	MA4EXP950H-1277T ◆	15	8.3	55	12.7	MLP 3 mm
850 - 1050	0 - 400	MA4EXP950L-1277T ◆	5	8.5	62	4.3	MLP 3 mm
850 - 1050	0 - 400	MA4EXP950M-1277T ◆	10	8.2	62	8.1	MLP 3 mm
880 - 915	150 - 170	EMRS-6HX1	17	5.5	30	13	SM-1
880 - 915	150 - 170	MAMX-008786-ES0120	17	5.5	30	17	SM-1
925 - 1880	45 - 95	MAMX-008782-ES0118	7	9.5	35	7	SM-1
1000 - 6000	10 - 2000	MDC-163 ◆	0	7	10	-2	SMA
1000 - 7000	10 - 2000	MDC-162 ◆	13	6	15	8	SMA
1000 - 18000	0 - 500	DM1-18A ◆	7	6	22	3	SMA
1000 - 18000	30 - 5000	M83, M83C ◆	13	7.5	25	6	Minpac, SMA
1000 - 18000	1000 - 8000	M88, M88C ◆	13	8	28	7	Minpac, SMA
1000 - 18000	1000 - 8000	M89, M89C ◆	10	8	28	4	Minpac, SMA
1300 - 1900	0 - 500	MA4EX180H-1225T ◆	15	6.5	27	8.5	SOT-25
1300 - 1900	0 - 500	MA4EX180M-1225T ◆	10	5.5	17	5	SOT-25
1400 - 2100	0 - 500	MD54-0006 ◆	5	8	28	12	SOT-25
1400 - 2100	0 - 500	MAMXSS0013	5	8	28	12	SOT-25
1500 - 2200	160 - 390	CSM2N-17	17	7.3	43	14	SMT
1700 - 2000	0 - 200	MD54-0003 ◆	13	8.5	27	21	SOIC-8
1700 - 2000	0 - 200	MAMXSS0010	13	8	28	21	SOIC-8
1700 - 2200	100 - 400	MD57-0002 ◆	0	8.5	18	15	SOT-26
1700 - 2200	0 - 400	MA4EXP190H-1277T ◆	15	8.4	48	11.3	MLP 3 mm
1700 - 2300	0 - 500	MA4EX190H-1225T ◆	15	6.6	30	10.5	SOT-25
1700 - 2300	0 - 500	MA4EX190L-1225T ◆	5	6.1	25	2	SOT-25
1700 - 2500	0 - 500	MA4EX240H-1225T ◆	15	5.4	17	8.5	SOT-25
1700 - 2500	0 - 400	MA4EX240L-1225T ◆	5	7	17.5	1	SOT-25
1700 - 2500	0 - 500	MA4EX240M-1225T ◆	10	5.5	17	5.3	SOT-25
1700 - 2500	0 - 500	MAMX-000240-1225MT	10	5.5	17	5.3	SOT-25
1800 - 2000	10 - 150	CSM12-13 ◆	13	6.7	30	8	SMT
1800 - 10000	0 - 1000	MY84, MY84C ◆	9	6.5	39	4	Versapac, SMA
1850 - 1980	100 - 500	EFM-1900 ◆	13	7.5	19	24	SM-106
1900 - 2200	160 - 390	CSM2-17	17	8	40	14	SMT
2000 - 10000	0 - 2000	MC4110 ◆	10	6.2	22	3	Open Carrier
2000 - 18000	30 - 5000	MY82, MY82C ◆	13	7.5	20	6	Versapac, SMA
2000 - 18000	0 - 1000	MY85, MY85C ◆	7	8	35	1	Versapac, SMA
2000 - 18000	1000 - 8000	MY88, MY88C ◆	13	8	28	7	Versapac, SMA
2000 - 18000	1000 - 8000	MY89, MY89C ◆	10	8	28	4	Versapac, SMA
2000 - 18000	30 - 4000	MY93, MY93C ◆	10	8	29	4	Versapac, SMA
2000 - 18000	2000 - 18000	M50A, M50AC ◆	10	8	26	5	Minpac, SMA
2000 - 18000	0 - 1000	M85, M85C ◆	7	8	35	1	Minpac, SMA
2000 - 18000	2000 - 8000	M88H, M88HC ◆	21	8	28	17	Minpac, SMA
2000 - 18000	30 - 4000	M93, M93C ◆	10	8	29	4	Minpac, SMA
2000 - 18000	1000 - 8000	MZ8810, MZ8810C ◆	10	7.5	25	6	Versapac, SMA
2000 - 18000	1000 - 8000	MZ8813, MZ8813C ◆	13	7	25	8	Versapac, SMA
2000 - 18000	30 - 5000	MZ9310, MZ9310C ◆	10	7.5	23	6	Versapac, SMA
2000 - 18000	30 - 5000	MZ9313, MZ9313C ◆	13	7	24	8	Versapac, SMA
2000 - 24000	100 - 5000	MZ5210, MZ5210C ◆	10	9	20	4	Versapac, SMA
2000 - 24000	100 - 5000	MZ5210, MZ5210C ◆	10	9	20	4	Versapac, SMA

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Mixers and Modulators

www.macomtech.com/mixers

Mixers (continued)

Frequency (RF/LO) (MHz)	Frequency (IF) (MHz)	Part Number	LO Drive (dBm)	Conversion Loss (dB)	Isol. (LO/RF) (dB)	Input P1dB (dBm)	Package
Packaged Products							
2000 - 24000	1000 - 15000	M51, M51C ◆	10	8	25	5	Minpac, SMA
2000 - 24000	100 - 5000	M52, M52C ◆	10	8	22	5	Minpac, SMA
2000 - 24000	1000 - 15000	MY51, MY51C ◆	10	8	25	5	Versapac, SMA
2000 - 24000	100 - 5000	MY52, MY52C ◆	10	8	22	5	Versapac, SMA
2000 - 26000	100 - 6000	M53, M53C ◆	10	8	22	5	Minpac, SMA
2000 - 26000	1000 - 15000	M50, M50C ◆	10	8	26	5	Minpac, SMA
2000 - 26000	1000 - 15000	MY50, MY50C ◆	10	8	26	5	Versapac, SMA
2000 - 26000	1000 - 12000	MY50A, MY50AC ◆	10	8	26	5	Versapac, SMA
2100 - 2700	0 - 300	MD54-0007 ◆	13	8	25	18	SOT-25
2110 - 2170	100 - 500	EFM-2100 ◆	13	8.5	16	22	SM-106
2110 - 2170	134 - 246	MAMXES0050 ◆	7	10	22	1	SM-87
2300 - 2800	0 - 200	MA4EXP240L-1277T ◆	5	8.3	51	4.8	MLP 3 mm sq.
2300 - 2800	0 - 500	MAMX-090240-1225MT	15	9	54	9.4	SOT-25
2400 - 6000	0 - 2000	M8H-7, M8HC-7 ◆	7	6	40	0	TO-8, SMA
2500 - 5500	0 - 1500	M63, M63C ◆	9	5.5	40	2	Minpac, SMA
2500 - 6500	0 - 1500	M63H, M63HC ◆	20	6	37	14	Minpac, SMA
2500 - 6500	0 - 1500	MY63H, MY63HC ◆	20	7.5	26	14	Versapac, SMA
3000 - 4000	0 - 1050	MA4EX370H-1225T ◆	15	6.8	27.5	8	SOT-25
3000 - 4000	0 - 1050	MA4EX370L-1225T ◆	5	8.5	14	2	SOT-25
3000 - 4000	0 - 1050	MA4EX370M-1225T ◆	10	6.3	27	5	SOT-26
3500 - 4500	0 - 1000	MA4EXP400H-1277T ◆	15	7.7	44	13	MLP 3 mm sq.
3500 - 18000	0 - 3000	M86, M86C ◆	7	7	34	3	Minpac, SMA
3700 - 4200	0 - 2000	M8H-3, M8HC-3 ◆	7	5	40	0	TO-8, SMA
4000 - 18000	0 - 3000	M80, M80C ◆	7	6.5	34	3	Minipac, SMA
4000 - 20000	0 - 4000	MC4520 ◆	20	7	30	11	Open Carrier
4200 - 6000	0 - 2000	MA4EX600H-1225T ◆	15	5.8	28	6.9	SOT-25
4200 - 6000	0 - 2000	MA4EX600L-1225T ◆	5	6.4	26	0.3	SOT-25
4200 - 6000	0 - 2000	MA4EX600M-1225T ◆	10	6.5	27	2.7	SOT-25
4500 - 9500	0 - 2000	M76, M76C ◆	10	6	35	3	Minpac, SMA
4500 - 9500	0 - 2000	M76H, M76HC ◆	20	7	35	15	Minpac, SMA
4500 - 9500	0 - 2000	MY76, MY76C ◆	10	6	35	3	Versapac, SMA
4500 - 9500	0 - 2000	MY76H, MY76HC ◆	20	7	35	15	Versapac, SMA
4700 - 6000	0 - 1050	MA4EX580L-1225T ◆	5	8.5	23	1.5	SOT-25
5000 - 18000	0 - 3000	M79, M79C ◆	10	7	32	4	Minpac, SMA
5000 - 18000	0 - 3000	M79H, M79HC ◆	20	7.5	33	15	Minpac, SMA
5600 - 6000	2300 - 2700	MA4EX585L-1225T ◆	5	8.3	28	1.1	SOT-25
6000 - 14000	0 - 2000	M14A ◆	7	6.5	32	2	SMA
6000 - 18000	0 - 3000	MZ7407, MZ7407C ◆	7	6.5	34	3	Versapac, SMA
6000 - 18000	0 - 3000	MZ7410, MZ7410C ◆	10	6.5	34	4	Versapac, SMA
6000 - 18000	0 - 3000	MZ7420, MZ7420C ◆	20	7.5	33	15	Versapac, SMA
7000 - 18000	0 - 3000	M74, M74C ◆	10	6.5	35	4	Minpac, SMA
8000 - 12500	0 - 2500	M77, M77C ◆	10	5.5	35	4	Minpac, SMA
8000 - 12500	0 - 2500	MY77, MY77C ◆	10	5.5	35	4	Versapac, SMA
9000 - 15000	0 - 2500	M67, M67C ◆	10	6.5	35	4	Minpac, SMA

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Transformers

M/A-COM Technology Solutions offers many standard transformers used for a variety of wireless, wireline and Aerospace and Defense (A&D) communications applications.

- Available in a variety of surface mount, flat pack and connectorized packages
- Standard impedance ratios up to 4:1
- Balanced/unbalanced versions available
- 50W and 75W nominal impedance devices available

Splitters/Combiners

Splitters and combiners are used in a wide range of A&D, wireless and wireline communications applications. We offer a variety of connectorized and surface mount packages for these markets.

- 50 ohm and 75 ohm devices
- Products available in subsets of 400 KHz to 26 GHz frequency range
- 2, 3, 4, 5, 6 and 8 channel versions available

Circulators/Isolators

The Company's circulators and isolators are used in a variety of wireless and Defense applications.

- Single and dual junction devices
- Surface mount and drop-in packaging available for standard components

Couplers

Couplers are used extensively in a wide range of A&D, wireless and wireline communications applications. We offer a variety of connectorized and surface mount packages with a broad range of coupling values for these markets.

Hybrid Couplers

- Magic Tee (1800) and Quadrature (900) configurations

- Products available in subsets of the 2-3000 MHz frequency range
- Available as TO-cans, flatpacks, surface mount and connectorized

Directional Couplers

- Coupling values of 6-30 dB
- Products available in subsets of the 2 MHz to 18 GHz frequency range
- 75W products available for CATV, DTV and DBS applications

MNS Microwave Chip Capacitors

- Suitable for D.C. blocking and RF bias networks in a variety of control and filter circuits
- Capacitance-temperature coefficient provides < 200 ppm/C
- Insertion loss < 0.1 dB at 15 GHz
- Ideal for chip and wire/ribbon microwave high performance circuits

Inductors

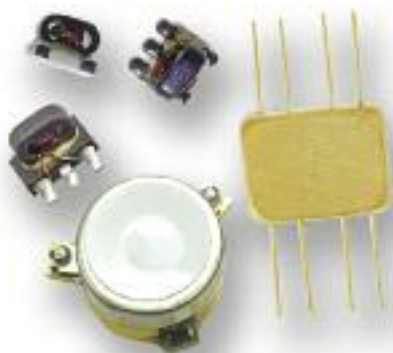
We offer a line of high Q toroidal inductors useful for any application requiring RF or electromagnetic suppression.

- Standard devices are in the 53 to 273 nH inductance range
- Q of 90 minimum
- Surface mount wire wound toroid construction

Filters/Diplexers

M/A-COM Technology Solutions offers a variety of highpass, lowpass and diplex filter components and assemblies used in common wireless communications standards and CATV, DBS and DTV applications.

