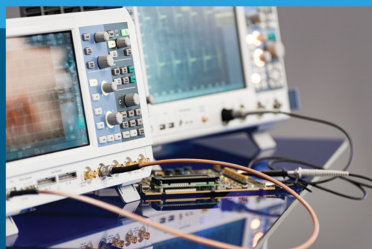




Specialized RF & Microwave Component Products



PRODUCT
SELECTION
GUIDE

MACOM[®]

Partners from RF to Light

macom.com

Supported by decades of research, product development, and acquisition, MACOM® is a key supplier of Specialized RF and Microwave component products to commercial and defense customers throughout the global marketplace.

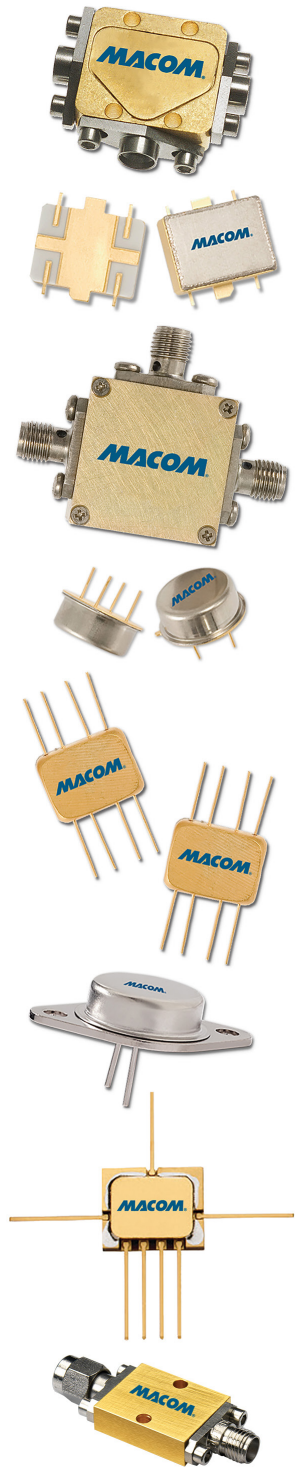
MACOM's extensive portfolio of Specialized RF and Microwave component products are offered as off-the-shelf components or can be modified or upscaled to meet unique customer applications.

Additional product information can be found on our website, [macom.com](https://www.macom.com). Contact our worldwide sales offices, authorized representatives, and industry-leading distributors, or request Specialized RF and Microwave component product support at [macom.com/support](https://www.macom.com/support).

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The products listed herein are subject to US Export Controls set forth by the Arms Export Control Act and the Export Administration Act.

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A Spectrum of Aerospace and Defense Solutions

Specialized RF & Microwave Components and MMICs

MACOM continues to build upon our legacy of providing high-reliability Specialized RF and Microwave Components and semiconductor products to the Aerospace and Defense industry by continually adding to our product portfolio and capabilities.

MACOM's standard line of Specialized RF and Microwave Components provides solutions to meet the most stringent requirements commonly found on airborne applications, high MTBF ground-based equipment, and space applications.

From our DLA-Certified and US Trusted Foundry in Lowell, Massachusetts, we continue to improve our ability to provide the highest quality aerospace and defense products.

When program screening requirements call for more than MACOM's standard catalog screening, custom screening programs can be created by adding screening options or by generating a program specific sequence.

Product Screening Programs

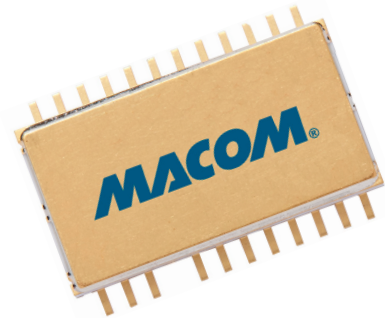
- > Standard catalog environmental screening plans
- > Customer specific environmental screening plans
- > Customer Source Control Drawings

Standard Requirements Supported

- > ESA/ESCC Specifications
- > MIL-PRF-38534 Performance/General Specification for Hybrid Microcircuits
- > MIL-PRF-38535 Performance/General Specification for Integrated Circuits
- > MIL-PRF-19500 General Specification for Semiconductor Devices
- > MIL-DTL-28837 General Specification for Radio Frequency Mixer Stages
- > MIL-STD-883 Test Methods
- > MIL-STD-750 Test Methods
- > MIL-STD-202 Test Methods
- > MIL-DTL-23971 Power Dividers/Couplers Specification
- > PEM-INST-001 NASA Plastic Qualification

Please refer to [MACOM's Space & High-Reliability brochure](#) for more detailed information on environmental screening capabilities and options.

Contact your local MACOM sales representative to discuss any environmental screening options.



Hybrid Amplifiers - Gain Blocks								
Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	Gain (dB)	Output P1dB (dBm)	OIP3 (dBm)	Bias Current (mA)	Package
A1021	Cascadable, Hi Gain	10	1000	26	15	26	60	TO-8
A17	Cascadable Amplifier	10	1000	12	15	27	44	TO-8
A181	Cascadable	10	250	16.5	22	35	95	TO-8
A19-1	Cascadable Amplifier	10	1000	11.5	23	35	90	TO-8
A24	Cascadable	5	1500	20	8	21	34	TO-8
A25	Cascadable Amplifier	5	1500	10	9	21	24	TO-8
A26	Cascadable Amplifier	10	1500	20.5	16	27	64	TO-8
A27	Cascadable	5	1500	8.5	16	28	50	TO-8
A28	Cascadable	10	1500	11	15	29	45	TO-8
A29-1	Cascadable	10	1500	9	22	32	90	TO-8
A33-1	Cascadable	2	2400	9	6	19	19	TO-8
A34	Cascadable	100	2000	16	7	18	35	TO-8
A35	Cascadable	10	2000	10	9	21	24	TO-8
A36	Cascadable	100	2000	16.5	12	23	63	TO-8
A36-1	Cascadable	100	2300	16.2	12	23	63	TO-8
A36-2	Cascadable	100	2600	15	14	30	63	TO-8
A37	Cascadable	10	2000	10	15	28	47	TO-8
A38	Cascadable	10	2000	9.5	19	30	65	TO-8
A39	Cascadable	10	2000	7.5	22	34	90	TO-8
A43	Cascadable	100	3200	11.5	9	21	45	TO-8
A5	Cascadable Amplifier	5	500	14.8	9	22	25	TO-8
A54	Cascadable	5	500	15.5	9	21	34	TO-8
A55	Cascadable	10	500	14.7	11	24	30	TO-8
A56	Cascadable, Hi Gain	5	400	26	14	27	69	TO-8
A5-6	Cascadable	6	600	15.5	9	21	24	TO-8
A57	Cascadable	10	500	14.7	14	28	44	TO-8
A59-1	Cascadable, Hi Dynamic Range	10	700	10.5	22	36	88	TO-8
A64	Cascadable, Hi Gain	10	1200	26	8	20	35	TO-8
A66	Cascadable	10	1200	23.5	15	28	64	TO-8
A66-1	Cascadable, Hi Gain	10	1000	27.5	15	28	66	TO-8
A72	Cascadable, Hi Efficiency	5	500	15	13	26	30	TO-8
A74-2	Cascadable, Hi Efficiency	5	500	26	-1	10	13	TO-8
A75-2	Cascadable	5	250	21	8	19	24	TO-8
A77	Cascadable	5	500	16.5	17	30	50	TO-8
A77-1	Cascadable	5	600	16	17	30	50	TO-8
A79	Cascadable	5	300	14	22	38	88	TO-8
A87	Cascadable	10	400	14	18	33	33	TO-8
A88	Cascadable	5	500	18.7	21	30	79	TO-8
A89	Cascadable	50	800	22	18	30	42	TO-8
AMC-145-SMA ♦	Cascadable	10	1000	10.7	18	32	50	SMA
AMC-146-SMA ♦	Cascadable, Hi Linearity	10	500	21	22	35	130	SMA
AMC-151-SMA ♦	Cascadable, Hi Dynamic Range	5	500	12	22	36	88	SMA
AMC-155-SMA ♦	Cascadable, Hi Dynamic Range	300	1000	12.3	20	30	50	SMA
AMC-184-SMA ♦	Cascadable	5	1000	20	11	20	52	SMA
CA1021 ♦	Cascadable, Hi Gain	10	1000	26	15	26	60	SMA
CA17 ♦	Cascadable	10	1000	12	15	27	44	SMA
CA181 ♦	Cascadable	10	250	16.5	22	35	95	SMA