- 50 ohms and 75 ohms diplexers
- Low cost surface mount packaging
- Multi-chip and MMIC products
- Higher functionality assemblies available



Transformers

Frequency (MHz)	Part Number	Impedance (Ohms)	Impedance Ratio	I.L. (dB)	RF Power (W)	Package
Packaged Products						
0.07 - 200	ETC2-1T ◆	50	2:1	2	0.25	SM-22
0.15 - 110	ETC4-1-4 ◆	50	4:1	1	0.25	SM-22
0.15 - 110	MABA-008570-ETC414	50	4:1	1	0.25	SM-22
0.3 - 200	ETC1-1T ◆	50	1:1	1.5	0.25	SM-22
0.3 - 200	MABACT0062	75	1:1	0.8	0.25	SM-22
0.3 - 200	MABACT0071	75	1:1	0.5	0.25	SM-164
0.3 - 200	MABAES0060	50	1:1	1.5	0.25	SM-22
0.3 - 200	MABA-008482-CF1A40	75	1.78:1	1	1	SM-156
0.5 - 1000	TP-103 ◆	—	4:1	0.6	3	FP
0.5 - 1000	TP-105 ◆	—	1.4:1	0.5	1.5	FP
0.5 - 1500	TP-101 ◆	—	1.6:1	0.5	3	FP
0.75 - 400	TP-104 ◆	—	2:1	0.55	0.4	FP
1 - 350	ETC4-1 ◆	50	4:1	3	0.25	SM-22
1 - 350	MABA-007493-CF4160	75	4:1	1.6	0.25	SM-22
1 - 350	MABAES0040 ◆	50	2:1	2.6	0.25	SM-138
1 - 500	TP-102 ◆	—	4:1	0.75	1	FP
1 - 650	MABACT0064	75	4:1	3	0.25	SM-138
1 - 650	MABA-009298-CT48A0	50	4:1	2.23	0.25	SM-138
2 - 200	TP-75 ◆	—	1.5:1	0.25	10	SMA
2 - 800	ETC4-1-2 ◆	50	4:1	3	0.25	SM-22
2 - 800	MABAES0061	50	4:1	3	0.25	SM-22
2 - 800	MABAES0010 ◆	50	4:1	2.2	0.25	SM-119
2 - 800	MABAES0015 ◆	50	4:1	3.5	0.25	SM-52
2 - 1000	ETK4-2T ◆	50	4:1	3	0.25	SM-22
2 - 1000	MABA-007569-ETK42T	50	4:1	3	0.25	SM-22
2 - 1000	ETC1.5-7 ◆	50	1.5:1	1	0.25	SM-22
4.5 - 1000	MABACT0059	75	1:1	0.8	0.25	SM-22B
4.5 - 3000	MABA-007327-CT1490	75	1:1	1.6	0.25	SM-155
4.5 - 3000	ETC1-1-13 ◆	50	1:1	2	0.25	SM-22
4.5 - 3000	MABA-007159-000000	50	1:1	2	0.25	SM-22
4.5 - 3000	MABA-007327-CT1A40	75	1:1	2.5	0.25	SM-164
4.5 - 3000	MABA-008757-CT1160	50	1:1	4.2	0.25	SM-22B
5 - 50	MABA-007532-CF18A0	75	1:1	0.3	1	SM-138
5 - 65	MABA-007902-CF38A0	75	2.56:1	0.8	0.25	SM-138
5 - 65	MABA-007902-CF38A0	75	2.56:1	0.8	0.25	SM-138
5 - 90	MABA-008282-CFGA40	75	16:1	1.9	0.25	SM-164
5 - 100	MABA-009573-CF1A40	75	1.77:1	0.3	0.25	SM-164
5 - 100	MABA-009776-CF28A0	75	2:1	0.4	0.5	SM-164
5 - 100	MABACT0043	50	1:1	0.7	0.25	SM-138
5 - 100	MABA-008124-CF1FA0	75	1:1	0.7	0.25	SM-250-5
5 - 120	MABA-008182-CF1160	75	1:1	0.5	0.25	SM-22A
5 - 120	MABA-009005-CF1A40	75	1:1	0.3	0.25	SM-164A
5 - 120	MABA-008965-CF1160	75	1:1	0.3	0.25	SM-22A
5 - 120	MABA-009109-CF1A40	75	1:1	0.3	0.25	SM-164A
5 - 200	MABACT0048	75	2:1	0.4	0.25	SM-164
5 - 200	MABA-007819-CF48A0	—	4:1	0.9	0.05	SM-138-A
5 - 200	MABA-008354-CF4A40	75	4:1	3.6	1	SM-164
5 - 200	MABA-008260-CF4A40	75	4:1	0.8	0.25	SM-164

Note: Part numbers are RoHS compliant. ◆ indicates non-RoHS compliant.

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Transformers (continued)

Frequency (MHz)	Part Number	Impedance (Ohms)	Impedance Ratio	I.L. (dB)	RF Power (W)	Package
Packaged Products						
5 - 200	MABACT0056	75	1:1	0.9	0.25	SM-136
5 - 220	MABA-007488-CT9550	75	9:1	0.8	0.25	SM-55
5 - 350	MABACT0067	-	4:1	0.9	0.25	SM-164
5 - 350	MABA-007766-CF28A0	75	1.5:1	1.4	0.25	SM-138
5 - 350	MABAES0025	—	1.5:1	1.4	0.25	SM-138
5 - 400	ETC36-1T-2	50	36:1	12	0.25	SM-22
5 - 800	ETC3-1-1	50	3:1	2	0.25	SM-22
5 - 1000	MABACT0063	75	1.5:1	1	0.25	SM-22
5 - 1000	MABACT0066	75	4:1	1.5	0.25	SM-138
5 - 1000	MABACT0040	75	1:1	1.1	0.25	SM-164
5 - 1000	MABA-009092-CT1A40	75	1.33:1	1	0.25	SM-22A
5 - 1200	MABA-009232-CT4A4B	50	4:1	1.3	0.25	SM-187
5 - 1200	MABA-009231-CT1A4B	50	1:1	1.28	0.25	SM-187
5 - 1200	MABA-007748-CT1160	75	1:1	1.62	0.25	SM-22
5 - 1200	MABA-007681-CT2010	75	2:1	0.6	0.25	SM-118
5 - 1200	MABA-009492-C2W180	75	2:1	2.7	0.5	SM-164
5 - 1200	MABA-009691-CT1881	75	1:1	0.2	0.25	SM-136
5 - 3000	MABA-007871-CT1A40	50	1:1	2.5	0.25	SM-164
5 - 3000	MABACT0039	75	1:1	2	0.25	SM-138
5 - 3000	MABA-007489-CT18A0	75	1:1	0.8	0.25	SM-138
10 - 1500	TPX-75-4 ◆	—	1.5:1	0.25	2	SMA
20 - 1000	MABAES0034 ◆	50	4:1	2.2	0.25	SM-22
50 - 870	MABACT0074	75	2.66:1	1.5	1	SM-152
50 - 870	MABA-008184-CT1760	75	1:1	0.5	0.25	SM-118A
50 - 1200	MABA-009057-CT19E0	75	1:1	1.23	0.25	SM-158
50 - 1200	MABA-009210-CT1760	75	1:1	0.63	0.25	SM-118A
50 - 1200	MABACT0069	75	1:1	0.8	0.25	SM-158
50 - 2150	MABA-00731-CT1980	75	1:1	1.2	0.25	SM-152
50 - 2150	MABA-007731-CT1980	75	1:1	1.2	1	SM-152
350 - 1125	TP-108 ◆	—	2.5:1	1	3	FP
500 - 2500	ETC16-4-2-3 ◆	50	4:1	3	0.25	SM-22
500 - 2500	MABA-007236-C16423	-50	4:1	3	0.25	SM-22
500 - 3000	MABACT0065	50	4:1	3	0.25	SM-22
760 - 960	ETC1-1-6 ◆	50	1:1	2	0.25	SM-22
1710 - 1910	ETC1-1-10 ◆	50	1:1	2	0.5	SM-22

Power Splitters/Combiners

Frequency (MHz)	Part Number	Impedance (Ohms)	Channels	Isolation (dB)	Phase Balance (degrees)	Amplitude Balance (dB)	Package
Packaged Products							
0.2 - 300	DS-310 ◆	50	4	25	4	0.2	FP-5
0.4 - 400	DS-113 ◆	50	2	25	1	0.15	FP-2
0.4 - 400	DSS-113 ◆	50	2	25	1.5	0.15	SF-1
1 - 100	M3H-50 ◆	50	3	55	0.5	0.1	TO-5
1 - 100	MTH-50 ◆	50	2	30	1	0.1	TO-5-1
1 - 300	DS-117 ◆	50	3	20	4	0.25	FP-3
1 - 300	DS-308 ◆	50	3	20	4	0.25	C-8

Note: Part numbers are RoHS compliant. ◆ indicates non-RoHS compliant.

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Power Splitters/Combiners (continued)

Frequency (MHz)	Part Number	Impedance (Ohms)	Channels	Isolation (dB)	Phase Balance (degrees)	Amplitude Balance (dB)	Package
Packaged Products							
2 - 200	THV-50 ◆	50	2	35	0.5	0.1	Conn
2 - 1000	GS-4-7TR ◆	50	4	23	10	0.5	SM-46
2 - 1000	MAPD-007246-ES4700	50	4	23	10	0.5	SM-46
2 - 2000	DS-4-4 ◆	50	4	30	2	0.5	Conn
2 - 2000	H-8-4 ◆	50	2	35	1	0.05	Conn
3 - 700	DS-328 ◆	50	3	20	4	0.4	TO-8-2
5 - 100	MAPDCT0010 ◆	75	2	32	2.5	0.25	SM-150
5 - 120	ESSM-2-9-75 ◆	75	2	21	2	0.5	SM-53
5 - 200	MAPD-008109-C30040	75	3	28	—	—	SM-4
5 - 500	ESSM-2-16	50	2	30	1	0.3	SM-1
5 - 500	DS-309 ◆	50	8	30	2	0.15	C-18
5 - 500	DS-318 ◆	50	2	18	2	0.2	RH-1
5 - 500	ESML-2-1 ◆	50	2	30	5	0.6	SM-24
5 - 500	MAPD-007249-ESML21	50	2	30	3	0.3	SM-24
5 - 900	ESSM-2-6 ◆	50	2	28	3	0.3	SM-1
5 - 900	MAPD-008072-ESSM26	50	2	28	3	0.3	SM-1
5 - 1000	DS-327 ◆	50	2	20	3	0.2	FP-2
5 - 1000	DSS-327 ◆	50	2	16	3	0.3	SF-1
5 - 1000	ELPD-20-1 ◆	75	2	22	4	0.5	SM-93
5 - 1000	ESSMJ-2-12-75 ◆	75	2	30	—	0.3	SM-44
5 - 1000	ESSM-2-2-75 ◆	75	2	18	6	0.6	SM-55
5 - 1000	H-81-4 ◆	50	2	25	2	0.1	Conn
5 - 1000	MACPES0007 ◆	75	2	21	—	—	Surface Mount
5 - 1000	MAPDCT0002 ◆	75	2	32	1.5	0.4	SM-150
5 - 1000	MAPDCT0005 ◆	75	3	22	4	0.3	SM-4
5 - 1000	MAPDCT0027	75	2	20	1	0.32	SM-55A
5 - 1000	MAPD-008108-C202CO	75	2	30	—	—	SM-44
5 - 1000	MAPDCT0028	75	4	21	1	0.3	SM-46
5 - 1000	MAPDCT0029	75	2	21	1	0.28	SM-55
5 - 1000	MAPDCT0030	75	2	20	1.5	0.4	SM-150
5 - 1000	MAPDCT0013	75	2	18	1.5	0.15	SM-156
5 - 1000	ESSM-2-8-75	—	2	10	—	—	SM-55
5 - 1000	MAPD-007778-C402EO	—	4	21	—	—	SM-46
5 - 1000	MAPDCT0033	75	2	22	0.8	0.1	SM-139
5 - 1200	MAPDCT0032	75	4	24	3	0.3	SM-4
5 - 1200	MAPDCT0024	75	2	—	2.1	0.27	SM-169
5 - 2400	MAPDCT0026	75	2	18	4	1.3	SM-156
5 - 2400	MAPDCT0012 ◆	75	2	18	2	0.2	SM-156
10 - 500	DS-109 ◆	50	2	35	1	0.15	FP-2
10 - 500	DS-112 ◆	50	4	25	5	0.2	FP-5
10 - 500	DS-312 ◆	50	4	25	2	0.2	C-14
5 - 1000	MAPD-009278-ST1000	50	2	20	4	0.6	SM-156
5 - 1000	MAPD-008812-0003HW	50	3	28	1.5	0.1	SM-4
5 - 1000	MAPD-009278-ST1000	50	2	20	4	0.6	SM-156
5 - 1000	MAPD-009673-C2DA40	75	2	20	1.5	0.4	SM-150
5 - 1200	MAPD-009492-C2W180	75	2	—	11	3.4	SM-164
10 - 500	DS-319 ◆	50	2	25	1	0.2	TO-8-2
10 - 500	DSS-333 ◆	50	2	25	2	0.15	SF-1

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Power Splitters/Combiners (continued)