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

Hybrid Amplifiers - Gain Blocks (continued)								
Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	Gain (dB)	Output P1dB (dBm)	OIP3 (dBm)	Bias Current (mA)	Package
CA19-1 ♦	Cascadable	10	1000	11.5	23	35	90	SMA
CA24 ♦	Cascadable	5	1500	20	8	21	34	SMA
CA26 ♦	Cascadable	10	1500	20.5	16	27	64	SMA
CA28 ♦	Cascadable	10	1500	11	15	29	45	SMA
CA29-1 ♦	Cascadable	10	1500	9	22	32	90	SMA
CA3010 ♦	Cascadable	0	2500	9.5	19	35	160	SMA
CA33-1 ♦	Cascadable	2	2400	9	6	19	19	SMA
CA35 ♦	Cascadable	10	2000	10	9	21	24	SMA
CA36-1 ♦	Cascadable	100	2300	16.2	12	23	63	SMA
CA38 ♦	Cascadable	10	2000	9.5	19	30	65	SMA
CA59-1	Cascadable, Hi Dynamic Range	10	700	10.5	22	36	88	SMA
CA64 ♦	Cascadable, Hi Gain	10	1200	26	8	20	35	SMA
CA66 ♦	Cascadable	10	1200	23.5	15	28	64	SMA
CA66-1 ♦	Cascadable, Hi Gain	10	1000	27.5	15	28	66	SMA
CA77 ♦	Cascadable	5	500	16.5	17	30	50	SMA
CA77-1 ♦	Cascadable	5	600	16	17	30	50	SMA
CA79 ♦	Cascadable	5	300	14	22	38	88	SMA
CA87 ♦	Cascadable	10	400	14	18	33	33	SMA
CPA48 ♦	Cascadable, Medium Power	1000	4000	16	24	34	225	SMA
CRA36 ♦	Cascadable, Hi Gain	100	2000	24	13	22	76	SMA
CRA66 ♦	Cascadable, Hi Gain	10	1000	37	16	30	81	SMA
CRA69 ♦	Cascadable, Hi Gain	10	1000	25	23	34	130	SMA
CRA89 ♦	Cascadable, Hi Gain	5	500	26.5	22	35	130	SMA
CRA89-1 ♦	Cascadable, Hi Gain	10	500	30	22	36	130	SMA
EA2	Cascadable	5	400	13.5	9	21	27	TO-5
EA54	Cascadable, Hi Gain	5	250	27	5	16	30	TO-5
EA54-2	Cascadable, Hi Gain	5	500	29.5	10	20	55	TO-5
MAAM-007502-CPA512 ♦	Cascadable, Medium Power	10	500	18	28	40	200	SMA
MAAM-007502-SPA512	Cascadable, Medium Power	10	500	18	28	40	200	SMT
MAAM-007947-CA3602 ♦	Cascadable	100	2600	15	14	30	63	SMA
MAAM-008198-00A162	Cascadable, Hi Efficiency	10	1200	13	6	18	15	TO-8
MAAM-008200-000A83	Cascadable, Hi Efficiency	10	500	30	-1	10	13	TO-8
PA38-2	Cascadable, Medium Power	200	2600	8.5	24	33	150	TO-8
PA48	Cascadable, Medium Power	1000	4000	16	24	34	225	TO-8B
PA511	Cascadable, Medium Power	10	500	12.7	25	40	118	TO-8
PA512	Cascadable, Medium Power	10	500	18	28	40	200	TO-8
RA36	Cascadable, Hi Gain	100	2000	24	13	22	76	TO-8B
RA46	Cascadable, Hi Gain	1000	4000	25.5	19	30	175	TO-8B
RA66	Cascadable, Hi Gain	10	1000	37	16	30	81	TO-8B
RA69	Cascadable, Hi Gain	10	1000	25	23	34	130	TO-8B
RA89	Cascadable, Hi Gain	5	500	26.5	22	35	130	TO-8B
RA89-1	Cascadable, Hi Gain	10	500	30	22	36	130	TO-8B
SMA1021	Cascadable, Hi Gain	10	1000	26	15	26	60	SMT
SMA17	Cascadable	10	1000	12	15	27	44	SMT
SMA181	Cascadable	10	250	16.5	22	35	95	SMT
SMA19-1	Cascadable	10	1000	11.5	23	35	90	SMT
SMA24	Cascadable	5	1500	20	8	21	34	SMT



Hybrid Amplifiers - Gain Blocks (continued)								
Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	Gain (dB)	Output P1dB (dBm)	OIP3 (dBm)	Bias Current (mA)	Package
SMA26	Cascadable	10	1500	20.5	16	27	64	SMT
SMA28	Cascadable	10	1500	11	15	29	45	SMT
SMA29-1	Cascadable	10	1500	9	22	32	90	SMT
SMA33-1	Cascadable	2	2400	9	6	19	19	SMT
SMA34	Cascadable	100	2000	16	7	18	35	SMT
SMA35	Cascadable	10	2000	10	9	21	24	SMT
SMA36	Cascadable	100	2000	16.5	12	23	63	SMT
SMA36-1	Cascadable	100	2300	16.2	12	23	63	SMT
SMA36-2	Cascadable	100	2600	15	14	30	63	SMT
SMA37	Cascadable	10	2000	10	15	28	47	SMT
SMA38	Cascadable	10	2000	9.5	19	30	65	SMT
SMA39	Cascadable	10	2000	7.5	22	34	90	SMT
SMA43	Cascadable	100	3200	11.5	9	21	45	SMT
SMA513	Cascadable	10	500	20	18	30	120	SMT
SMA5-6	Cascadable	6	600	16	9	21	24	SMT
SMA57	Cascadable	10	500	14.7	14	28	44	SMT
SMA59-1	Cascadable, Hi Dynamic Range	10	700	10.5	22	36	88	SMT
SMA64	Cascadable, Hi Gain	10	1200	26	8	20	35	SMT
SMA66	Cascadable	10	1200	23.5	15	28	64	SMT
SMA66-1	Cascadable, Hi Gain	10	1000	27.5	15	28	66	SMT
SMA72	Cascadable, Hi Efficiency	5	500	15	13	26	30	SMT
SMA74-2	Cascadable, Hi Efficiency	5	500	26	-1	10	13	SMT
SMA77	Cascadable	5	500	16.5	17	30	50	SMT
SMA77-1	Cascadable	5	600	16	17	30	50	SMT
SMA79	Cascadable	5	300	14	22	38	88	SMT
SMA87	Cascadable	10	400	14	18	33	33	SMT
SMA88	Cascadable	5	500	18.7	21	30	79	SMT
SMA89	Cascadable	100	800	22	18	30	42	SMT
SMPA2010	Cascadable, Medium Power	200	2000	10	26	33	179	SMT
SMPA38-2	Cascadable, Medium Power	200	2600	8.5	24	33	150	SMT
SMPA48	Cascadable, Medium Power	1000	4000	16	24	34	225	SMT
SMPA511	Cascadable, Medium Power	10	500	12.7	25	40	118	SMT
SMRA36	Cascadable, Hi Gain	100	2000	24	13	22	76	SMT
SMRA46	Cascadable, Hi Gain	1000	4000	25.5	19	30	175	SMT
SMRA62	Cascadable, Hi Gain	2000	6000	16	13	28	65	SMT
SMRA66	Cascadable, Hi Gain	10	1000	37	16	30	81	SMT
SMRA69	Cascadable, Hi Gain	10	1000	25	23	34	130	SMT
SMRA89	Cascadable, Hi Gain	5	500	26.5	22	35	130	SMT
SMRA89-1	Cascadable, Hi Gain	10	500	30	22	36	130	SMT

Hybrid Amplifiers - LNA										
Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	Gain (dB)	Noise Figure (mA)	OIP3 (dBm)	Output P1dB (dBm)	Bias Voltage (V)	Bias Current (mA)	Package
A1	Cascadable Amplifier	5	500	16	2.4	11	-1	15	9	TO-8
A101	Cascadable, Hi Linearity	5	100	17	3	36	23	12	105	TO-8B
A1031	Cascadable, Hi Gain	10	1000	28.5	2.7	22	10	5	36	TO-8
A11	Cascadable Amplifier	5	1000	14.7	3.1	10	-2	15	9	TO-8

Hybrid Amplifiers - LNA (continued)

Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	Gain (dB)	Noise Figure (mA)	OIP3 (dBm)	Output PldB (dBm)	Bias Voltage (V)	Bias Current (mA)	Package
A12	Cascadable Amplifier	10	1000	16	2.8	22	8	15	22	TO-8
A1211	Cascadable Amplifier	10	1200	14	2.8	20	6	5	16	TO-8
A1212	Cascadable Amplifier	100	1200	14	1.8	29	19	5	70	TO-8
A180	Cascadable	10	500	16.5	3.4	33	18	15	63	TO-8
A18-1	Cascadable, Hi Dynamic Range	10	1000	14.7	3.8	30	16	15	44	TO-8
A231	Cascadable, Hi Gain	10	250	26	1.7	22	10	5	16	TO-8
A25-1	Cascadable	2	1500	13.5	3	22	9	15	25	TO-8
A28-2	Cascadable, Hi Efficiency	10	1500	14	3.5	24	11	5	27	TO-8
A31-1	Cascadable Amplifier	10	2000	11.5	3.5	9	-2	15	9	TO-8
A32	Cascadable, Hi Linearity	100	2000	13	2.1	32	22	15	92	TO-8
A32-1	Cascadable, Low Noise, Low Volt	100	2000	11.5	2.5	25	16	5	44	TO-8
A4011	Cascadable, Low Noise, Low Volt	1000	4000	15.5	2	29	18	5	65	TO-8
A4012	Cascadable, Low Noise, Low Volt	1000	4000	18	3.5	26	16	5	65	TO-8
A411	Cascadable, Low Noise	10	400	15.8	3	24	10	5	16	TO-8
A45	Cascadable	1000	4000	17.5	4	29	20	15	120	TO-8
A45-1	Cascadable	1000	4000	17.5	4	26	13	5	65	TO-8
A511	Cascadable Amplifier	10	500	17	3.4	33	21	15	52	TO-8
A514	Cascadable, Hi Gain	5	500	28	4	32	19	15	96	TO-8
A515	Cascadable, Hi Gain	5	500	27.5	3.5	33	22	15	127	TO-8
A531	Cascadable	10	500	31.7	2	14	3	5	17	TO-8
A58	Cascadable	5	500	11.5	4	34	19	15	65	TO-8
A59	Cascadable, Hi Dynamic Range	5	500	11.5	4.3	36	22	15	88	TO-8
A6011	Cascadable, Low Noise, Low Volt	2000	6000	14.8	1.5	30	18	5	58	TO-8
A61	Cascadable, Low Noise, Low Volt	2000	6000	7.5	3.2	25	13	5	35	TO-8
A611	Cascadable, Low Noise, Low Volt	5	700	15	3.2	24	13	5	31	TO-8
A63	Cascadable	5	1000	16	3	15	4	15	14	TO-8
A66-3	Cascadable, Hi Efficiency	10	1000	26	3	13	3	5	16	TO-8
A67	Cascadable, Hi Efficiency	10	800	14	4	30	16	15	32	TO-8
A67-1	Cascadable, Hi Efficiency	10	600	15	3.7	30	17	15	36	TO-8
A70	Cascadable, Low Noise, Hi Dynamic Range	10	250	8	1.6	24	8	15	10	TO-8
A70-1	Cascadable, Low Noise, Hi Dynamic Range	10	250	8	1.8	28	14	15	15	TO-8
A70-2	Cascadable, Low Noise, Hi Dynamic Range	10	250	8	2.2	38	19	15	25	TO-8
A70-3	Cascadable, Low Noise, Hi Dynamic Range	20	250	8	2.8	40	21	15	37	TO-8
A73	Cascadable, Hi Gain	5	500	32	3.5	15	2	15	20	TO-8
A74	Cascadable, Hi Gain	5	500	30	3	20	9	15	40	TO-8
A74-1	Cascadable, Hi Gain	5	250	31	4.5	21	9	15	40	TO-8
A75	Cascadable Amplifier	5	500	21	2.1	21	9	15	24	TO-8
A75-3	Cascadable	10	500	20.5	1.7	16	3	15	14	TO-8
A76	Cascadable, Hi Gain	5	500	28	3	28	15	15	62	TO-8
A76-1	Cascadable, Hi Efficiency	5	500	27.5	3	26	13	5	47	TO-8
A78	Cascadable	5	300	14	3.5	35	20	15	65	TO-8
A80	Cascadable	20	500	29	2.5	27	14	15	45	TO-8
A80-1	Cascadable	10	200	27.3	2	28	16	15	30	TO-8
A81	Cascadable	20	250	25.5	3	28	17	15	35	TO-8
A81-1	Cascadable	20	250	25	2.5	27	14	15	25	TO-8
A81-2	Cascadable	20	500	24.5	3	28	15	15	29	TO-8



Hybrid Amplifiers - LNA (continued)										
Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	Gain (dB)	Noise Figure (mA)	OIP3 (dBm)	Output PldB (dBm)	Bias Voltage (V)	Bias Current (mA)	Package
A81-3	Cascadable	20	500	17	4	20	8	15	29	TO-8
A82	Cascadable	20	250	25	2.8	31	20	15	50	TO-8
A82-1	Cascadable	20	250	19	2.8	26	15	15	50	TO-8
A83-1	Cascadable	10	250	35.5	2.5	9	-2	15	31	TO-8
A87-1	Cascadable	10	400	16	3.4	31	17	15	30	TO-8
A87-2	Cascadable	10	300	16	2.9	24	11	5	15	TO-8
AM-131-PIN	Cascadable, Low Noise, Hi Linearity	5	500	11.5	4	34	19	15	65	TO-8
AM-147-PIN	Cascadable Amplifier, 10 to 500 MHz	10	500	16	4.2	31	19	15	52	TO-8
AM-153-PIN ♦	Cascadable, Low Noise	300	1800	12.4	2.5	17	8	15	13	TO-8
AM-162-PIN ♦	Cascadable, Low Noise, Hi Dynamic Range	10	100	12.5	1.1	32	15	15	11	TO-8
AMC-123-SMA ♦	Cascadable, Low Noise, Hi Linearity	5	500	10	5.5	30	18	15	62	SMA
AMC-143-SMA ♦	Cascadable	5	500	15.8	2.5	20	6	15	13	SMA
AMC-147-SMA ♦	Cascadable, Low Noise, Hi Linearity	5	500	17	3.4	33	19	15	52	SMA
AMC-162-SMA ♦	Cascadable, Low Noise, Hi Dynamic Range	10	100	12.5	1.5	30	15	15	11	SMA
AMC-176-SMA ♦	Cascadable	5	1000	13.2	4	27	13	15	38	SMA
AMC-182-SMA ♦	Cascadable, Hi Gain	5	1000	28.2	3.5	20	10	15	44	SMA
AMS-162-PIN ♦	Cascadable, Low Noise, Hi Dynamic Range	10	100	12.5	1.5	30	15	15	11	SMT
CA12 ♦	Cascadable, Low Volt	10	1200	14	2.8	20	6	5	16	SMA
CA1212 ♦	Cascadable, Low Volt	100	1200	14	1.8	29	19	5	70	SMA
CA180 ♦	Cascadable	10	500	16.5	3.4	33	18	15	63	SMA
CA18-1 ♦	Cascadable, Hi Dynamic Range	10	1000	14.7	3.8	30	16	15	44	SMA
CA231 ♦	Cascadable, Hi Gain	10	250	26	1.7	22	10	5	16	SMA
CA25-1 ♦	Cascadable	2	1500	13.5	3	22	9	15	25	SMA
CA28-2 ♦	Cascadable, Hi Efficiency	10	1500	14	3.5	24	11	5	27	SMA
CA32 ♦	Cascadable, Hi Linearity	100	2000	13	2.1	32	22	15	92	SMA
CA32-1 ♦	Cascadable, Low Noise, Low Volt	100	2000	11.5	2.5	25	16	5	44	SMA
CA4011 ♦	Cascadable, Low Noise, Low Volt	1000	4000	15.5	2	29	18	5	65	SMA
CA45 ♦	Cascadable	1000	4000	17.5	4	29	20	15	120	SMA
CA45-1 ♦	Cascadable	1000	4000	17.5	4	26	13	5	65	SMA
CA511 ♦	Cascadable	10	500	17	3.4	33	21	15	52	SMA
CA531 ♦	Cascadable	10	500	31.7	2	14	3	5	17	SMA
CA6011 ♦	Cascadable, Low Noise, Low Volt	2000	6000	14.8	1.5	30	18	5	58	SMA
CA66-3 ♦	Cascadable, Hi Efficiency	10	1000	26	3	13	3	5	16	SMA
CA67-1 ♦	Cascadable, Hi Efficiency	10	600	15	3.7	30	17	15	36	SMA
CA70-2 ♦	Cascadable, Low Noise, Hi Dynamic Range	10	250	8	2.2	38	19	15	25	SMA
CA74 ♦	Cascadable, Hi Gain	5	500	30	3	20	9	15	40	SMA
CA75 ♦	Cascadable	5	500	21	2.1	21	9	15	24	SMA
CA76 ♦	Cascadable, Hi Gain	5	500	28	3	28	15	15	62	SMA
CA78 ♦	Cascadable	5	300	14	3.5	35	20	15	65	SMA
CA81-2 ♦	Cascadable	20	500	24.5	3	28	15	15	29	SMA
CA82 ♦	Cascadable	20	250	25	2.8	31	20	15	50	SMA
CA83-1 ♦	Cascadable	10	250	35.5	2.5	9	-2	15	31	SMA
CA87-1 ♦	Cascadable	10	400	16	3.4	31	17	15	30	SMA