Frequency (MHz)	Part Number	Impedance (Ohms)	Channels	Isolation (dB)	Phase Balance (degrees)	Amplitude Balance (dB)	Package
Packaged Products							
10 - 1000	T-1000 ◆	50	2	45	1	0.1	Conn
10 - 1000	ESML-2-4 ◆	50	2	15	5	0.7	SM-24
10 - 2000	DS-409-4 ◆	50	4	30	2	0.1	Conn
10 - 2000	DSS-313 ◆	50	2	22	5	0.3	SF-1
10 - 2000	DS-313 ◆	50	2	23	4	0.3	FP-2
10 - 2000	PD10-0042-S	50	2	23	6	0.4	FP-2
20 - 400	TU-50 ◆	50	2	40	1	0.1	Conn
20 - 2000	DS-808-4 ◆	50	8	30	2	0.1	Conn
25 - 1000	DS-323 ◆	50	3	24	4	0.4	FP-3
25 - 1000	DS-324 ◆	50	4	20	6	0.25	FP-5
40 - 400	MTV-50 ◆	50	2	30	2	0.2	TO-5-1
400 - 820	MAPDCT0004 ◆	75	2	40	0.5	0.5	SM-55
40 - 1000	MAPD-007874-C20960	75	2	25	3	0.35	SM-138
50 - 300	M3V-50 ◆	50	3	40	1	0.1	TO-5
50 - 120	MAPD-008185-C20720	75	2	21	—	—	SM-114
750 - 1500	DS-331 ◆	50	2	10	6	0.2	TO-8
800 - 900	QH01-0016-G ◆	50	2	17	1.5	0.3	SOT-26
800 - 900	MAHYCC0001	50	2	17	1.5	0.3	SOT-26
800 - 980	MAPD-000900-12920T	50	2	27	1	0.2	SOT-26
820 - 980	ELPD-290 ◆	50	2	20	7	1.2	SM-8
824 - 896	MAPDCC0016	50	5	26	5	0.2	SOIC-16
824 - 960	MAPDCC0001	50	2	23	0.5	0.05	SOIC-8
824 - 960	MAPDCC0011	50	2	15	3	0.1	SOT-26
824 - 960	MAPDCC0005	50	3	18	2	0.6	SOIC-8
824 - 960	MAPDCC0007	50	4	23	2	0.3	SOW-16
824 - 960	MAPDCC0009	50	4	24	3	0.3	SOIC-8
824 - 960	MAPDCC0017	50	6	25	6	0.2	SOW-16
824 - 960	MAPDCC0019	50	6	25	4	0.5	SOIC-16
824 - 960	MAPDCC0021	50	8	30	5	0.4	SSOP-20
850 - 950	MAHYB900-1292T ◆	50	3	18	2	0.4	SOT-26
1000 - 2000	DS-332 ◆	50	2	10	6	0.2	TO-8
1000 - 18000	2089 Series ◆	50	2	20	4	0.2	Conn
1000 - 18000	2090-6204-00 ◆	50	2	23	5	0.3	Conn
1000 - 18000	2090 Series ◆	50	2	20	5	0.3	Conn
1510 - 1660	MAPDCC0003	50	2	20	1	0.05	SOIC-8
1700 - 1900	MAPDCC0004	50	2	20	2	0.1	SOIC-8
1700 - 2000	MAPD-007530-000/00	50	2	20	1.5	0.2	SOT-26
1700 - 2000	MAPDCC0008	50	4	18	4	0.1	SOW-16
1700 - 2000	MAPDCC0014	50	4	23	5	0.8	SOIC-16
1700 - 2000	MAPDCC0018	50	6	22	8	0.5	SOW-16
1700 - 2000	MAPDCC0020	50	6	25	4	0.5	SOIC-16
1850 - 1990	MAPDCC0002	50	2	21	1	0.05	SOIC-8
1850 - 1990	MAPDCC0006	50	3	18	7	0.3	SOIC-8
1850 - 1990	MAPDCC0015	50	5	28	6	0.2	SOIC-16
2000 - 18000	2090-6205-00 ◆	50	2	23	5	0.3	Conn
2200 - 2500	MAPDCC0010	50	2	22	2	0.1	SOT-25
3650 - 4050	MAHYB390-1303T ◆	50	3	20	3	1.4	2mm MLP
8000 - 18000	2090-6210-00 ◆	50	2	18	5	0.3	Conn

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High Performance Circulators/Isolators

Frequency (MHz)	Part Number	Fwd Pwr (Watts)	Rvs Pwr (Watts)	Loss (dB)	Isolation (dB)	IMD (dBc)	Tab Hgt (mm/in)	Temp: C° (min/max)
Drop-in								
869 - 894	MAFRIN0536	200	200	0.25	20	-75	3.18 / 0.125	-30 / +85
925 - 960	MAFRIN0512	200	200	0.25	20	-75	3.18 / 0.125	-30 / +85
1805 - 1880	MAFRIN0532	200	200	0.25	20	-75	3.18 / 0.125	-30 / +85
1930 - 1990	MAFRIN0540	200	200	0.25	20	-75	3.18 / 0.125	-30 / +85
2090 - 2190	MAFR-000276-000001	250	250	0.25	22	-70	1.57 / 0.062	-30 / +85
869 - 894	MAFRIN0537	200	100	0.25	20	-75	3.18 / 0.125	-30 / +85
925 - 960	MAFRIN0513	200	100	0.25	20	-75	3.18 / 0.125	-30 / +85
1805 - 1880	MAFRIN0533	200	100	0.25	20	-75	3.18 / 0.125	-30 / +85
1930 - 1990	MAFRIN0541	200	100	0.25	20	-75	3.18 / 0.125	-30 / +85

Standard Circulators

Frequency (MHz)	Part Number	Fwd Pwr (Watts)	Rvs Pwr (Watts)	Loss (dB)	Isolation (dB)	Tab Hgt (mm/in)	Temp: C° (min/max)
Drop-in							
869 - 894	FR11-0001 ✓	250	250	0.35	20	1.57 / 0.062	-30 / +85
869 - 894	MAFR-000083-ASICIT	250	250	0.35	20	1.57 / 0.062	-30 / +85
925 - 960	FR11-0002 ✓	250	250	0.35	20	1.57 / 0.062	-30 / +85
925 - 960	MAFR-000084-GSICIT	250	250	0.35	20	1.57 / 0.062	-30 / +85
1805 - 1880	FR11-0003 ✓	250	250	0.35	20	1.57 / 0.062	-30 / +85
1805 - 1880	MAFR-000085-DSICIT	250	250	0.35	20	1.57 / 0.062	-30 / +85
1930 - 1990	FR11-0004 ✓	250	250	0.35	20	1.57 / 0.062	-30 / +85
1930 - 1990	MAFR-000086-PSICIT	250	250	0.35	20	1.57 / 0.062	-30 / +85
2110 - 2170	FR11-0009 ✓	250	250	0.35	20	1.57 / 0.062	-30 / +85
2110 - 2170	MAFR-000087-USICIT	250	250	0.35	20	1.57 / 0.062	-30 / +85
Surface Mount							
869 - 894	MAFR-000070-ASICIR	200	200	0.35	20		-30 / +85
925 - 960	MAFR-000071-GSICIR	200	200	0.35	20		-30 / +85
1805 - 1880	MAFR-000072-DSICIR	200	200	0.35	20		-30 / +85
1930 - 1990	MAFR-000073-PSICIR	200	200	0.35	20		-30 / +85
2110 - 2170	MAFR-000076-USICIR	200	200	0.35	20		-30 / +85

Standard Isolators

Frequency (MHz)	Part Number	Fwd Pwr (Watts)	Rvs Pwr (Watts)	Loss (dB)	Isolation (dB)	Tab Hgt (mm/in)	Temp: C° (min/max)
Drop-In							
869 - 894	FR12-0001 ✓	250	20	0.35	20	1.57 / 0.062	-30 / +85
869 - 894	MAFR-000088-ASISIT	250	20	0.35	20	1.57 / 0.062	-30 / +85
925 - 960	FR12-0002 ✓	250	20	0.35	20	1.57 / 0.062	-30 / +85
925 - 960	MAFR-000089-GSISIT	250	20	0.35	20	1.57 / 0.062	-30 / +85
1805 - 1880	FR12-0003 ✓	250	20	0.35	20	1.57 / 0.062	-30 / +85
1805 - 1880	MAFR-000090-DSISIT	250	20	0.35	20	1.57 / 0.062	-30 / +85
1930 - 1990	FR12-0004 ✓	250	20	0.35	20	1.57 / 0.062	-30 / +85
1930 - 1990	MAFR-000091-PSISIT	250	20	0.35	20	1.57 / 0.062	-30 / +85
2110 - 2170	FR12-0009 ✓	250	20	0.35	20	1.57 / 0.062	-30 / +85
2110 - 2170	MAFR-000092-USISIT	250	20	0.35	20	1.57 / 0.062	-30 / +85

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Standard Isolators (continued)

Frequency (MHz)	Part Number	Fwd Pwr (Watts)	Rvs Pwr (Watts)	Loss (dB)	Isolation (dB)	Temp: C° (min/max)
Surface Mount						
869 - 894	MAFR-000053-ASISIR	200	10	0.35	20	-30 / +85
925 - 960	MAFR-000054-GSISIT	200	10	0.35	20	-30 / +85
1805 - 1880	MAFR-000055-DSISIT	200	10	0.35	20	-30 / +85
1930 - 1990	MAFR-000056-PSISIT	200	10	0.35	20	-30 / +85

Radar Circulators

Frequency (MHz)	Part Number	Fwd Pwr (Watts)	Rvs Pwr (Watts)	Loss (dB)	Isolation (dB)	Tab Hgt (mm/in)	Temp: C° (min/max)
Drop-In							
960 - 1200	MAFR-000409-000001	200	200	0.50	20	3.81 / 0.15	-10 / +85
960 - 1200	MAFR-000428-000001	200	200	0.50	20	3.81 / 0.15	-10 / +85
1200 - 1400	MAFR-000406-000001	100	100	0.30	20	2.0 / 0.078	-60 / +85
1450 - 1500	MAFR-000399-000001	200	200	0.30	20	3.81 / 0.15	-10 / +85
2700 - 2900	MAFR-000405-000001	100	100	0.30	20	2.0 / 0.078	-60 / +85
2700 - 2900	MAFR-000407-000001	200	200	0.30	20	2.0 / 0.078	-60 / +85
2700 - 3100	MAFR-000403-000001	250	250	0.30	20	3.12 / 0.123	-40 / +85
2700 - 3100	MAFR-000430-000001	250	25	0.30	20	3.12 / 0.123	-40 / +85

WiMAX Circulators

Frequency (GHz)	Part Number	Fwd Pwr (Watts)	Rvs Pwr (Watts)	Loss (dB)	Isolation (dB)	IMD (dBc)	Tab Hgt (mm/in)	Temp: C° (min/max)
Surface Mount								
2.3 - 2.5	MAFR-000229-000001	200	200	0.25	20	-65		-40 / +85
2.5 - 2.7	MAFR-000050-5S4CIT	200	200	0.25	20	-70		-40 / +85
3.3 - 3.4	MAFR-000200-5S4CIT	200	200	0.25	20	-60		-40 / +85
3.4 - 3.6	MAFR-000159-5S4CIT	200	200	0.25	20	-60		-40 / +85
Drop-In								
2.3 - 2.5	MAFR-000230-000001	200	200	0.25	20	-65	3.12 / 0.12	-40 / +85
2.5 - 2.7	MAFR-000226-000001	200	200	0.25	20	-70	3.12 / 0.12	-40 / +85
3.3 - 3.4	MAFR-000231-000001	200	200	0.25	20	-60	3.12 / 0.12	-40 / +85
3.4 - 3.6	MAFRIN0520	200	200	0.25	20	-60	3.12 / 0.12	-40 / +85

WiMAX Isolators

Frequency (GHz)	Part Number	Fwd Pwr (Watts)	Rvs Pwr (Watts)	Loss (dB)	Isolation (dB)	IMD (dBc)	Tab Hgt (mm/in)	Temp: C° (min/max)
Drop-In								
2.3 - 2.4	MAFR-000128-WD3SIT	200	60	0.50	46	-65	2.16 / 0.085	-40 / +85
2.3 - 2.5	MAFR-000247-000001	200	60	0.25	20	-65	3.12 / 0.12	-40 / +85
2.5 - 2.7	MAFR-000161-5S3SIT	200	60	0.25	20	-70	3.12 / 0.12	-40 / +85
3.3 - 3.4	MAFR-000232-000001	200	60	0.25	20	-60	8.89 / 0.35	-40 / +85
3.4 - 3.6	MAFR-000171-5S3SIT	200	60	0.25	20	-60	8.89 / 0.35	-40 / +85
3.4 - 3.6	MAFR-000127-WD3SIT	200	60	0.50	46	-65	2.16 / 0.085	-40 / +85
2496 - 2690MHz	MAFR-000121-5D4SIT	200	60	0.50	46	-65	2.16 / 0.085	-40 / +85

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RFID Circulators

Frequency (MHz)	Part Number	Fwd Pwr (Watts)	Rvs Pwr (Watts)	Loss (dB)	Isolation (dB)	Temp: C° (min/max)
Surface Mount						
860 - 872	MAFRINO495	100	100	0.25	23	-10 / +85
902 - 928	MAFRINO332	100	100	0.35	22	-10 / +85
902 - 928	MAFRINO497	100	100	0.30	22	-10 / +85
902 - 928	MAFRINO493	100	100	0.35	22	-10 / +85
950 - 956	MAFRINO496	100	100	0.25	23	-10 / +85
860 - 960	MAFRINO494	100	100	0.40	18	-10 / +85

LTE Circulator/Isolators

Frequency (MHz)	Part Number	Fwd Pwr (Watts)	Rvs Pwr (Watts)	Loss (dB)	Isolation (dB)	IMD (dBc)	Tab Hgt (mm/in)	Temp: C° (min/max)
Surface Mount								
728 - 768	MAFR-000358-000001	1000	85	0.25	23	-60	3.0 / 0.118	-40 / +90
1460.9 - 1515.9	MAFR-000398-000001	1000	85	0.25	23	-74	3.0 / 0.118	-10 / +95
2110 - 2170	MAFR-000355-000001	200	200	0.25	20	-70	3.12 / 0.123	-40 / +85
2605 - 2705	MAFR-000359-000001	676	85	0.25	23	-74	3.0 / 0.118	-10 / +95

TETRA Circulators/Isolators

Frequency (MHz)	Part Number	Fwd Pwr (Watts)	Rvs Pwr (Watts)	Loss (dB)	Isolation (dB)	IMD (dBc)	Tab Hgt (mm/in)	Temp: C° (min/max)
Surface Mount								
380 - 400	MAFR-000335-000001	100	100	0.30	24	-77	3.5 / 0.138	-30 / +75

TDSCDMA Circulator/Isolators

Frequency (MHz)	Part Number	Fwd Pwr (Watts)	Rvs Pwr (Watts)	Loss (dB)	Isolation (dB)	IMD (dBc)	Tab Hgt (mm/in)	Temp: C° (min/max)
Surface Mount								
2010 - 2025	MAFR-000164-4S3CIT	200	200	0.15	25	-75	3.12 / 0.123	-40 / +85
2010 - 2025	MAFR-000291-000001	200	200	0.25	25	-70		-40 / +85
2010 - 2025	MAFR-000326-000001	20	20	0.30	25	-55		-40 / +85

Couplers

Frequency (MHz)	Part Number	Impedance (Ohms)	Coupling (dB)	I.L. (dB)	Max. Power (W)	Isol. (dB)	Package
Packaged Products							
0.2 - 35	HH-108 ◆	50	3.5	0.1	25	40	SMA
0.5 - 400	CH-137 ◆	50	20	0.5	3	30	RH
0.5 - 400	CHS-137 ◆	50	20	0.5	3	30	SMT
1 - 1000	CH-132 ◆	50	20	0.7	5	20	SMA/BNC
2 - 32	CD-920-4 ◆	50	20	0.2	50	40	BNC
2 - 32	CH-130-4 ◆	50	30	0.1	500	30	SMA/BNC
2 - 200	HH-106 ◆	50	—	1	1	30	FP
2 - 200	HH-107 ◆	50	—	1	1	30	SMA/BNC
2 - 2000	H-9 ◆	50	4	0.4	25	55	SMA/N
5 - 120	MACPCT0017 ◆	75	17.3	—	—	45	Surface Mount
5 - 120	MACP-008249-CHO9B0	75	17	-0.4	0.25	-45	SM-155
5 - 200	HH-109 ◆	50	—	1.4	0.5	30	FP
5 - 200	HHS-109 ◆	50	—	1.4	0.5	30	SMT

Couplers (continued)

Frequency (MHz)	Part Number	Impedance (Ohms)	Coupling (dB)	I.L. (dB)	Max. Power (W)	Isol. (dB)	Package
Packaged Products							
5 - 862	MACP-009821-CG0650	75	16	25	0.25	33	SM-101
5 - 870	MACP-008248-CH0670	75	17	0.9	1	—	SM-103-A
5 - 870	ELDC-10 ◆	75	10	1	0.25	21	SM-55
5 - 870	MACPCT0038	75	17	0.6	0.25	32	SM-103
5 - 870	MACPES0004 ◆	75	10	1.3	0.25	28	SM-132
5 - 1000	ELDC-17 ◆	75	17	0.6	0.25	12	SM-55
5 - 1000	ELDC-14 ◆	75	14.3	1	0.25	34	SM-55
5 - 1000	ELDC-16 ◆	75	16	0.9	0.25	28	SM-55
5 - 1000	ELDC-12 ◆	75	11.8	1.2	0.25	12	SM-55
5 - 1000	CH-140 ◆	50	19.75	0.3	3	20	FP
5 - 1000	ELDC-20 ◆	75	20	0.6	0.25	29	SM-55
5 - 1000	ELDC-7 ◆	75	7	2.5	0.25	22	SM-55
5 - 1000	ELDC-8 ◆	75	8	1.5	0.25	21	SM-55
5 - 1000	ELDC-8X1 ◆	75	8	2.1	0.25	13.5	SM-55
5 - 1000	EMD-10-1 ◆	50	10	1.2	0.25	15	SM-22
5 - 1000	EMDC-10-1-75 ◆	75	10	1.5	0.25	12	SM-22
5 - 1000	EMDC-13-1-75 ◆	75	13	1.5	0.25	13	SM-22
5 - 1000	MACP-007486-CH0010	75	17	0.7	0.25	—	SM-1
5 - 1000	MACP-007490-CA0010	75	10.5	1.4	0.25	—	SM-1
5 - 1000	MACPCT0020	75	—	—	0.25	—	SM-155
5 - 1000	MACP-008125-CK07F0	75	20	0.4	0.25	40	SM-127
5 - 1000	MACP-008764-CH0370	75	17	0.5	0.25	—	SM-55
5 - 1000	MACP-008311-CE0370	75	14	0.8	0.25	—	SM-55
5 - 1000	MACP-009404-C80370	75	8	2.1	0.25	—	SM-55
5 - 1000	MACP-009736-CD0160	75	13	14	0.25	—	SM-22
5 - 1000	EMDC-13-2 ◆	75	13	1.4	0.25	13	SM-22
5 - 1000	EMDC-17-1-75 ◆	75	17	0.9	0.25	24	SM-22
5 - 1000	EMDC-17-5-75 ◆	75	17	0.8	0.25	29	SM-127
5 - 1000	EMDC-17-8-75 ◆	75	17	0.8	0.25	29	SM-127
5 - 1000	H-1-4 ◆	50	4	1.2	7	45	SMA/BNC
5 - 1000	MACPCT0039	75	10	1.6	0.25	23	SM-138
5 - 1000	MACPES0050 ◆	75	20	0.8	0.25	37	SM-55
5 - 1200	MACP-009730-C60370	75	12	17	0.25	—	SM-55
5 - 1200	MACP-007727-CI07B0	75	18.7	1.4	0.25	26.25	SM-123
5 - 1200	MACPCT0030	75	16.8	1.2	0.25	27	SM-55
5 - 1200	MACPES0017	75	17.1	0.8	0.25	—	SM-103
5 - 1200	MACP-007741-CG09E0	75	17	0.8	0.25	—	SM-22
5 - 1200	MACP-009467-105T12	50	10	0.5	0.25	15	SM-22
6 - 600	EMDC-16-1 ◆	50	16	0.6	0.25	21	SM-22
7 - 14	JH-113 ◆	50	—	0.5	4	20	FP
7 - 14	JHS-113 ◆	50	—	0.5	4	20	SMT
10 - 500	CH-134 ◆	50	10.8	1.6	1	20	FP
10 - 500	CH-138 ◆	50	10.8	1.6	1	17	TO-8
10 - 500	CHS-134 ◆	50	10.8	1.6	1	20	SMT
10 - 500	HH-110 ◆	50	—	1.4	1	20	FP
10 - 500	HH-127 ◆	50	—	1.4	1	20	TO-8
10 - 500	HHS-110 ◆	50	—	1.4	1	20	SMT
15 - 1000	MACPCT0040	50	9.9	1.3	0.25	25	SM-22B

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Couplers (continued)

Frequency (MHz)	Part Number	Impedance (Ohms)	Coupling (dB)	I.L. (dB)	Max. Power (W)	Isol. (dB)	Package
Packaged Products							
20 - 40	JH-114 ◆	50	3	0.5	5	20	FP
20 - 40	JH-133 ◆	50	3	0.5	5	20	TO-8
20 - 40	JHS-114 ◆	50	—	0.5	5	20	SMT
20 - 140	JH-10-4 ◆	50	1	0.6	4	20	SMA
20 - 200	JH-131 ◆	50	—	1	0.25	20	SMA
20 - 300	HH-105 ◆	50	—	1	0.5	28	TO-5
20 - 2000	HH-128 ◆	50	—	3	0.5	15	FP
30 - 1000	DCG-10-4 ◆	50	11	1.5	5	30	SMA
30 - 3000	H-183-4 ◆	50	4.5	0.7	5	35	SMA
40 - 80	JH-115 ◆	50	3	0.5	5	20	FP
40 - 80	JHS-115 ◆	50	3	0.5	1	20	SMT
40 - 1000	EMDC-16-2-75 ◆	75	16	0.6	0.25	23	SM-55
40 - 1000	MACPES0028 ◆	75	7	1.9	0.25	22	SM-137
80 - 160	JH-119 ◆	50	3	0.75	4	20	FP
80 - 160	JHS-119 ◆	50	3	0.75	4	20	SMT
100 - 200	JH-121 ◆	50	—	0.75	4	20	FP
100 - 200	JHS-121 ◆	50	—	0.75	4	20	SMT
175 - 350	JH-136 ◆	50	—	0.5	4	20	FP
175 - 350	JHS-136 ◆	50	—	0.5	4	20	SMT
200 - 400	JHS-142 ◆	50	0	0.5	5	18	SMT
250 - 500	JH-139 ◆	50	—	0.5	4	15	FP
250 - 500	JHS-139 ◆	50	—	0.5	4	15	SMT
350 - 450	EMDC-20-1 ◆	50	20	0.3	0.25	15	SM-22
350 - 450	MACP-007984-MDC201	50	20	0.3	0.25	15	SM-22
500 - 1000	2020-6600-06 ◆	50	6	0.15	50	31	Conn
500 - 1000	2020-6601-10 ◆	50	10	0.15	50	35	Conn
500 - 1000	2020-6602-20 ◆	50	20	0.15	50	45	Conn
500 - 1000	2020-6603-30 ◆	50	30	0.15	50	55	Conn
500 - 1000	JH-140 ◆	50	—	0.3	25	18	FP
500 - 18000	2025Series ◆	50	6-20	0.3-0.7	50	15-22	Conn
500 - 18000	2026-6010-10 ◆	50	10	0.9	50	15	Conn
500 - 18000	2026-6012-20 ◆	50	20	0.9	50	15	Conn
500 - 18000	203XSeries ◆	50	3	0.2	—	25	Conn
824 - 960	MACPCC0002	50	17	0.3	2	32	SOIC-8
1000 - 2000	2020-6604-06 ◆	50	6	0.2	50	31	Conn
1000 - 2000	2020-6605-10 ◆	50	10	0.2	50	35	Conn
1000 - 2000	2020-6606-20 ◆	50	20	0.2	50	45	Conn
1000 - 2000	2020-6607-30 ◆	50	30	0.2	50	55	Conn
1000 - 2000	JH-141 ◆	50	—	0.3	25	18	FP
1000 - 12400	2026-6001-10 ◆	50	10	0.35	50	18	Conn
1000 - 12400	2026-6003-20 ◆	50	20	0.35	50	17	Conn
1000 - 18000	2026-6007-10 ◆	50	10	0.3	50	15	Conn
1000 - 18000	2026-6009-20 ◆	50	20	0.3	50	17	Conn
1700 - 2000	MACPCC0001	50	17	0.3	2	34	SOIC-8
2000 - 4000	2020-6608-06 ◆	50	6	0.2	50	28	Conn
2000 - 4000	2020-6609-10 ◆	50	10	0.2	50	32	Conn
2000 - 4000	2020-6610-20 ◆	50	20	0.2	50	42	Conn

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Couplers (continued)

Frequency (MHz)	Part Number	Impedance (Ohms)	Coupling (dB)	I.L. (dB)	Max. Power (W)	Isol. (dB)	Package
Packaged Products							
2000 - 4000	2020-6611-30 ◆	50	30	0.2	50	52	Conn
2000 - 18000	2026-6004-10 ◆	50	10	30	50	15	Conn
2000 - 18000	2026-6006-20 ◆	50	20	30	50	18	Conn
2600 - 5200	2020-6612-06 ◆	50	6	0.25	50	26	Conn
2600 - 5200	2020-6613-10 ◆	50	10	0.25	50	30	Conn
2600 - 5200	2020-6614-20 ◆	50	20	0.25	50	40	Conn
2600 - 5200	2020-6615-30 ◆	50	30	0.25	50	50	Conn
4000 - 8000	2020-6616-06 ◆	50	6	0.25	50	28	Conn
4000 - 8000	2020-6617-10 ◆	50	10	0.25	50	30	Conn
4000 - 8000	2020-6618-20 ◆	50	20	0.25	50	40	Conn
4000 - 8000	2020-6619-30 ◆	50	30	0.25	50	50	Conn
7000 - 12400	2020-6620-06 ◆	50	6	0.4	50	21	Conn
7000 - 12400	2020-6621-10 ◆	50	10	0.4	50	30	Conn
7000 - 12400	2020-6622-20 ◆	50	20	0.3	50	38	Conn
7000 - 12400	2020-6623-30 ◆	50	30	0.3	50	47	Conn
7000 - 18000	2020-6624-06 ◆	50	6	0.6	50	21	Conn
7000 - 18000	2020-6625-10 ◆	50	10	0.4	50	30	Conn
7000 - 18000	2020-6626-20 ◆	50	20	0.5	50	35	Conn
7000 - 18000	2020-6627-30 ◆	50	30	0.5	50	45	Conn
12400 - 18000	2020-6628-06 ◆	50	6	0.6	50	21	Conn
12400 - 18000	2020-6629-10 ◆	50	10	0.4	50	30	Conn
12400 - 18000	2020-6630-20 ◆	50	20	0.5	50	35	Conn
12400 - 18000	2020-6631-30 ◆	50	30	0.5	50	42	Conn

Capacitors

Capacitance (pf)	Part Number	Pad Types	Standoff Voltage (V)	Package
Die Products				
50	MA4M1050	Round Bonding Pad	100	Die
100	MA4M1100	Round Bonding Pad	100	Die
200	MA4M2100	Round Bonding Pad	100	Die
10	MA4M3010	Square Bonding Pad	200	Die
30	MA4M3030	Square Bonding Pad	200	Die
50	MA4M3050	Square Bonding Pad	200	Die
100	MA4M3100	Square Bonding Pad	50	Die
150	MA4M3150	Square Bonding Pad	50	Die

Inductors

Self Resonant Frequency (MHz)	Part Number	Inductance (nH)	Qmin	Package
Packaged Products				
480	EIN8 ◆	273	90	SM-52
570	EIN9 ◆	246	90	SM-52
580	EIN11 ◆	165	90	SM-52
635	EIN12 ◆	193	90	SM-52
700	EIN10 ◆	180	90	SM-52
800	EIN14 ◆	146	90	SM-52
840	EIN15 ◆	123	90	SM-52
970	EIN13 ◆	97	90	SM-52
1440	EIN16 ◆	53	90	SM-52