Hybrid Amplifiers - LNA (continued)

Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	Gain (dB)	Noise Figure (mA)	OIP3 (dBm)	Output PldB (dBm)	Bias Voltage (V)	Bias Current (mA)	Package
CPA38 ♦	Cascadable, Medium Power	200	2000	10	4	34	23	15	150	TO-5
EA1	Cascadable	5	400	14	4.3	13	-5	15	10	SMA
EA53-2	Cascadable	5	500	19	3.6	24	11	15	33	SMA
MAAM-007272-OCA514	Cascadable, Hi Gain	5	500	28	4	32	19	15	96	SMT
MAAM-007272-OCA515 ♦	Cascadable, Hi Gain	5	500	27.5	3.5	33	22	15	127	SMT
MAAM-007272-SMA514	Cascadable, Hi Gain	5	500	28	4	32	19	15	96	TO-8
MAAM-007272-SMA515	Cascadable, Hi Gain	5	500	27.5	3.5	33	22	15	127	SMA
MAAM-007501-0A2002	Cascadable	20	2700	11.5	2.5	40	27	9	165	SMT
MAAM-007501-CA2002	Cascadable	20	2700	11.5	2.5	40	27	9	165	SMA
MAAM-007501-SA2002	Cascadable	20	2700	11.5	2.5	40	27	9	165	SMA
MAAM-007844-OCA801 ♦	Cascadable	10	200	27.3	2	28	16	15	30	SMT
MAAM-008198-OCA162	Cascadable, Hi Efficiency	10	1200	13	3.5	18	6	5	15	TO-8
MAAM-008198-SMA162	Cascadable, Hi Efficiency	10	1200	13	3.5	18	6	5	15	SMA
MAAM-008199-000A51	Cascadable	10	400	15	2.7	10	-4	15	7	TO-8
MAAM-008317-CA7503 ♦	Cascadable	10	500	20.5	1.7	16	3	15	14	SOT
PA38	Cascadable, Medium Power	200	2000	10	4	34	23	15	150	SMT
PAW1027 ♦	Ultra Linear Power, Multi Carrier	35	350	38.5	3.7	43	31	24	300	SMT
SMA1	Cascadable	5	500	16	2.4	11	-1	15	9	SMT
SMA101	Cascadable, Hi Linearity	5	100	17	3	36	23	12	105	SMT
SMA1031	Cascadable, Hi Gain	10	1000	28.5	2.7	22	10	5	36	SMT
SMA11-2	Cascadable	5	1000	16	2.5	10	-1	15	9	SMT
SMA1211	Cascadable, Low Volt	10	1200	14	2.8	20	6	5	16	SMT
SMA1212	Cascadable, Low Volt	100	1200	14	1.8	29	19	5	70	SMT
SMA180	Cascadable	10	500	16.5	3.4	33	18	15	63	SMT
SMA18-1	Cascadable, Hi Dynamic Range	10	1000	14.7	3.8	30	16	15	44	SMT
SMA231	Cascadable, Hi Gain	10	250	26	1.7	22	10	5	16	SMT
SMA28-2	Cascadable, Hi Efficiency	10	1500	14	3.5	24	11	5	27	SMT
SMA32	Cascadable, Hi Linearity	100	2000	13	2.1	32	22	15	92	SMT
SMA32-1	Cascadable, Low Noise, Low Volt	100	2000	11.5	2.5	25	16	5	44	SMT
SMA4011	Cascadable, Low Noise, Low Volt	1000	4000	15.5	2	29	18	5	65	SMT
SMA4012	Cascadable, Low Noise, Low Volt	1000	4000	18	3.5	26	16	5	65	SMT
SMA411	Cascadable, Low Noise	10	400	15.8	3	24	10	5	16	SMT
SMA45	Cascadable	1000	4000	17.5	4	29	20	15	120	SMT
SMA45-1	Cascadable	1000	4000	17.5	4	26	13	5	65	SMT
SMA531	Cascadable	10	500	31.7	2	14	3	5	17	SMT
SMA58	Cascadable	5	500	11.5	4	34	19	15	65	SMT
SMA59	Cascadable, Hi Dynamic Range	5	500	11.5	4.3	36	22	15	88	SMT
SMA6011	Cascadable, Low Noise, Low Volt	1500	6000	14.8	1.5	30	18	5	58	SMT
SMA61	Cascadable, Low Noise, Low Volt	2000	6000	7.5	3.2	25	13	5	35	SMT
SMA611	Cascadable, Low Noise, Low Volt	5	700	15	3.2	24	13	5	31	SMT
SMA63	Cascadable	5	1000	16	3	15	4	15	14	SMT
SMA66-3	Cascadable, Hi Efficiency	10	1000	26	3	13	3	5	16	SMT
SMA67-1	Cascadable, Hi Efficiency	10	600	15	3.7	30	17	15	36	SMT
SMA70	Cascadable, Low Noise, Hi Dynamic Range	10	250	8	1.6	24	8	15	10	SMT



Hybrid Amplifiers - LNA (continued)

Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	Gain (dB)	Noise Figure (mA)	OIP3 (dBm)	Output P1dB (dBm)	Bias Voltage (V)	Bias Current (mA)	Package
SMA70-1	Cascadable, Low Noise, Hi Dynamic Range	10	250	8	1.8	28	14	15	15	SMT
SMA70-2	Cascadable, Low Noise, Hi Dynamic Range	10	300	8	2.2	38	19	15	25	SMT
SMA70-3	Cascadable, Low Noise, Hi Dynamic Range	15	300	8	2.8	40	21	15	37	SMT
SMA73	Cascadable, Hi Gain	5	500	32	3.5	15	2	15	20	SMT
SMA74	Cascadable, Hi Gain	5	500	30	3	20	9	15	40	SMT
SMA75	Cascadable	5	500	21	2.1	21	9	15	24	SMT
SMA75-3	Cascadable	10	500	20.5	1.7	16	3	15	14	SMT
SMA76	Cascadable, Hi Gain	5	500	28	3	28	15	15	62	SMT
SMA76-1	Cascadable, Hi Efficiency	5	500	27.5	3	26	13	5	47	SMT
SMA78	Cascadable	5	300	14	3.5	35	20	15	65	SMT
SMA80	Cascadable	10	550	29	2.3	27	14	15	45	SMT
SMA80-1	Cascadable	10	200	27.3	2	28	16	15	30	SMT
SMA81	Cascadable	20	250	24.5	2.6	28	17	15	33	SMT
SMA81-1	Cascadable	20	250	25	2.5	27	14	15	25	SMT
SMA81-2	Cascadable	20	500	24.5	3	28	15	15	29	SMT
SMA82	Cascadable	20	250	25	2.8	31	20	15	50	SMT
SMA82-1	Cascadable	20	250	19	2.8	26	15	15	50	SMT
SMA83-1	Cascadable	10	250	35.5	2.5	9	-2	15	31	SMT
SMA87-1	Cascadable	10	400	16	3.4	31	17	15	30	SMT
SMA87-2	Cascadable	10	300	16	2.9	24	11	5	15	SMT
SMPA38	Cascadable, Medium Power	200	2000	10	4	34	23	15	150	SMT

Hybrid Amplifiers - Limiting

Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	Gain (dB)	Output P1dB (dBm)	Attenuator Range (dB)	Bias Voltage (V)	Bias Current (mA)	Package
AL7	Cascadable, Limiting Amplifier	50	500	13	2	5	15	54	TO-8
CAL7 ♦	Cascadable, Limiting Amplifier	50	500	13	2	5	15	54	SMA
CLA17 ♦	Cascadable, Limiting Amplifier	10	1000	11.5	10	5.8	15	55	SMA
CLA7 ♦	Cascadable, Limiting Amplifier	50	500	12.5	12	7	15	54	SMA
LA17	Cascadable, Limiting Amplifier	10	1000	11.5	10	5.8	15	55	TO-8
LA7	Cascadable, Limiting Amplifier	50	500	12.5	12	7	15	54	TO-8
SMAL7	Cascadable, Limiting Amplifier	20	550	13	-1.5	5	15	54	SMT
SMLA17	Cascadable, Limiting Amplifier	10	1000	11.5	10	5.8	15	55	SMT
SMLA7	Cascadable, Limiting Amplifier	50	500	12.5	12	7	15	54	SMT