CATV Diplexers

Frequency (MHz)	Part Number	Crossover Isol. (dB)	LP/HP Isol. (dB)	LP/HP RL (dB)	Common RL (dB)	Flatness (dB)	LP Ins Loss (dB)	HP Ins Loss (dB)	Package
Packaged Products									
5 - 30 / 46 - 870	MAFLCT0066	20	47/20/46	18/20	20	—	0.7	0.75	SM-160
5 - 30 / 46 - 1000	MAFL-007492-CD0A00	—	47/20/46	18/18	18	—	0.7	0.75	SMT
5 - 40 / 52 - 870	MAFLCT0031	—	55/55	22/20	22/20	—	0.5	0.5	SMT-142
5 - 40 / 52 - 870	MAFLES0122	41	50	22/22	22	0.85	1	1	Vertical plug-in
5 - 42 / 54 - 870	MAFLES0102	—	45/45	18/18	18	—	0.5	0.5	SMT
5 - 42 / 54 - 1000	MAFL-007654-CD0A10	—	55/50	16	16	—	0.5	0.5	SM-161
5 - 42 / 54 - 1000	MAFL-009055-CD4254	—	55/50	16	16	—	0.5	0.5	SM-162
5 - 42 / 54 - 1000	MAFL-009810-CD0550	33	55/50	21/22	22	0.5	0.5	0.5	SM-85
5 - 42 / 54 - 1100	MAFL-008098-CD0550	—	50	21	21	0.5	0.5	0.5	SM-85
5 - 65 / 94 - 860	MAFLCT0083	—	59/60/59	16	16	—	0.92	0.92	SM-161
5 - 65 / 88 - 1000	MAFLCT0027	—	50/50	20	20	—	0.5	0.5	SMT
5 - 65 / 88 - 1000	MAFL-007988-CD0A10	—	55/50	16	16	—	0.5	0.5	SM-161
5 - 1000	MAFLCT0027 ◆	75	—	0.5	50	—	—	—	SMT
50 - 870 / 975 - 1525	MAFL-007898-CD0ACO	—	40	15/14	15/14	—	1.8	1.2	SMT

MoCA Filters

Frequency (MHz)	Part Number	LP/HP Isol (dB)	Common RL (dB)	LP Ins Loss ((dB))	HP Ins Loss (dB)	Package
Packaged Products						
5 - 42/54 - 1002/1125 - 1525	MAFL-009010-CT0B90	45/48	12	1.8	2.0	—
5 - 1002 / 1125 - 1550	MAFL-008290-CD0ACO	40/40	13/13	1.4	1.7	SM-172
50 - 870 / 975 - 1525	MAFL-007898-CD0ACO	40/42	15/14	1.8	1.2	SM-172
50 - 870 / 950 -1550	MAFL-008195-CD0ACO	39/37	14/12	1.5	2.0	SM-172
50 - 870	MAFL-008070-CLOAD0	50/50	13	1.5	30	SM-173
50 - 870 / 975 - 1025	MAFL-008571-CD0AFO	37/37	12	2.0	6	SM-175
870 - 925	MAFLCT0081	45/45	18	1.2	-	SM-171
975 - 1025	MAFL-008867-CB0B40	14/14	15	2.0	-	SM-180
1125 - 1175	MAFL-008868-CB0B50	14/14	15	2.0	-	SM-180
1300 - 1350	MAFL-008869-CB0B60	14/14	15	2.0	-	SM-180
1475 - 1525	MAFL-008870-CB0B70	14/14	15	2.0	-	SM-180

Filters/Diplexers

Frequency (MHz)	Part Number	Impedance (Ohms)	Passband (MHz)	I.L. (dB)	Rejection (dB)	Rejection BW (dB)	Package
Packaged Products							
825 - 1990	MA4DP918-1277 ◆	50	280	0.9	28	270	3mm sq MLP
843 - 925	CDMA 900 ◆	50	27	0.5	105	0	Conn

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M/A-COM Technology Solutions IC-based switches are used extensively in commercial and military electronics applications. The switches range from DC to 20 GHz and are designed specifically for voice and data applications.

- Cordless and mobile phones
- Cellular base stations
- Satellite radio
- GPS & DAB
- 2.4 GHz and 5.0 GHz WLAN
- VSAT
- CATV and broadband
- Bluetooth
- RFID
- Fixed Wireless Access (FWA)
- Instrumentation
- Commercial and military radar
- Aerospace and Defense products

M/A-COM Technology Solutions diode-based HMIC silicon series-shunt PIN diode switches provide outstanding frequency performance from 50 MHz to 20 GHz. Our AlGaAs series-shunt PIN diode switches provide remarkable frequency performance from 50 MHz to 50 GHz.

- HMIC and AlGaAs switches are suitable for microwave and millimeter wave control circuits for military, instrumentation, and optoelectronic applications.
- HMIC switches: 0.9 dB loss and 42 dB isolation at 20 GHz
- AlGaAs switches: 0.7 dB loss and 35 dB isolation at 50 GHz



General

Frequency (MHz)	Part Number	Type	I.L. (dB)	Isol. (dB)	Input IP3 (dBm)	Package
Die Products						
0 - 2000	MASW2040	DPDT	0.4	20	46	Die
0 - 6000	MASW6030G	DPDT	0.6	40	45	Die
0 - 6000	MASW6020G	SPST	0.9	64	46	Die
50 - 20000	MA4SW110	SPST	0.7	42	50	Die
50 - 20000	MASW-001100-1190	SPST	0.7	42	50	Die
50 - 50000	MA4AGSW1	SPST	0.3	46	40	Die
10000 - 50000	MA4AGSW1A	SPST	1.2	30	40	Die
0 - 3000	MASW2000	SPDT	0.6	35	53	Die
0 - 4000	MASW4030G	SPDT	0.8	50	46	Die
0 - 6000	MASW6010G	SPDT	0.5	45	46	Die
0 - 20000	MASW20000	SPDT	1.7	50	43	Die
50 - 20000	MA4SW210	SPDT	0.7	42	50	Die
50 - 20000	MASW-002100-1191	SPDT	0.7	42	50	Die
50 - 26500	MASW-002102	SPDT	1.2	40	43	Die
50 - 50000	MA4AGSW2	SPDT	0.7	33	40	Die
2000 - 18000	MA4SW210B-1	SPDT	1.25	40	47	Die
2400 - 5800	MASW-008206-000DIE	SPDT	0.7	30	54	Die
77000	MA4GC6773	SPDT	1.2	24	40	Die
50 - 20000	MA4SW310	SP3T	0.9	42	50	Die
50 - 20000	MASW-003100-1192	SP3T	0.9	42	50	Die
50 - 26500	MASW-003102	SP3T	1.3	40	43	Die
50 - 50000	MA4AGSW3	SP3T	0.8	31	40	Die
500 - 2500	MASWSS0100 ♦	SP3T	0.5	20	69	Die
1000 - 4000	MASW-009276-000DIE	SP3T	0.51	24	55	Die
2000 - 18000	MA4SW310B-1	SP3T	1.25	40	47	Die
2400 - 2500	MASW-008902-000DIE	SP3T	0.6	31.5	55	Die
77000	MA4GC6774	SP3T	1.4	24	40	Die
0 - 4000	MASW4060G	SP4T	1.3	50	46	Die
50 - 20000	MA4SW410	SP4T	0.9	34	50	Die
50 - 26500	MASW-004100-1193	SP4T	0.9	34	43	Die
50 - 26500	MASW-004102	SP4T	1.4	35	43	Die
50 - 50000	MA4AGSW4	SP4T	1	32	40	Die
2000 - 18000	MA4SW410B-1	SP4T	1.4	35	47	Die
50 - 20000	MA4SW510	SP5T	0.9	38	50	Die
50 - 26500	MASW-005100-1194	SP5T	0.9	38	43	Die
50 - 26500	MASW-005102	SP5T	1.8	35	43	Die
50 - 50000	MA4AGSW5	SP5T	1.9	30	40	Die
2000 - 18000	MA4SW510B-1	SP5T	1.8	35	47	Die
77000	MA4GC6772	SP5T	4	24	40	Die
50 - 26500	MASW-006102	SP6T	1.2	40	43	Die
500 - 2500	MASWSS0091	SP6T	0.5	38	70	Die
2000 - 18000	MA4SW610B-1	SP6T	1.9	39	47	Die
50 - 40000	MA4AGSW8-1	SP8T	2	32	40	Die
50 - 40000	MA4AGSW8-2	SP8T	2	35	35	Die
1800 - 4000	MA4BN1840-1	Bias Network	0.15	35	—	Die
0 - 4000	MASWSS0184	DPDT	0.7	30	57.5	3 mm PQFN 12
0 - 4000	MASW-007587	DPDT	0.7	38	59	3 mm PQFN 12
0 - 6000	MASWSS0094 ♦	DPDT	0.8	43	45	3 mm PQFN 12
0 - 6000	MASWSS0107	DPDT	0.95	22	52	3 mm PQFN 12

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General (continued)

Frequency (MHz)	Part Number	Type	I.L. (dB)	Isol. (dB)	Input IP3 (dBm)	Package
Packaged Products						
0 - 6000	MASWSS0129	DPDT	0.75	30	49	3 mm PQFN 12
500 - 3000	MASWSS0040 ◆	DPDT	0.8	19	55	3 mm PQFN 12
500 - 3000	MASW-009460	DPDT	0.7	19	52	3 mm PQFN 12
500 - 3000	MASWSS0130	DPDT	0.6	25	55	3 mm PQFN 12
2000 - 6000	MASWSS0190	DPDT	0.75	43	50	2 mm UTDFN 8
4500 - 6000	MASWSS0039 ◆	DPDT	0.8	30	52	3 mm PQFN 12
4500 - 6000	MASWSS0175	DPDT	0.8	30	52	3 mm PQFN 12
0 - 2500	SW-259 ◆	SPST	1	70	46	SOIC-8
0 - 2500	MASWSS0162	SPST	1	70	46	SOIC-8
0 - 3000	SW-214	SPST	1.3	25	46	FP-13
0 - 3000	SW-311	SPST	1.3	27	46	CR-9
0 - 3000	SW05-0311	SPST	1.3	25	46	CR-9
0 - 4000	MASW-007070-000100	SPST	0.85	25	48	CSP-1
2 - 3000	MASW-001150-1356	SPST	0.6	33	—	Surface Mount
5 - 3000	SW-215 ◆	SPST	2.9	27	46	DI-1
5 - 3000	SW-216 ◆	SPST	2.9	27	46	DI-1
5 - 4000	SW-231 ◆	SPST	2.8	22	46	FP-16
10 - 1000	SW-121 ◆	SPST	1	40	30	DI-1
50 - 4000	MA4SW101-287T ◆	SPST	0.4	38	40	SOT-23
50 - 6000	MA4AGSW900-287T ◆	SPST	0.6	40	37	SOT-23
300 - 4000	MASWSS0148	SPST	55	1.6	49	3 mm PQFN 12
500 - 2000	SW-393 ◆	SPST	1.6	42	39	SOIC-8
0 - 2000	SW-224	SPDT	0.8	30	46	TO-5-3
0 - 2000	SW-225	SPDT	0.8	30	46	FP-13
0 - 2000	SW-395 ◆	SPDT	0.5	20	45	SOT-26
0 - 2000	MASWSS0179	SPDT	0.5	20	45	SOT-26
0 - 2500	SW-239 ◆	SPDT	0.6	70	46	SOIC-8
0 - 2500	MASWSS0201	SPDT	1.1	46	45	3 mm PQFN 12
0 - 2500	MASWSS0157	SPDT	0.6	70	46	SOIC-8
0 - 2500	SW-277 ◆	SPDT	0.5	40	61	SOIC-8
0 - 2500	MASWSS0161	SPDT	0.5	40	61	SOIC-8
0 - 2500	SW-338 ◆	SPDT	0.5	33	46	SOIC-8
0 - 2500	MASWSS0180	SPDT	0.5	33	46	SOIC-8
0 - 3000	MASWSS0192	SPDT	0.18	30	53	SC-70 (SOT-363)
0 - 3000	MASWSS0115	SPDT	0.3	22	46	SC-70 (SOT-363)
0 - 3000	MASW-008075	SPDT	0.4	25	48	SC-70 (SOT-363)
0 - 3000	MASWSS0005 ◆	SPDT	0.3	21	45	SOT-26
0 - 3000	MASWSS0136	SPDT	27	0.4	51.5	SC-70 (SOT-363)
0 - 3000	MASWSS0176	SPDT	0.3	21	45	SOT-26
0 - 3000	MASWSS0006 ◆	SPDT	0.4	20	60	SOT-26
0 - 3000	MASWSS0181	SPDT	0.4	20	60	SOT-26
0 - 3000	MASWSS0029 ◆	SPDT	0.4	24.5	60	SOT-26
0 - 3000	SW-110	SPDT	1.1	18	46	CR-9
0 - 3000	SW-276	SPDT	0.4	70	61	CR-2
0 - 3000	SW-312	SPDT	1.2	30	48	CR-9
0 - 3000	SW-313	SPDT	1.2	35	46	CR-9
0 - 3000	SW-425 ◆	SPDT	0.4	20	53	SOT-26
0 - 3000	MASWSS0143	SPDT	0.4	20	53	SOT-26
0 - 3000	SW-437 ◆	SPDT	0.3	21	55	SC-70 (SOT-363)
0 - 3000	MASWSS0166	SPDT	0.3	21	55	SC-70 (SOT-363)
0 - 3000	SW-438 ◆	SPDT	0.7	25	55	SC-70 (SOT-363)
0 - 3000	MASWSS0151	SPDT	0.7	25	55	SC-70 (SOT-363)
0 - 3000	SW-439 ◆	SPDT	0.8	50	85	MSOP-10

General (continued)