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

Hybrid Mixers - Microwave								
Part Number	Description	Min Frequency RF/LO (MHz)	Max Frequency RF/LO (MHz)	Min Frequency IF (MHz)	Max Frequency IF (MHz)	LO Drive (dBm)	Conversion Loss (dB)	Package
M14A ♦	Double Balanced	6000	14000	0	2000	7	6.5	SMA
M1H ♦	Double Balanced	180	620	0	200	7	7	SMA
M2AC ♦	Double Balanced	10	1500	0	800	7	7.5	SMA
M2B ♦	Double Balanced	10	1600	0	800	13	7.5	TO-8
M2BC ♦	Double Balanced	10	1600	0	800	13	7.5	SMA
M2E	Double Balanced	10	1000	0	600	20	8	TO-8
M2EC ♦	Double Balanced	10	1000	0	600	20	8	SMA
M2G	Double Balanced	800	3500	0	1500	7	8	TO-8
M2GC ♦	Double Balanced	800	3500	0	1500	7	8	SMA
M2T ♦	Triple Balanced	10	2400	1	1000	13	8	SMA
M2TC ♦	Triple Balanced	10	2400	1	1000	13	8	SMA
M4A ♦	Double Balanced	10	1500	0	1000	7	7.5	Flatpack-SMT
M4TH ♦	Termination Insensitive	1	3400	1	2000	23	8	Flatpack-SMT
M50A ♦	Triple Balanced	2000	18000	2000	18000	10	8	Minpac
M50AC ♦	Triple Balanced	2000	18000	2000	18000	10	8	SMA
M50C ♦	Triple Balanced	2000	26000	1000	15000	10	8	SMA
M51C ♦	Triple Balanced	2000	24000	1000	15000	10	8	SMA
M52C ♦	Triple Balanced	2000	24000	100	5000	10	8	SMA
M53C ♦	Triple Balanced	2000	26000	100	6000	10	8	SMA
M63C ♦	Double Balanced	2500	5500	0	1500	9	5.5	SMA
M63H ♦	Double Balanced	2500	7500	0	1500	20	6	Minpac
M63HC ♦	Double Balanced	2500	7500	0	1500	20	6	SMA
M67C ♦	Double Balanced	9000	15000	0	2500	10	6.5	SMA
M6D-50 ♦	Double Balanced	0.05	200	0	200	7	7	Relay Header
M6E-50 ♦	Double Balanced	5	500	0	500	7	7.5	Relay Header
M6EH ♦	Double Balanced	5	750	0	500	20	7.5	Relay Header
M74 ♦	Double Balanced	7000	18000	0	3000	10	6.5	Minpac
M74C ♦	Double Balanced	7000	18000	0	3000	10	6.5	SMA
M76 ♦	Double Balanced	4500	9500	0	2000	10	6	Minpac
M76C ♦	Double Balanced	4500	9500	0	2000	10	6	SMA
M76H ♦	Double Balanced	4500	8500	0	2000	20	7	Minpac
M76HC ♦	Double Balanced	4500	8500	0	2000	20	7	SMA
M77C ♦	Double Balanced	8000	12500	0	2500	10	5.5	SMA
M79C ♦	Double Balanced	5000	18000	0	3000	10	7	SMA
M79H ♦	Double Balanced	5000	18000	0	3000	20	7.5	Minpac
M79HC ♦	Double Balanced	5000	18000	0	3000	20	7.5	SMA
M80C ♦	Double Balanced	4000	18000	0	3000	7	6.5	SMA
M83	Triple Balanced	1000	18000	30	5000	13	7.5	Minpac
M83C ♦	Triple Balanced	1000	18000	30	5000	13	7.5	SMA
M85 ♦	Double Balanced	2000	18000	0	1000	7	8	Minpac
M85C ♦	Double Balanced	2000	18000	0	1000	7	8	SMA
M86C ♦	Double Balanced	3500	18000	0	3000	7	7	SMA
M87C ♦	Triple Balanced	500	19000	30	5000	13	9	SMA
M88C ♦	Triple Balanced	2000	18000	1000	8000	13	8	SMA
M88H ♦	Triple Balanced	2000	18000	2000	8000	21	8	Minpac



FREQUENCY CONVERSION PRODUCTS



Hybrid Mixers - Microwave (continued)								
Part Number	Description	Min Frequency RF/LO (MHz)	Max Frequency RF/LO (MHz)	Min Frequency IF (MHz)	Max Frequency IF (MHz)	LO Drive (dBm)	Conversion Loss (dB)	Package
M88HC ♦	Triple Balanced	2000	18000	2000	8000	21	8	SMA
M89C ♦	Triple Balanced	1000	18000	1000	8000	10	8	SMA
M8H-3 ♦	Double Balanced	3700	4200	0	2000	7	5	TO-8
M8H-7 ♦	Double Balanced	2400	6000	0	2000	7	6	TO-8
M8HC-7 ♦	Double Balanced	2400	6000	0	2000	7	6	SMA
M8T ♦	Termination Insensitive	1	3400	1	2000	10	7	TO-8
M8TC ♦	Termination Insensitive	1	3400	1	2000	10	7	SMA
M8TH ♦	Termination Insensitive	1	3400	1	2000	23	7.5	TO-8
M8THC ♦	Termination Insensitive	1	3400	1	2000	23	7.5	SMA
M93C ♦	Triple Balanced	2000	18000	30	4000	10	8	SMA
M9BC ♦	Double Balanced	0.5	500	0	500	17	7	Relay Header
M9H	Double Balanced	10	1500	0	600	20	8	TO-8
M9HC ♦	Double Balanced	10	1500	0	600	20	8	SMA
MAC-50-PIN ♦	Double Balanced	0.2	200	0	200	7	6	TO-5
MAC-51-PIN ♦	Double Balanced	5	500	0	500	7	7	TO-5
MC2110 ♦	Double Balanced	3400	4700	0	1000	10	6.2	Open Carrier
MC2307 ♦	Double Balanced	2200	8000	0	2000	7	7	Open Carrier
MC2707 ♦	Double Balanced	10000	15000	0	2000	7	7	Open Carrier
MC2710 ♦	Double Balanced	10000	15000	0	2000	10	6	Open Carrier
MC2720 ♦	Double Balanced	10000	15000	0	2000	20	6	Open Carrier
MC3013 ♦	Double Balanced	20000	16000	1000	1600	13	8	Open Carrier
MC4107 ♦	Double Balanced	2000	10000	0	2000	7	7.5	Open Carrier
MC4113 ♦	Double Balanced	2000	10000	0	2000	13	7.5	Open Carrier
MC4120 ♦	Double Balanced	2000	10000	0	2000	20	7.5	Open Carrier
MC4507 ♦	Double Balanced	4000	20000	0	4000	7	7.5	Open Carrier
MC4510 ♦	Double Balanced	4000	20000	0	4000	10	7.5	Open Carrier
MC4513 ♦	Double Balanced	4000	20000	0	4000	13	7.5	Open Carrier
MD-123-PIN ♦	Double Balanced	10	3000	10	3000	7	8	FP-2
MD-148-PIN ♦	Double Balanced	10	1500	10	1500	10	6	FP-2
MD-149-PIN ♦	Double Balanced	10	1500	10	1500	7	7.5	FP-2
MD-158-PIN ♦	Termination Insensitive	5	1500	0	1000	7	7	FP-2
MD-160-PIN ♦	Termination Insensitive	1	1500	1	1000	13	9	RH-3
MD-161-PIN ♦	Termination Insensitive	1	500	0	500	13	8	FP-2
MD-169-PIN ♦	Termination Insensitive	1	3500	1	3500	10	10	FP-2
MD-179-PIN ♦	Termination Insensitive	1	4000	5	1500	7	10.5	FP-2
MD-189-PIN ♦	High Level Termination Insensitive	1	3500	1	3500	23	8	FP-2
MDC-162-SMA ♦	Termination Insensitive	1000	7000	10	2000	13	6	C-2
MDC-169-SMA ♦	Termination Insensitive	1	3500	1	3500	10	10	C-7
MDC-179-SMA ♦	Termination Insensitive	1	4000	5	1500	7	10.5	C-7
MDS-148-PIN	Double Balanced	10	1500	10	1500	10	6	SF-1
MDS-149-PIN ♦	Double Balanced	10	1500	10	1500	7	6	SF-1
MDS-158-PIN ♦	Termination Insensitive	5	1500	0	1000	7	9	SF-1
MDS-169-PIN ♦	Termination Insensitive	1	3500	5	1500	10	8	SF-1
MDS-189-PIN ♦	High Level Termination Insensitive	1	3500	1	3500	23	8	SF-1

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

Hybrid Mixers - Microwave (continued)								
Part Number	Description	Min Frequency RF/LO (MHz)	Max Frequency RF/LO (MHz)	Min Frequency IF (MHz)	Max Frequency IF (MHz)	LO Drive (dBm)	Conversion Loss (dB)	Package
MDS-222-PIN ♦	Double Balanced	0.2	200	0.2	200	7	7.5	SF-1
MDS-223-PIN ♦	Double Balanced	10	500	10	500	7	7	SF-1
MY50 ♦	Triple Balanced	2000	26000	1000	15000	10	8	Versapac
MY50A ♦	Triple Balanced	2000	26000	1000	12000	10	8	Versapac
MY50AC ♦	Triple Balanced	2000	26000	1000	12000	10	8	SMA
MY50C ♦	Triple Balanced	2000	26000	1000	15000	10	8	SMA
MY51 ♦	Triple Balanced	2000	24000	1000	15000	10	8	Versapac
MY51C ♦	Triple Balanced	2000	24000	1000	15000	10	8	SMA
MY52 ♦	Triple Balanced	2000	24000	100	5000	10	8	Versapac
MY52C ♦	Triple Balanced	2000	24000	100	5000	10	8	SMA
MY63 ♦	Double Balanced	2500	7000	0	15000	9	5.8	Versapac
MY63C ♦	Double Balanced	2500	7000	0	15000	9	5.8	SMA
MY63H ♦	Double Balanced	2500	7500	0	1500	20	6	Versapac
MY63HC ♦	Double Balanced	2500	7500	0	1500	20	6	SMA
MY76 ♦	Double Balanced	4500	9500	0	2000	10	6	Versapac
MY76C ♦	Double Balanced	4500	9500	0	2000	10	6	SMA
MY76H ♦	Double Balanced	4500	8500	0	2000	20	7	Versapac
MY76HC ♦	Double Balanced	4500	8500	0	2000	20	7	SMA
MY77 ♦	Double Balanced	8000	12500	0	2500	10	5.5	Versapac
MY77C ♦	Double Balanced	8000	12500	0	2500	10	5.5	SMA
MY82 ♦	Triple Balanced	2000	18000	30	5000	13	7.5	Versapac
MY82C ♦	Triple Balanced	2000	18000	30	5000	13	7.5	SMA
MY83H ♦	Triple Balanced	2	18000	30	5000	20	8.5	Versapac
MY83HC ♦	Triple Balanced	2	18000	30	5000	20	8.5	SMA
MY84 ♦	Double Balanced	1800	10000	0	1000	9	6.5	Versapac
MY84C ♦	Double Balanced	1800	10000	0	1000	9	6.5	SMA
MY85 ♦	Double Balanced	2000	18000	0	1000	7	8	Versapac
MY85C ♦	Double Balanced	2000	18000	0	1000	7	8	SMA
MY87 ♦	Triple Balanced	500	19000	30	5000	13	10.5	Versapac
MY87C ♦	Triple Balanced	500	19000	30	5000	13	10.5	SMA
MY88	Triple Balanced	2000	18000	1000	8000	13	8	Versapac
MY88C ♦	Triple Balanced	2000	18000	1000	8000	13	8	SMA
MY88HC ♦	Triple Balanced	1000	18000	1000	8000	21	8	SMA
MY89 ♦	Triple Balanced	2000	18000	2000	8000	10	8	Versapac
MY89C ♦	Triple Balanced	2000	18000	2000	8000	10	8	SMA
MY93 ♦	Triple Balanced	2000	18000	30	4000	10	8	Versapac
MY93C ♦	Triple Balanced	2000	18000	30	4000	10	8	SMA
MZ5010 ♦	Triple Balanced	2000	26000	1	15000	10	8.5	Versapac
MZ5010C ♦	Triple Balanced	2000	26000	1	15000	10	8.5	SMA
MZ6310C ♦	Double Balanced	250	5500	0	1500	10	7	SMA
MZ7407 ♦	Double Balanced	6000	18000	0	3000	7	6.5	Versapac
MZ7407C ♦	Double Balanced	6000	18000	0	3000	7	6.5	SMA
MZ7410 ♦	Double Balanced	6000	18000	0	3000	10	6.5	Versapac
MZ7410C ♦	Double Balanced	6000	18000	0	3000	10	6.5	SMA
MZ7420 ♦	Double Balanced	6000	18000	0	3000	20	7.5	Versapac



Hybrid Mixers - Microwave (continued)

Part Number	Description	Min Frequency RF/LO (MHz)	Max Frequency RF/LO (MHz)	Min Frequency IF (MHz)	Max Frequency IF (MHz)	LO Drive (dBm)	Conversion Loss (dB)	Package
MZ7420C ♦	Double Balanced	6000	18000	0	3000	20	7.5	SMA
MZ8810C ♦	Triple Balanced	2000	18000	1000	8000	10	7.5	SMA
MZ8813 ♦	Triple Balanced	2000	18000	1000	8000	13	7	Versapac
MZ9310 ♦	Triple Balanced	2000	18000	30	5000	10	7.5	Versapac
MZ9310C ♦	Triple Balanced	2000	18000	30	5000	10	7.5	SMA
MZ9313 ♦	Triple Balanced	2000	18000	30	5000	13	7	Versapac
MZ9313C ♦	Triple Balanced	2000	18000	30	5000	13	7	SMA

Mixers - RF

Part Number	Description	Min Freq RF/LO (MHz)	Max Freq RF/LO (MHz)	Min Freq IF (MHz)	Max Freq IF (MHz)	LO Drive (dBm)	Conversion Loss (dB)	Package
CSM1-10	Double Balanced	10	2000	1	500	10	7.5	SMT
CSM1-13	Double Balanced	10	1500	1	500	13	7.5	SMT
CSM1-17	Double Balanced	10	1500	1	500	17	7.5	SMT
CSM2-10	Double Balanced	10	2800	10	2000	10	8.5	SMT
CSM2-13	Double Balanced	10	2800	10	2000	13	8.5	SMT
CSM2-17	Double Balanced	10	2800	10	2000	17	8.5	SMT
CSM4T	Termination Insensitive	1	3400	1	2000	10	8	SMT
CSM4T17	Termination Insensitive	1	3400	1	2000	17	8	SMT
CSM4TH	Termination Insensitive	1	3400	1	2000	23	8	SMT
CSM5T	Termination Insensitive	50	4800	50	3000	10	7.2	SMT
CSM5T17	Termination Insensitive	50	4800	50	3000	17	7.8	SMT
CSM5TH	Termination Insensitive	50	4800	50	3000	23	7	SMT
SM2E	Double Balanced	10	1000	0	600	20	8	SMT
SM4A	Double Balanced	10	1500	0	1000	7	7.5	SMT
SM4B ♦	Double Balanced	10	1500	0	1000	13	7.5	SMT
SM4G ♦	Double Balanced	800	2400	0	1500	7	7.5	SMT
SM4T	Termination Insensitive	1	3400	1	2000	10	8	SMT
SM4T17	Termination Insensitive	1	3400	1	2000	17	8	SMT
SM4TH	Termination Insensitive	1	3400	1	2000	23	8	SMT
SM5T	Termination Insensitive	50	5000	50	3000	10	7.5	SMT
SM5T17	Termination Insensitive	50	5000	50	3000	17	7.5	SMT
SM5TH	Termination Insensitive	50	5000	50	3000	23	7.7	SMT
SM6D	Double Balanced	0.05	200	0	200	7	7	SMT
SM6EH	Double Balanced	5	750	0	500	20	7.5	SMT
SM6V	Double Balanced	0.4	500	0	500	7	6.5	SMT

Frequency Doublers

Part Number	Description	Min Input Frequency (MHz)	Max Input Frequency (MHz)	Min Output Frequency (MHz)	Max Output Frequency (MHz)	Input Power (dBm)	Multiply Factor	Package
CSFD25 ♦	Frequency Doubler	10	2400	20	4800	10	2	SMT
CSFD25H ♦	Frequency Doubler	10	2400	20	4800	23	2	SMT
CSFD26 ♦	Frequency Doubler	50	3300	100	6600	10	2	SMT
FD25 ♦	Frequency Doubler	5	2400	10	4800	10	2	TO-8
FD25C ♦	Frequency Doubler	5	2400	10	4800	10	2	SMA
FD25E ♦	Frequency Doubler	5	2400	10	4800	10	2	FP-2
FD25H ♦	Frequency Doubler	5	2400	10	4800	23	2	TO-8
FD25HC ♦	Frequency Doubler	5	2400	10	4800	23	2	SMA

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

Frequency Doublers (continued)								
Part Number	Description	Min Input Frequency (MHz)	Max Input Frequency (MHz)	Min Output Frequency (MHz)	Max Output Frequency (MHz)	Input Power (dBm)	Multiply Factor	Package
FD26	Frequency Doubler	50	3300	100	6600	10	2	TO-8
FD26C ♦	Frequency Doubler	50	3300	100	6600	10	2	SMA
FD93 ♦	Frequency Doubler	2000	9000	4000	18000	12	2	Versapac
FD93C ♦	Frequency Doubler	2000	9000	4000	18000	12	2	SMA
FD93H	Frequency Doubler	2000	9000	4000	18000	19	2	Versapac
FD93HC ♦	Frequency Doubler	2000	9000	4000	18000	19	2	SMA
FDC2310 ♦	Frequency Doubler	1500	8000	3000	16000	10	2	Open Carrier
FDC2710 ♦	Frequency Doubler	3500	8000	7000	16000	10	2	Open Carrier
FDZ5013 ♦	Frequency Doubler	3000	12000	6000	24000	13	2	Versapac
FDZ5013C ♦	Frequency Doubler	3000	12000	6000	24000	13	2	SMA
FM-104-PIN ♦	Frequency Doubler	75	1500	150	3000	24	2	FP-3
FM-105-PIN ♦	Frequency Doubler	10	750	20	1500	24	2	RH-3
FM-107-PIN ♦	Frequency Doubler	5	2400	10	4800	10	2	FP-2
FMS-109-PIN ♦	Frequency Doubler	5	2400	10	4800	10	2	SMT
SFD25	Frequency Doubler	10	2400	20	4800	10	2	SMT
SFD25H	Frequency Doubler	5	2400	10	4800	23	2	SMT
SFD26	Frequency Doubler	50	3300	100	6600	10	2	SMT