Frequency (MHz)	Part Number	Type	I.L. (dB)	Isol. (dB)	Input IP3 (dBm)	Package
Packaged Products						
0 - 3000	MASWSS0169	SPDT	0.8	50	85	MSOP-10
0 - 3000	SW-442 ◆	SPDT	28	0.8	50	SOT-26
0 - 3000	MASW-007935	SPDT	28	0.8	50	SOT-26
0 - 3000	SW-456 ◆	SPDT	0.3	22	52	SC-70 (SOT-363)
0 - 3000	MASW-007221	SPDT	0.3	22	52	SC-70 (SOT-363)
0 - 3000	MASW-008899	SPDT	0.4	27	48	SC-70 (SOT-363)
0 - 3000	SW10-0312	SPDT	1.2	27	46	CR-9
0 - 3000	SW10-0313	SPDT	1.2	35	46	CR-9
0 - 3000	MASWSS0117 ◆	SPDT	0.3	25	56	SC-70 (SOT-363)
0 - 3000	MASWSS0204	SPDT	0.3	25	56	SC-70 (SOT-363)
0 - 6000	MASWSS0202	SPDT	0.55	25	50	3 mm PQFN 12
0 - 6000	MASW-009444	SPDT	0.3	23	47	1 mm PQFN 6
0 - 4000	SW-226	SPDT	1.5	25	46	CR-2
0 - 4000	SW-227	SPDT	1.4	35	46	CR-2
0 - 4000	SW-228	SPDT	1	22	46	CR-2
0 - 4000	MASW-007071-000100	SPDT	1.8	30	46	CSP-1
0 - 5000	MASW-008853	SPDT	0.45	15	56	SC-70 (SOT-363)
0 - 6000	MASW-000822-12770T	SPDT	0.35	26	65	3 mm PQFN
0 - 6000	MASWSS0070 ◆	SPDT	0.55	24	52	3 mm PQFN 12
0 - 6000	MASWSS0200	SPDT	0.55	24	52	3 mm PQFN 12
0 - 6000	MASW-007107	SPDT	0.75	20	50	2 mm PQFN 8
0 - 6000	MASWSS0093	SPDT	0.85	28	53	3 mm PQFN 12
0 - 6000	MASW-007588	SPDT	0.85	30	53	3 mm PQFN 12
0 - 7000	MASW-007921	SPDT	0.6	25	59	2 mm PQFN 8
5 - 2000	SW-233 ◆	SPDT	1.5	40	46	FP-16
5 - 2000	SW-236 ◆	SPDT	1.5	40	46	FP-16
5 - 3000	SW-205 ◆	SPDT	2.6	35	46	DI-1
5 - 3000	SW-206 ◆	SPDT	2.6	35	46	DI-1
5 - 3000	SW-207 ◆	SPDT	2.3	18	46	DI-1
10 - 3000	SW-137	SPDT	1.6	32	46	DI-1
10 - 6000	MASW-000825-1277	SPDT	0.29	28.6	64	3 mm PQFN 16
10 - 6000	MASW-000834-1356	SPDT	0.3	41.8	65	4 mm PQFN 16
20 - 1500	SW-162 ◆	SPDT	1.5	40	25	DI-1
20 - 2000	SW-112 ◆	SPDT	2.2	50	30	DI-1
50 - 3000	SW-485 ◆	SPDT	0.25	23	46	SC-70 (SOT-363)
500 - 3000	MASWSS0167	SPDT	25	0.3	48	1.2x1.5 mm PQFN 6
500 - 2000	SW-394 ◆	SPDT	1.5	35	47	SOIC-8
500 - 3000	MASWSS0024 ◆	SPDT	0.7	50	43	MSOP-8-EP
500 - 3000	MASWSS0178	SPDT	0.7	50	43	MSOP-8-EP
500 - 3000	SW-475 ◆	SPDT	0.6	54	43	4 mm PQFN 16
500 - 3000	MASWSS0121	SPDT	0.6	54	43	4 mm PQFN 16
800 - 2000	SW-335 ◆	SPDT	0.8	50	50	SOIC-8
2010 - 2025	MASW-000823-12770T	SPDT	0.35	31	65	3 mm PQFN
0 - 2500	MASWSS0060 ◆	SP3T	0.55	21	62	3 mm PQFN 12
0 - 2500	MASWSS0065 ◆	SP3T	0.5	20	59	3 mm PQFN 12
0 - 2500	MASWSS0199	SP3T	0.5	20	59	3 mm PQFN 12
0 - 2500	SW-489 ◆	SP3T	0.5	18.5	66	3 mm PQFN 12
0 - 3000	MASWSS0144	SP3T	24	0.6	55	3 mm PQFN 12
0 - 3000	MASWSS0028 ◆	SP3T	0.3	24	50	2 mm PQFN 8
0 - 3000	MASW-008330	SP3T	0.3	24	50	2 mm PQFN 8

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General (continued)

Frequency (MHz)	Part Number	Type	I.L. (dB)	Isol. (dB)	Input IP3 (dBm)	Package
Packaged Products						
0 - 3500	MASW-008955	SP3T	0.55	22	54	2 mm PDFN 8
0 - 4000	MASW-009359	SP3T	0.55	27	65	2 mm STQFN 12
5 - 2000	SW-241 ◆	SP3T	2.5	35	46	DI-5
20 - 1500	SW-163 ◆	SP3T	2	35	25	DI-2
500 - 3000	MASWSS0191	SP3T	0.5	30	58	2 mm STDFN
0 - 2000	SW-415	SP4T	1.8	37	46	FP-25
0 - 2000	SW-419 ◆	SP4T	1	39	46	SO-24
0 - 3000	MASW-007813	SP4T	0.8	27	58	3 mm PQFN 16
0 - 3000	MASWSS0118 ◆	SP4T	0.65	23	57	4 mm PQFN 16
0 - 3000	MASW-008566	SP4T	0.65	23	57	4 mm PQFN 16
0 - 3000	SW-314	SP4T	1.8	30	46	CR-14
0 - 3000	SW15-0314	SP4T	1.8	25	46	CR-14
0 - 4000	SW-243 ◆	SP4T	0.7	35	46	CR-4
0 - 4000	MASWCC0010	SP4T	2.3	38	40	CSP-2
5 - 2000	SW-255 ◆	SP4T	2.1	35	68	DI-5
5 - 2000	SW-261 ◆	SP4T	2.1	35	46	FP-17
10 - 1000	SW-124 ◆	SP4T	1.4	40	30	DI-2
10 - 2000	SW-114 ◆	SP4T	2.8	35	30	DI-2
20 - 1500	SW-164 ◆	SP4T	2	35	25	DI-2
20 - 2000	SW-369 ◆	SP4T	2.8	40	44	FP-26
0 - 2000	SW-284	SP6T	2.8	28	46	FP-27
0 - 4000	MASWCC0006	SP6T	2.1	25	40	CSP-2
500 - 2500	MASW-000105	SP6T	0.5	41	60	4 mm PQFN 20
0 - 3000	SW-283	Transfer	2.1	20	50	CR-4
75 Ohm or CATV						
5 - 1000	MASW-008177 ◆	SPST	0.65	53	52	3 mm PQFN 12
5 - 1000	MASW-009155	SPST	1	55	47	3 mm PQFN 12
5 - 1000	MASWSS0103 ◆	SPDT	1	63	52	4 mm PQFN 20
5 - 1000	MASW-008153	SPDT	1	63	52	4 mm PQFN 20
5 - 1000	MASW-009101	SPDT	1.2	55	47	3 mm PQFN 16
5 - 3000	MASW-008801	SPDT	1	52	47	3 mm PQFN 16

Switches with Drivers

Frequency (MHz)	Part Number	Type	I.L. (dB)	Isol. (dB)	Switching Speed (ns)	Input IP3 (dBm)	Package
Packaged Products							
10 - 3000	MASW-007076-000100	SPST	2.2	35	50	46	SOW-24
10 - 500	S10 ◆	SPST	2	55	5	25	TO-8
10 - 500	S11 ◆	SPST	2	55	2	25	TO-8
0 - 3000	SW-313	SPDT	1.2	35	18	46	CR-9
0 - 3000	MASW-007075-000100	SPDT	2.2	33	50	46	SOW-24
0 - 3000	MASW-007074-000100	SP3T	2.3	30	50	46	SOW-24
0 - 3000	SW-314	SP4T	1.8	30	25	46	CR-14
0 - 3000	MASW-007073-000100	SP4T	2.3	25	50	46	SOW-24
0 - 3000	MASWCC0009	SP4T	2.5	25	50	46	QSOP-24

Delay Line

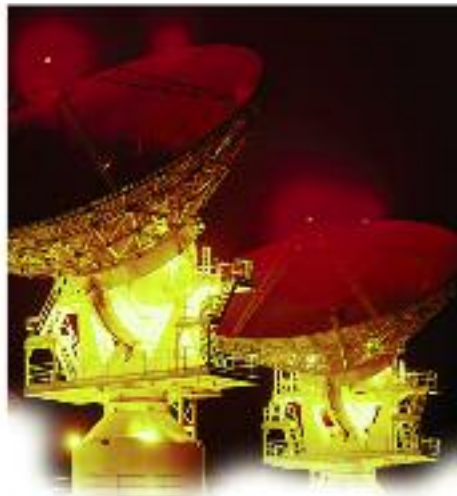
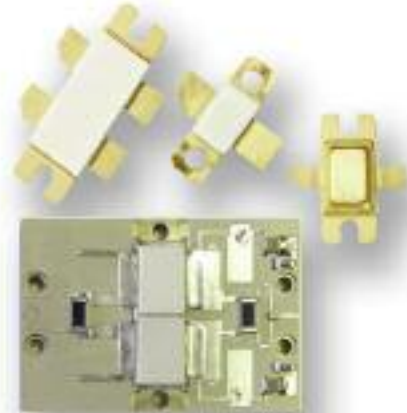
Frequency (MHz)	Part Number	I.L. (dB)	Input P1db (dBm)	Bits (#)	LSB (degree)	Range (degree)	Package
Packaged Products							
1800 - 2400	MAMUSM0008	5	27	50	20	-	15mm BGA



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Bipolar

Frequency (MHz)	Part Number	Operating Voltage (V)	Pout (W)	Min. Gain (dB)	Min. Efficiency (%)	Package
Packaged Products						
1 - 30	MRF421	12.5	100	10	40	P208
1.5 - 30	MRF422	28	150	10	40	P208
1.5 - 30	MRF426	28	25	22	35	P-222
1.5 - 30	MRF428	50	150	13	45	P-208
2 - 60	MRF429	50	150	13	45	P-208
2 - 30	MRF448	50	250	12	45	P208
2 - 30	MRF454	12.5	80	12	50	P-208A
2 - 30	MRF455	12.5	60	13	55	P-222
30 - 200	MRF314	28	30	10	50	P-222A
30 - 200	MRF316	28	80	10	55	P209
30 - 200	MRF317	28	100	9	55	P-210
100 - 400	MRF313	28	1	15	45	P-227
100 - 400	MRF392	28	125	10	55	P-226
100 - 500	MRF393	28	100	9.5	55	P-226
100 - 500	MRF587	15	—	13	—	Ceramic
150 - 400	MRF321	28	10	12	50	P-232
150 - 400	MRF323	28	20	10	50	P-221
225 - 400	2N6439	28	60	7.8	55	P209
225 - 400	MRF327	28	80	7.3	50	P209
850 - 1400	PH0814-40	28	42	6.8	40	Ceramic
960 - 1215	MAPRST0912-50	50	50	9.1	40	P51H
960 - 1215	MAPRST0912-350	50	300	9.5	40	P-94C
960 - 1215	MAPR-000912-500S00	50	500	9	45	P-94C
960 - 1215	MRF10005	28	5	8.5	45	P-213
960 - 1215	MRF1000MB	18	0.7	10	—	P-224
960 - 1215	MRF10031	36	30	9	40	P-203
960 - 1215	MRF1004MB	35	4	10	40	P-224
960 - 1215	MRF10120	36	120	8	50	P-217
960 - 1215	MRF1090MA	50	90	8.4	35	P-230
960 - 1215	MRF1090MB	50	90	8.4	35	P-224
960 - 1215	MRF1150MA	50	150	7.8	35	P-230
960 - 1215	MRF1150MB	50	150	7.8	35	P-224
1025 - 1150	MRF10150	50	150	9.5	40	P-203
1025 - 1150	MRF10350	50	350	8.5	40	P-219
1025 - 1150	MRF10502	50	500	8.5	40	P-212
1025-1150	MAPR-001011-850S00	50	850	—	—	P-94I
1030	MAPRST1030-1KS	50	1000	8	45	P94I
1030 - 1090	PH1090-15L	45	15	9	40	P-8TF
1030 - 1090	PH1090-175L	45	175	8.3	55	P-51F
1030 - 1090	PH1090-350L	45	350	8	55	P-94C
1030 - 1090	PH1090-550S	50	550	7.4	55	P-94C
1030 - 1090	PH1090-700B	50	700	7.5	50	P-154C
1030 - 1090	PH1090-75L	45	75	9	45	P-51D
1200 - 1400	MAPRST0002	40	50	9.5	50	P-8T
1200 - 1400	MAPRST1214-6UF	36	6	8.75	40	P-8TF
1200 - 1400	MAPRST1214-30UF	36	30	7.5	45	P-51H
1200 -1400	MAPRST1214-150UF	36	150	7.4	45	P-94C
1200 - 1400	PH1214-0.85L	11.5	0.85	9.3	30	P-8TA
1200 - 1400	PH1214-100EL	28	100	6	52	P-51I

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Bipolar (continued)