Limiters - Signal								
Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	CW Input Power (dBm)	Peak Power (W)	Leakage (mW)	Insertion Loss	Package
CL1	Cascadable, Signal Limiter	5	3000	20	1	3	3	SMA
CL42 ♦	Cascadable, Signal Limiter	50	4000	20	1	3	4	SMA
L1	Cascadable, Signal Limiter	5	3000	20	1	3	3	TO-8
L42	Cascadable, Signal Limiter	50	4000	20	1	3	4	TO-8
SML1	Cascadable, Signal Limiter	5	3000	20	1	3	3	SMT
SML42	Cascadable, Signal Limiter	50	4000	20	1	3	4	SMT

Limiters - Coaxial									
Part Number	Description	Min Frequency (GHz)	Max Frequency (GHz)	CW Input Power (dBm)	Peak Power (W)	Leakage (mW)	Recovery Time (ns)	Insertion Loss (dB)	Package
2690-1001 ♦	Coaxial Limiter	1000	2000	30	100	75	100	0.7	Connectorized-SMA
2690-1003 ♦	Coaxial Limiter	1000	2000	35	1000	100	1000	0.9	Connectorized-SMA
2690-1005 ♦	Coaxial Limiter	2000	8000	30	100	50	100	1.1	Connectorized-SMA
2690-1007 ♦	Coaxial Limiter	2000	8000	35	1000	100	1000	1.3	Connectorized-SMA
2690-1009 ♦	Coaxial Limiter	8000	18000	30	100	50	100	1.8	Connectorized-SMA
2690-1011 ♦	Coaxial Limiter	8000	18000	35	1000	100	1000	2.3	Connectorized-SMA
2690-1014 ♦	Coaxial Limiter	2000	18000	33	500	75	250	2.3	Connectorized-SMA
2690-1015 ♦	Coaxial Limiter	2000	18000	35	1000	100	1000	2.3	Connectorized-SMA

Switch/Driver									
Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	Isolation (dB)	Insertion Loss (dB)	IIP3 (dBm)	IP1dB (dBm)	Package	
MASW-007071	GaAs SPDT Switch	0	4000	30	1.8	46	29	CSP-1	
MASW-007075-000100	GaAs SPDT Absorptive Switch with ASIC Driver	0	3000	36	1.8	46	27	SOW-24	
MASWCC0006	GaAs Absorptive, Single Supply	0	4000	2.1	25	40	3	CSP-2	
SW-226-PIN	GaAs	0	4000	48	1	46	27	CR-2	
SW-228-PIN	GaAs	0	4000	42	0.7	46	27	CR-2	
SW-313-PIN	Matched GaAs SPDT Switch	50	3000	52	0.8	46	30	CR-9	
SW-314-PIN	GaAs SP4T Absorptive Switch	50	3000	45	1.20	46	27	CR-14	

Attenuator/Driver - Integrated								
Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	Attenuator Range (dB)	Insertion Loss (dB)	Bit Count	IIP3 (dBm)	Package
AT-106-PIN	Digital Attenuator	5	2000	50	3.2	6	46	CR-13
AT-107-PIN	Digital Attenuator	5	2000	31.5	2.6	6	48	CR-13
AT20-0106	Digital Attenuator	0	2000	50	4.6	6	46	CR-13
AT20-0107	Digital Attenuator	0	2000	31.5	3.8	6	48	CR-13
AT20-0263	Digital Attenuator	5	2000	31	2.1	5	48	CR-12
AT20-0273	Digital Attenuator	0	2000	32	1.9	2	48	CR-11
AT-213-PIN	Digital Attenuator	5	3000	15	1.6	4	50	CR-11
AT-232-PIN	Digital Attenuator	0	2000	30	2.5	4	50	CR-6
AT-233-PIN	Digital Attenuator	5	2000	30	1.9	4	50	CR-12
AT-263-PIN	Digital Attenuator	5	2000	31	2.1	5	48	CR-12
AT-273-PIN	Digital Attenuator	5	2000	32	1.3	2	48	CR-11
AT-283-PIN	Digital Attenuator	5	2000	15.5	2.2	5	47	CR-12
AT-357-SMA ♦	Digital Attenuator	0	2000	31	6.5	5	47	SMA
MAAD-007077-000100	Digital Attenuator	50	4000	15	2.5	4	48	CSP-1
MAAD-007078-000100	Digital Attenuator	0	3000	31	3.5	5	48	CSP-1
MAAD-007079-000100	Digital Attenuator	0	2500	30	2.7	4	48	CSP-1
MAAD-007080-000100	Digital Attenuator	0	2400	50	6	6	48	CSP-1

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

Attenuator/Driver - Integrated (continued)								
Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	Attenuator Range (dB)	Insertion Loss (dB)	Bit Count	IIP3 (dBm)	Package
MAAD-007081-000100	Digital Attenuator	0	3500	15.5	3.2	5	48	CSP-1
MAAD-007082-000100	Digital Attenuator	0	2400	50	4.5	6	48	CSP-1
MAAD-007083-000100	Digital Attenuator	0	6000	31	3	5	48	CSP-1
MAAD-007084-000100	Digital Attenuator	0	2000	15.5	3	5	48	SOW-16
MAAD-007086-000100	Digital Attenuator	0	2000	50	3.5	6	48	SOW-24
MAAD-008790-000100	Digital Attenuator	0	4000	31	5.5	5	37	CSP-1
MAAD-009170-000100	Digital Attenuator	50	4000	15.5	5.2	5	40	CSP-1
MAAD-009194-000100	Digital Attenuator	50	3000	31	5.3	5	41	CR-12
MAAD-009195-000100	Digital Attenuator	50	3000	15.5	5.3	5	40	CR-12
MAAD-009260-000100	Digital Attenuator	50	3000	32	2.7	2	42	CR-12
MAADCC0006	Digital Attenuator	50	4000	15	2.5	4	48	CSP-1
MAATCC0005	Digital Attenuator	0	2000	31.5	3.1	6	48	SOW-24
MAATCC0006	Digital Attenuator	0	3000	30	2.6	4	50	SOIC-16
MAATCC0007	Digital Attenuator	0	2000	31	2.3	5	48	SOW-16
MAATCC0008	Digital Attenuator	0	3000	15	1.7	4	50	SOIC-16
MAATCC0009	Digital Attenuator	0	4000	31.5	3.4	6	48	CSP-1
MAATCC0010	Digital Attenuator	0	3000	31	3.6	5	48	CSP-1
MAATCC0011	Digital Attenuator	0	4000	31.5	5.1	6	48	CSP-1
MAATCC0012	Digital Attenuator	0	2500	30	2.7	4	48	CSP-1
MAATCC0014	Digital Attenuator	0	3500	15.5	3.2	5	48	CSP-1

Voltage Variable - Attenuator							
Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	Attenuator Range (dB)	Insertion Loss (dB)	IIP3 (dBm)	Package
CG30 ♦	Voltage Controlled Module	100	2000	44	2.3		SMA
CG40 ♦	Voltage Controlled Module	500	4000	32	2.5		SMA
CLG1 ♦	Thin-Film PIN Linearizer						SMA
G1	Voltage Controlled Module	5	2000	30	2.3		TO-8
G2	Voltage Controlled Module	5	2000	28	2.6		TO-8
G30	Voltage Controlled Module	100	2000	44	2.3		TO-8
G40	Voltage Controlled Module	500	4000	32	2.5		TO-8
LG1	Thin-Film PIN Linearizer						TO-8
MAAM-007987-000CG2 ♦	Voltage Controlled Module	5	2000	23	2.6		SMA
MAAV-007088-000100	Pin Diode Based Variable	50	1000	42	1.8	32	SOW-16
MAAV-007090-000100	Voltage Variable Absorptive	1700	2000	35	2.8	31	SOW-16
MAAV-007092-000100	Voltage Variable Absorptive	800	1000	34	3.4	40	CSP-8
SMG1	Voltage Controlled Module	5	2000	30	2		SMT
SMG2	Voltage Controlled Module	5	2000	23	2.3		SMT
SMG30	Voltage Controlled Module	100	2000	44	2.3		SMT
SMG40	Voltage Controlled Module	500	4000	32	2.5		SMT
SMLG1	Thin-Film PIN Linearizer						SMT