Frequency (MHz)	Part Number	Operating Voltage (V)	Pout (W)	Min. Gain (dB)	Min. Efficiency (%)	Package
Packaged Products						
1200 - 1400	PH1214-110M	40	110	7.4	50	P-23C
1200 - 1400	PH1214-12M	28	12	9	45	P-8TF
1200 - 1400	PH1214-20EL	28	20	9.5	50	P-8TA
1200 - 1400	PH1214-220M	40	220	7.4	50	P-94C
1200 - 1400	PH1214-25L	28	25	9.5	50	P-8TA
1200 - 1400	PH1214-25M	28	25	9.5	50	P-8TA
1200 - 1400	PH1214-25S	28	25	9.5	50	P-8TA
1200 - 1400	PH1214-2M	28	2	7	45	P-8TA
1200 - 1400	PH1214-300M	40	300	8.75	50	P-94C
1200 - 1400	PH1214-30EL	28	30	7.8	50	P-8TA
1200 - 1400	PH1214-3L	16.5	3	5.7	40	P-8TA
1200 - 1400	PH1214-40M	40	40	8.5	50	P-8TA
1200 - 1400	PH1214-4M	28	4	7	45	P-8TF
1200 - 1400	PH1214-55EL	28	55	6.6	50	P-98
1200 - 1400	PH1214-6M	28	6	7	45	P-8TF
1200 - 1400	PH1214-80M	40	80	7.5	50	P-51D
1200 - 1400	PH1214-8M	28	8	7	45	P-8TF
1450 - 1600	PH1516-10	25	10	10	40	Ceramic
1450 - 1500	PH1516-100	26	100	8	30	Ceramic
1450 - 1500	PH1516-60	26	60	8	30	Ceramic
1600 - 1640	MRF16006	28	6	7.4	40	P-206
1600 - 1640	MRF16030	28	30	7.5	40	P-207
1600 - 1640	MRF3104	20	0.5	10.5	—	P-228
1600 - 1700	PH1617-2	25	2	10	35	Ceramic
1600 - 1700	PH1617-30	25	30	10	40	Ceramic
1615 - 1685	PH1617-60	26	60	9	40	Module
2200 - 2600	PH2226-110M	36	110	8	45	P-94D
2200 - 2600	PH2226-50M	36	50	8	45	P-51D
2300	PH2323-1	28	1	8	30	Ceramic
2300	PH2323-14	28	14	7.6	35	Ceramic
2300	PH2323-3	28	3	8	30	Ceramic
2300	PH2323-5	28	5	8	35	Ceramic
2700 - 2900	PH2729-110M	36	110	6.8	35	P-94D
2700 - 2900	PH2729-130M	36	130	7.5	40	P-51G
2700 - 2900	PH2729-150M	38	150	8.3	38	P-94D
2700 - 2900	MAPR-002729-170M00	36	170	8.5	40	P-94D
2700 - 2900	PH2729-25M	36	25	9.2	45	P-98
2700 - 2900	PH2729-65M	36	65	8.5	40	P-51E
2700 - 2900	PH2729-8.5M	36	8.5	8.1	35	P-51D
2700 - 3100	PH2731-20M	36	20	8.2	45	P-98
2700 - 3100	PH2731-5M	36	5	7	30	P-51D
2700 - 3100	PH2731-75L	36	75	7	40	P-51G
2856	MAPRST2856-200	40	200	7.5	38	P-94C
2856	PH2856-160	40	160	7.5	40	Ceramic
2900 - 3100	PH2931-135S	42	135	7.5	40	P-94D
2900 - 3100	PH2931-20M	36	20	8.2	45	P-98
2900 - 3100	PH2931-5M	36	5	7	30	P-51D
2900 - 3300	MAPRST2933-100M	36	100	8	38	P-51G
3100 - 3400	PH3134-11S ♦	36	11	8	35	P-8TF

Note: Part numbers are RoHS compliant. ♦ indicates non-RoHS compliant.

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All specifications are subject to change.

Bipolar (continued)

Frequency (MHz)	Part Number	Operating Voltage (V)	Pout (W)	Min. Gain (dB)	Min. Efficiency (%)	Package
Packaged Products						
3100 - 3400	PH3134-20L	36	20	7.5	35	P-51D
3100 - 3400	PH3134-30S	36	30	7.5	35	P-51D
3100 - 3400	PH3134-55L	36	55	7.5	35	P-51E
3100 - 3400	PH3134-65M	36	65	7.5	35	P-51E
3100 - 3400	PH3134-75S	36	75	7.5	35	P-51E
3100 - 3400	PH3134-9L	36	9	8	35	P-8TF
3100 - 3500	PH3135-20M	36	20	7.5	35	P-51D
3100 - 3500	PH3135-25S	36	25	7.5	35	P-51D
3100 - 3500	PH3135-30M	36	30	7.5	35	P-51D
3100 - 3500	PH3135-5M	33	5	8.5	30	P-51D
3100 - 3500	PH3135-5S ♦	33	5	8.5	30	P-51D
3100 - 3500	PH3135-65M	36	65	7.5	35	P-51E
3100 - 3500	PH3135-90S	36	90	7.5	35	P-51E

High Power Transistor Modules

Frequency (MHz)	Part Number	Operating Voltage (V)	Pout (W)	Min. Gain (dB)	Min. Efficiency (%)	Package
Packaged Products						
20 - 512	MAPM-020512-010C00 ♦	30	10	25	30	Module
20 - 512	MAPM-020512-040C00 ♦	30	40	10	35	Module
30 - 400	PHA4000-1 ♦	27	13	28	25	Module
30 - 400	PHA4000-2 ♦	27	64	7	35	Module
2700 - 2900	MAPPST2729-300M ♦	36	300	8.3	40	Pallet
2700 - 3100	PHA2731-140L ♦	36	140	7	35	Pallet
2700 - 3100	PHA2731-190M ♦	38	190	7.5	33	Pallet
2900 - 3300	MAPPST2933-190M ♦	36	190	7.5	35	Pallet
3100 - 3400	MAPPST3134-120L ♦	36	120	8	36	Pallet
3100 - 3500	PHA3135-130M ♦	36	130	7	35	Pallet

LD MOS (Lateral Double Diffused MOSFET)

Frequency (MHz)	Part Number	Operating Voltage (V)	Pout (W)	Min. Gain (dB)	Min. Efficiency (%)	Package
Packaged Products						
800 - 1700	MAPL-000817-015CPC ♦	26V	15W	15	50	Ceramic
800 - 2200	MAPLST0822-002PP ♦	28V	2W	14	40	Ceramic
1600 - 1700	MAPLST1617-030CF	26V	30W	14	40	P-237

DMOS (Double Diffused MOSFET)

Frequency (MHz)	Part Number	Operating Voltage (V)	Pout (W)	Min. Gain (dB)	Min. Efficiency (%)	Package
Packaged Products						
30 - 88	FH2114	24	75	13	65	P58
30 - 88	FH2164	12	8	13	55	P-82
30 - 175	DU1215S	12	15	9.5	60	P54
30 - 175	DU1230S	12	30	10	60	P54
30 - 175	DU1260T	12	60	8	60	P70

Note: Part numbers are RoHS compliant. ♦ indicates non-RoHS compliant.

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DMOS (Double Diffused MOSFET) continued

Frequency (MHz)	Part Number	Operating Voltage (V)	Pout (W)	Min. Gain (dB)	Min. Efficiency (%)	Package
Packaged Products						
30 - 175	DU2805S	28	5	11	55	P54
30 - 175	DU2810S	28	10	13	55	P54
30 - 175	DU28120T	28	120	13	60	P-70
30 - 175	DU28120V	28	120	13	60	P-34A
30 - 175	DU28200M	28	200	13	55	P-25
30 - 175	DU2820S	28	20	13	60	P-54
30 - 175	DU2840S	28	40	13	60	P54
30 - 175	DU2860T	28	60	13	60	P70
30 - 175	DU2860U	28	60	13	60	P-90
30 - 175	DU2880T	28	80	13	60	P-58
30 - 175	DU2880U	28	80	13	60	P90
30 - 175	DU2880V	28	80	13	60	P34A
100 - 500	UF2805B	28	5	10	50	P-83B
100 - 500	UF28100H	28	100	10	50	BAL-3
100 - 500	UF28100M	28	100	10	50	P-25
100 - 500	UF28100V	28	100	10	50	P-34A
100 - 500	UF2810P	28	10	10	50	P-82
100 - 500	UF28150J	28	150	8	55	P-84
100 - 500	UF2815B	28	15	10	50	P-83B
100 - 500	UF2820P	28	20	10	50	P-82
100 - 500	UF2820R	28	20	10	50	P-56
100 - 500	UF2840G ♦	28	40	10	50	SS-1E
100 - 500	UF2840P	28	40	10	50	P-82
500 - 1000	LF2802A ♦	28	2	10	40	SS-1D
500 - 1000	LF2805A ♦	28	5	10	50	SS-1D
500 - 1000	LF2810A ♦	28	10	10	50	SS-1D

TMOS (Transverse Structure MOSFET)

Frequency (MHz)	Part Number	Operating Voltage (V)	Pout (W)	Min. Gain (dB)	Min. Efficiency (%)	Package
Packaged Products						
2 - 80	MRF154	50	600	17	45	P-214
2 - 80	MRF157	50	600	21	45	P-214
2 - 150	MRF140	28	150	15	40	P208
2 - 128	MAPF250128-150000	100	150	20	45	Case 211-11, style 2
2 - 150	MRF150	50	150	17	45	P208
2 - 175	MRF141	28	150	18	40	P208
2 - 175	MRF141G	28	300	12	50	P-217
2 - 175	MRF148A	50	30	18	40	P-216
2 - 175	MRF151	50	150	13	40	P208
2 - 175	MRF151A	50	150	18	40	P244
2 - 175	MRF151G	50	300	14	50	P-217
2 - 175	MRF173	28	80	11	60	P208
2 - 175	MRF173CQ	28	80	13	60	P209
2 - 200	MRF174	28	125	9	50	P208
2 - 225	MRF175GV	28	200	14	65	P-218
2 - 225	MRF176GV	50	200	17	55	P-218

Note: Part numbers are RoHS compliant. ♦ indicates non-RoHS compliant.

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All specifications are subject to change.

TMOS (Transverse Structure MOSFET) continued

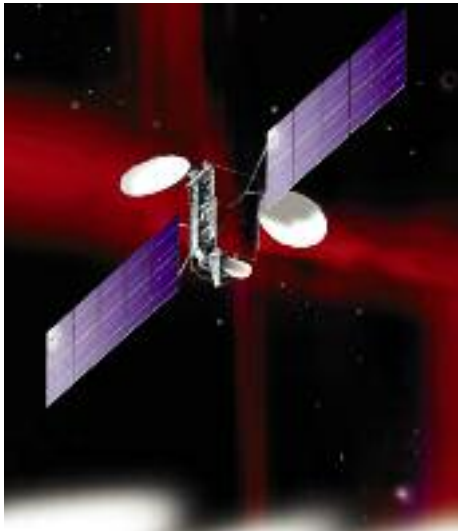
Frequency (MHz)	Part Number	Operating Voltage (V)	Pout (W)	Min. Gain (dB)	Min. Efficiency (%)	Package
Packaged Products						
2 - 400	MRF175GU	28	150	12	55	P-218
2 - 400	MRF134	28	5	11	50	P-222
2 - 400	MRF136	28	15	16	60	P-222
2 - 400	MRF136Y	28	30	14	54	P-215
2 - 400	MRF137	28	30	13	60	P-222
2 - 400	MRF175LU	28	100	10	55	P-225
2 - 400	MRF176GU	50	150	14	50	P-218
2 - 400	MRF177	28	100	12	60	P-226
2 - 500	MRF158	28	2	16	55	P-228
2 - 500	MRF160	28	4	16	55	P-221
2 - 500	MRF166C	28	20	13.5	50	P-204
2 - 500	MRF166W	28	40	14	50	P-202
2 - 500	MRF275G	28	150	10	50	P-218
2 - 500	MRF275L	28	100	8.8	55	P-225
100 - 200	MRF171A	28	45	17	60	P-216

Note: Part numbers are RoHS compliant. ♦ indicates non-RoHS compliant.

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66 All specifications are subject to change.



M/A-COM Technology Solutions high frequency **Voltage Controlled Oscillators** are intended for the stringent phase noise requirements of high data rate point-to-point radio applications. These InGaP HBT based VCOs do not require any external matching components and are easily integrated into a phase lock loop using the divide-by-two output.

- Low power consumption
- Bandwidths greater than 10%
- RoHs compliant package with lead-free finish
- Compatible with a 260°C reflow temperature
- Low lead inductance package and excellent thermal path.



Voltage Controlled Oscillators (VCOs)

Frequency (GHz)	Part Number	DC Current (mA)	Pout at Fo (dBm)	Pout at Fo/2 (dBm)	Phase Noise at 100 kHz Offset (Vt=5V)(dBc/Hz)	Tuning Voltage (Volts)	Package
Packaged Products							
5.7 - 6.4	MAOC-009259	190	12	3.5	-117	1-13	5 mm PQFN 32
6.1 - 7.0	MAOC-009260	205	8.5	4.5	-117	1-13	5 mm PQFN 32
7.1 - 7.9	MAOC-009261	180	10	1.5	-118	1-13	5 mm PQFN 32
7.4 - 8.2	MAOC-009262	180	11.5	2.5	-118	1-13	5 mm PQFN 32
7.8 - 8.7	MAOC-009263	180	10.5	4	-115	1-13	5 mm PQFN 32
8.8 - 9.8	MAOC-009264	195	8	4	-115	1-13	5 mm PQFN 32
9.4 - 10.8	MAOC-009265	175	6	8.5	-112	1-13	5 mm PQFN 32
10.2 - 11.3	MAOC-009266	200	6	8.5	-114	1-13	5 mm PQFN 32
11.2 - 12.6	MAOC-009267	175	3.5	6	-110	1-13	5 mm PQFN 32
12.7 - 14.2	MAOC-009268	185	7	4.5	-108	1-13	5 mm PQFN 32
11.4 - 12.8	MAOC-009269	180	3	5	-110	1-13	5 mm PQFN 32
12.2 - 13.8	MAOC-009270	165	6.5	5	-107	1-13	5 mm PQFN 32

Package Selection Guide

Plastic Leadless Packages

Package Type	Approx Outline Dimensions	
1 mm 6LD XI-DFN	1 x 1 x 0.45	
1.2 x 1.5 6LD PDFN (0.5 mm Pitch)	1.2 x 1.5 x 0.75	
1.5 x 1.2 6LD PDFN (0.4 mm Pitch)	1.5 x 1.2 x 0.75	
2 mm 8LD STDFN	2 x 2 x 0.55	
2 mm 12LD STQFN (0.5 mm Pitch)	2 x 2 x 0.55	
2 mm 12LD STQFN (0.4 mm Pitch)	2 x 2 x 0.55	
2 x 2.5 mm 14LD STQFN	2 x 2.5 x 0.55	
3 mm 12LD/16LD PQFN	3 x 3 x 0.9	
3 mm 12LD/16LD PQFN (LP)	3 x 3 x 0.75	
4 mm 16LD/20LD/24LD PQFN	4 x 4 x 0.9	
4 mm 16LD/20LD PQFN (LP)	4 x 4 x 0.75	
5 mm 20LD/28LD/32LD PQFN	5 x 5 x 0.9	
6 mm 28LD/40LD/48LD PQFN	6 x 6 x 0.9	
4 x 6 mm 32LD PQFN	4 x 6 x 0.9	
4 x 7 mm 36LD PQFN	4 x 7 x 0.9	

Plastic Leaded Packages

SC-79	0.8 x 1.6 x 0.6	
SOD-323	1.3 x 2.5 x 1.1	
SOT-23	2.9 x 2.4 x 1	
SOT-25	2.9 x 2.8 x 1.3	
SOT-26	2.9 x 2.8 x 1.3	
SOT-89	4.5 x 4 x 1.5	
SOT-143	2.9 x 2.4 x 1	
SC70 3LD (SOT-323)	2 x 2.1 x 1	
SC70 6LD (SOT-363)	2 x 2.1 x 1	

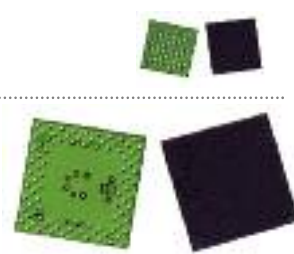
Plastic Leaded Packages (continued)

Package Type	Approx Outline Dimensions (mm)	
SOIC-8/SOIC-8EP	4.9 x 6 x 1.6	
SOIC-14	8.7 x 6 x 1.6	
SOIC-16	9.9 x 6 x 1.6	
SOW-16	10.3 x 10.3 x 2.5	
SOW-24	15.4 x 10.3 x 2.5	
TSSOP-16	5 x 6.4 x 1.1	
SSOP-20	7.2 x 7.8 x 1.9	
MSOP-8	3 x 4.9 x 1	
MSOP-8EP	3 x 4.9 x 1	
MSOP-10/MSOP-10EP	3 x 4.9 x 1	
QSOP-16	4.9 x 6 x 1.6	
QSOP-24	8.7 x 6 x 1.6	
QSOP-28	9.9 x 6 x 1.6	

Plastic Ball Grid Arrays Packages (PBGA)*

8 mm 64 I/O PBGA	8 x 8 x 1.7	
15 mm 90 I/O PBGA	15 x 15 x 3	

*other package outlines available



Ceramic/Chip Diode Packages

Package Type	Approx Outline Dimensions (mm)	
30 Ceramic	3.2 dia. x 5.7	
132 Ceramic	0.6 x 0.6 x 0.2	
134 Die	0.4 x 0.4 x 0.2	
186 Ceramic	11.2 x 2.5 x 1.1	
401 Axial Lead	2.3 dia. x 55	
1027 Ceramic	8 dia. x 6.9	
1056 Ceramic	1.9 x 1.9 x 1	
1072 Ceramic	2.4 x 2.4 x 3.4	
1073 Ceramic	12.3 dia. x 10	
1038 Ceramic	8 dia. x 17	
1080 Ceramic	8 dia. x 22.2	
1082 Ceramic	8 dia. x 19.8	
1088 Ceramic	2.4 x 1.3 x 1	
1246 Surmount	1.2 x 0.5 x 0.2	

Metal/Ceramic Packages

Package Type	Approx Outline Dimensions (mm)	
CR2-6LD	18.3 x 11.3 x 1.3	
CR2	18.3 x 17.1 x 1.3	
CR3	16.2 x 4.6 x 1.6	
CR4	12.4 x 12.4 x 1.6	
CR5	8.9 x 8.0 x 1.6	
CR6	11.4 x 8.9 x 1.6	
CR12	11.4 x 11.4 x 2.0	
CR13	16.5 x 11.4 x 2.0	
CR15	17.8 x 11.4 x 2	
CR16	9.8 x 8.3 x 1.5	
1000017733	23.5 x 13.8 x 2.8	

All dimensions include leads.

Metal/Ceramic Packages

Package Type	Approx Outline Dimensions (mm)	
MOD2 (3/4 size)	20.3 x 15 x 6.6	
MOD3 (3/4 size)	20.3 x 15 x 4.8	
SMA-AMP (3/4 size)	23.4 x 27.9 x 13.3	
SMA-MXR (3/4 size)	22.9 x 22.9 x 14	
SMT-01	11.4 x 11.4 x 4.3	
SMT-02	10 x 13 x 4	
SMT-88	13.4 x 13.4 x 4.3	
SMT-88F	11.4 x 11.4 x 4.3	
TO-8-01	12.7 dia. x 11	
TO-8-02	12.7 dia. x 9.7	
TO-8-03	15.2 dia. x 9.7	

Metal/Ceramic Packages

Package Type	Approx Outline Dimensions (mm)	
CSM	12.5 x 9.4 x 4.8	
FP	13 x 9.8 x 3.6	
MOD1	14.2 x 13.2 x 4.8	

Passive Packages

Package Type	Approx Outline Dimensions (mm)	
SM-2	12.5x 9.4 x 6.4	
SM-4	12.4 x 9.4 x 5.8	
SM-22	3.8 x 3.8 x 3.8	
SM-55	7.1 x 6.4 x 3.6	
SM-85 (3/4 size)	30 x 30 x 9	
SM-89	8 x 6.4 x 0.15	
SM-138	4.2 x 5.3 x 3.9	
SM-152	4.2 x 5.3 x 4.3	

All dimensions exclude leads.

Transistor Packages

Package Type	Approx Outline Dimensions (mm)	
P-237 Ceramic	20 x 15 x 4	
P-238 Ceramic	34 x 19.6 x 4	
P-239 Ceramic	21 x 1 x 4	
355E-01, Style 1 Ceramic	23 x 21 x 5	
368-03, Style 2 Ceramic	38 x 50 x 9	
PH1214-M Series Ceramic	23 x 10 x 4.5	
P-8TF	20.8 x 6.4 x 3.5	

Transistor Packages (continued)

Package Type	Approx Outline Dimensions (mm)	
P-51H	22.9 x 10.2 x 5.5	
P-94C	22.9 x 10.2 x 5.5	
P-94D	22.9 x 10.2 x 4.2	
P-94I	22.9 x 10.2 x 4.2	
P-154C	25.4 x 15.2 x 5.1	
Pallet (1/4 size)	50.8 x 35.8 x 7	
Pallet (1/4 size)	50.8 x 35.8 x 7	

All dimensions exclude leads.

Frequency Band Designations

Previous Frequency Designations	P	L	S	C	X	Ku	K	Ka					
Current Frequency Designations	C	D	E	F	G	H	I	J	K				
	0.5	1.0	2.0	3.0	4.0	6.0	8.0	10.0	12.4	18.0	20.0	26.5	40.0
	Frequency (GHz)												

Wavelength and Frequency

For all forms of wave, the velocity, wavelength, and frequency are related such that

$$\lambda F \sqrt{\epsilon_r \mu_r} = c$$

λ = wavelength in meters (m)

F = frequency in hertz (Hz)

ϵ_r = relative dielectric constant of propagation medium

c = velocity of light (300,000,000 m/s)

μ_r = relative permeability of propagation medium

The dielectric (ϵ) is a property of the medium in which the wave propagates. The value of ϵ is defined as 1.000 for a perfect vacuum, and very nearly 1.0 for dry air (typically 1.006). In most practical applications, the value of ϵ in dry air is taken to be 1.000. For mediums other than air or vacuum, however, the velocity of propagation is slower, and the value of ϵ relative to a vacuum is higher. Teflon[®], for example, can be made with dielectric constant values (ϵ) from about 2 to 11.

Frequency vs. Wavelength

Frequency	Wavelength
1 MHz	300 meters (m)
10 MHz	30 m
100 MHz	3 m
300 MHz	1 m–100 centimeters (cm)
1 GHz	30 cm
10 GHz	3 cm
100 GHz	3 millimeters (mm)
300 GHz	1 mm–10 ⁻³ m
3 x 10 ¹⁴	1 micron–10 ⁻⁶ m

Worldwide Wireless Telecommunications Standards

Standard	Designation	Transmit Frequency Range (MHz)		Generation
		Handset	Base Station	
AMPS		824 - 849	869 - 894	Analog
TDMA	Cellular	824 - 849	869 - 894	2G
	PCS	1850 - 1910	1930 - 1990	2G
GSM	400	450.4 - 457.6	460.4 - 467.6	2G
	400	478.8 - 486	488.8 - 496	2G
	850	824 - 849	869 - 894	2G
	900	880 - 915	925 - 960	2G
	1800	1710 - 1785	1805 - 1880	2G
	1900	1850 - 1910	1930 - 1990	2G
CDMAone	Cellular	824 - 849	869 - 894	2G
	PCS	1850 - 1910	1930 - 1990	2G
GPRS/EDGE	400	450.4 - 457.6	460.4 - 467.6	2.5G
	400	478.8 - 486	488.8 - 496	2.5G
	850	824 - 849	869 - 894	2.5G
	900	880 - 915	925 - 960	2.5G
	1800	1710 - 1785	1805 - 1880	2.5G
	1900	1850 - 1910	1930 - 1990	2.5G
CDMA2000 1x	450	452.5 - 457.475	462.5 - 467.475	3G
EV-DO/EV-DV	800	824 - 849	869 - 894	3G
	1700	1750 - 1780	1840 - 1870	3G
	1900	1850 - 1910	1930 - 1990	3G
	2100	1920 - 1980	2110 - 2170	3G
W-CDMA (UMTS)		1920 - 1980	2110 - 2170	3G
TD-SCDMA1		2010 - 2025	2010 - 2025	3G

¹ Several additional frequency ranges have been set aside for use at the operator's or granting authority's discretion

Cordless Telephone/Wireless Data

Standard	Frequency (MHz)
CT2 Cordless	864 - 868
CT2+ Cordless	944 - 948
DECT Cordless	1880 - 1900
Bluetooth	2402 - 2495
IEEE 802.11a	5150 - 5350
IEEE 802.11b	2401 - 2483
IEEE 802.11g	2401 - 2483
ISM (US)	902 - 928
ISM (US)	2400 - 2500
ISM (US)	5725 - 5875

Part Number 2020-6600-06 to CDMA 900

Part Number	Page No.	Part Number	Page No.	Part Number	Page No.	Part Number	Page No.
2020-6600-06 ◆	53	A1021	17	A59	16	AM-155-PIN	18
2020-6601-10 ◆	53	A1031	17	A59-1	17	AM-160-PIN	17
2020-6602-20 ◆	53	A11-2	17	A6011	15	AM-162-PIN	14
2020-6603-30 ◆	53	A12	17	A6011	19	AM-162-PIN	16
2020-6604-06 ◆	53	A1211	18	A61	19	AM-176-PIN	17
2020-6605-10 ◆	53	A1212	14	A611	17	AM-177-PIN	18
2020-6606-20 ◆	53	A1212	18	A63	17	AM-180-PIN	18
2020-6607-30 ◆	53	A17	18	A64	18	AM-182-PIN	17
2020-6608-06 ◆	53	A18-1	18	A66	18	AM-183-PIN	18
2020-6609-10 ◆	53	A180	17	A66-1	18	AM-184-PIN	18
2020-6610-20 ◆	53	A181	16	A66-3	18	AM-191-PIN	17
2020-6611-30 ◆	54	A19-1	18	A67	17	AM05-0005	16
2020-6612-06 ◆	54	A21-1	18	A67-1	17	AM05-0006	16
2020-6613-10 ◆	54	A231	14	A70	14	AM40-0023	15
2020-6614-20 ◆	54	A231	16	A70	16	AM42-0002	15
2020-6615-30 ◆	54	A24	18	A70-1	14	AM42-0007	15
2020-6616-06 ◆	54	A25	18	A70-1	16	AM42-0054	15
2020-6617-10 ◆	54	A25-1	18	A70-2	14	AM42-0055	15
2020-6618-20 ◆	54	A26	18	A70-2	16	AM50-0002 ◆	14
2020-6619-30 ◆	54	A27	18	A70-3	16	AM50-0003 ◆	14
2020-6620-06 ◆	54	A28	18	A71	14	AM50-0004 ◆	15
2020-6621-10 ◆	54	A28-2	18	A71	16	AM50-0006 ◆	15
2020-6622-20 ◆	54	A29-1	18	A72	16	AM55-0004	15
2020-6623-30 ◆	54	A3010	19	A73	16	AM55-0016 ◆	14
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Note: Part numbers are RoHS compliant. ◆ indicates non-RoHS compliant.

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MA4ST407 Series	32	MAAM-007866-OP1R00	13	MAAV-007090-000100	21	MABACT0071	45
MA4ST408 Series	32	MAAM-007866-OP1R00	13	MAAV-007091-000100	21	MABACT0074	46
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MA4SW110	57	MAAM-008199-000A51	16	MAAV-008022	21	MABAES0025	46
MA4SW210	57	MAAM-008200-000A83	17	MAAVSS0001	21	MABAES0034	46
MA4SW210B-1	57	MAAM-008818 (2 splits)	13	MAAVSS0004	21	MABAES0040	45
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MA4SW310B-1	57	MAAM-008820 (4 splits)	13	MAAVSS0006	21	MABAES0061	45
MA4SW410	57	MAAM-008970 (2 splits)	13	MAAVSS0007	21	MAC-50	40
MA4SW410B-1	57	MAAM-009100	13	MAAVSS0008	21	MAC-51	40
MA4SW510	57	MAAM-009354	13	MABA-007159-000000	45	MACP-007486-CH0010	52
MA4SW510B-1	57	MAAM-009450 (3 splits)	13	MABA-007236-C16423	46	MACP-007490-CA0010	52
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