Drivers									
Part Number	Description	Vcc (V)	Vee (V)	Vdd (V)	ISOURCE (mA)	ISINK (mA)	Propagation Delay (ns)	Rise/Fall Time (ns)	Package
MADR-009151-000DIE	Die for MADRCC0006	5	-5		1	1	22	9	DIE
MADR-009269-000100	Single Driver for GaAs FET or PIN Diode Switches and Attenuators	5	-5	5	50	50	22	5	SOIC8
MADR-009443-000100	Quad for Switches & Attenuators	5	-5	5	35	35	22	6	4 mm PQFN-20LD
MADRCC0002 ♦	Dual Linear for Vector Modulators	5			20			5000	4 x 6 mm PQFN-32LD



Drivers (continued)									
Part Number	Description	Vcc (V)	Vee (V)	Vdd (V)	ISOURCE (mA)	ISINK (mA)	Propagation Delay (ns)	Rise/Fall Time (ns)	Package
MADRCC0004	Quad for Switches & Attenuators	5	-5		1	1	50	25	SOIC16
MADRCC0005	Single for Switches & Attenuators	5	-5		1	1	50	25	SOIC8
MADRCC0006	Single for Switches & Attenuators	5	-5		1	1	22	9	SOIC8
MADRCC0007	Quad for Switches & Attenuators	5	-5		1	1	22	9	SOIC16

Couplers - RF							
Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	Insertion Loss (dB)	Coupling, Normal (dB)	Isolation (dB)	Package
CH-132-BNC ♦	Bi-Directional	No	1	1000	0.7	20	40
CH-134-PIN ♦	Bi-Directional	No	10	500	1.6	11	31
CH-140-PIN ♦	Directional	No	5	1000	0.3	20	40
CHS-134-PIN ♦	Bi-Directional	No	10	500	1.6	11	31
CHS-137-PIN ♦	Bi-Directional	No	1	400	0.5	20	40
MACPCC0001	Bi-Directional	No	1700	2000	0.3	17	34
MACPCC0002	Bi-Directional	No	960	824	0.3	17	32

Couplers - Stripline							
Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	Insertion Loss (dB)	Coupling, Nominal (dB)	Isolation (dB)	Package
2020-4018-20 ♦	Directional Mini Octave	7000	12400	0.3	20	38	SMA
2020-6605-10 ♦	Directional Mini Octave	1000	2000	0.2	10	35	SMA
2020-6606-20 ♦	Directional Mini Octave	1000	2000	0.2	20	45	SMA
2020-6607-30 ♦	Directional Mini Octave	1000	2000	0.2	30	55	SMA
2020-6609-10 ♦	Directional Mini Octave	2000	4000	0.2	10	32	SMA
2020-6614-20 ♦	Directional Mini Octave	2600	5200	0.3	20	40	SMA
2020-6615-30 ♦	Directional Mini Octave	2600	5200	0.3	30	50	SMA
2020-6616-06 ♦	Directional Mini Octave	4000	8000	0.3	6	28	SMA
2020-6617-10 ♦	Directional Mini Octave	4000	8000	0.3	10	30	SMA
2020-6618-20 ♦	Directional Mini Octave	4000	8000	0.3	20	40	SMA
2020-6619-30 ♦	Directional Mini Octave	4000	8000	0.3	30	50	SMA
2020-6622-20 ♦	Directional Mini Octave	7000	12400	0.3	20	38	SMA
2020-6623-30 ♦	Directional Mini Octave	7000	12400	0.3	30	47	SMA
2020-6624-06 ♦	Directional Mini Octave	7000	18000	0.6	6	21	SMA
2020-6626-20 ♦	Directional Mini Octave	7000	18000	0.5	20	35	SMA
2020-6627-30 ♦	Directional Mini Octave	7000	18000	0.5	30	45	SMA
2020-6628-06 ♦	Directional Mini Octave	12400	18000	0.6	6	21	SMA
2025-6002-10 ♦	Stripline Directional	500	2000	0.4	10	28	SMA
2025-6004-20 ♦	Stripline Directional	500	2000	0.3	20	42	SMA
2025-6009-06 ♦	Stripline Directional	2000	8400	0.4	6	24	SMA
2025-6010-10 ♦	Stripline Directional	2000	8400	0.4	10	28	SMA
2025-6012-20 ♦	Stripline Directional	2000	8400	0.4	20	40	SMA
2025-6014-10 ♦	Stripline Directional	4000	12400	0.5	10	25	SMA
2025-6016-20 ♦	Stripline Directional	4000	12400	0.5	20	35	SMA
2025-6017-06 ♦	Stripline Directional	6000	18000	0.7	6	21	SMA
2025-6018-10 ♦	Stripline Directional	6000	18000	0.6	10	26	SMA
2025-6019-16 ♦	Stripline Directional	6000	18000	0.6	16	32	SMA
2026-6001-10 ♦	Stripline Directional	1000	12400	0.4	10	28	SMA
2026-6004-10 ♦	Stripline Directional	2000	18000	30	10	25	SMA
2026-6007-10 ♦	Stripline Directional Coupler	1000	18000	0.3	10	25	SMA
2026-6009-20 ♦	Stripline Directional	1000	18000	0.3	20	37	SMA
2026-6010-10 ♦	Stripline Directional	500	18000	0.9	10	25	SMA
2031-6330-00 ♦	Stripline 180° Hybrid	500	1000	0.4	3	25	SMA
2031-6331-00 ♦	Stripline 180° Hybrid	1000	2000	0.5	3	25	SMA
2031-6334-00 ♦	Stripline 180° Hybrid	4000	8000	0.7	3	20	SMA
2031-6335-00 ♦	Stripline 180° Hybrid	8000	12400	0.8	3	17	SMA
2031-6339-00 ♦	Stripline 180° Hybrid	7000	18000	1.2	3	14	SMA
2032-6344-00 ♦	Stripline 90° Hybrid	1000	2000	0.2	3	22	SMA



Couplers - Stripline (continued)							
Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	Insertion Loss (dB)	Coupling, Nominal (dB)	Isolation (dB)	Package
2032-6345-00 ♦	Stripline 90° Hybrid	2000	4000	0.3	3	22	SMA
2032-6347-00 ♦	Stripline 90° Hybrid	4000	8000	0.3	3	20	SMA
2032-6371-00 ♦	Stripline 90° Hybrid	2000	18000	0.6	3	20	SMA
2032-6374-00 ♦	Stripline 90° Hybrid	6500	18000	0.6	3	18	SMA
2035-6364-00 ♦	Air Dielectric 90° Hybrid	1000	2000	0.2	3	20	SMA
Power Dividers - Hybrid							
Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	Number of Channels	Amplitude Balance (dB)		Package
DS-109-PIN ♦	2-Way	10	500	2	0.2		FP-2
DS-112-PIN ♦	4-Way	10	500	4	0.2		FP-5
DS-113-PIN ♦	2-Way	0	400	2	0.2		FP-2
DS-117-PIN ♦	3-Way	1	300	3	0.3		FP-3
DS-308-BNC ♦	3-Way	1	300	3	0.3		BNC
DS-309-BNC ♦	8-Way	2	500	8	0.2		BNC
DS-310-PIN ♦	4-Way	0	300	4	0.2		FP-5
DS-312-BNC ♦	4-Way	10	500	4	0.2		BNC
DS-313-PIN ♦	2-Way	10	2000	2	0.3		FP-2
DS-318-PIN ♦	Plug-In 2-Way	5	500	2	0.2		RH-1
DS-319-PIN ♦	2-Way	10	500	2	0.2		TO-8-2
DS-323-PIN ♦	3-Way	25	1000	3	0.4		FP-3
DS-324-PIN ♦	4-Way	25	1000	4	0.3		FP-5
DS-327-PIN ♦	2-Way	5	1000	2	0.2		FP-2
DS-328-PIN ♦	3-Way	3	700	3	0.3		TO-8-2
DS-331-PIN ♦	2-Way	750	1500	2	0.2		TO-8-2
DS-409-4BNC ♦	4-Way	10	2000	4	0.5		BNC
DS-409-4SMA ♦	4-Way	10	2000	4	0.5		SMA
DS-409-4TNC ♦	4-Way	10	2000	4	0.5		TNC
DS-4-4-BNC ♦	4-Way	2	2000	4	1		BNC
DS-4-4-N ♦	4-Way	2	2000	4	1		N-Conn
DS-4-4-SMA ♦	4-Way	2	2000	4	1		SMA
DS-808-4BNC ♦	8-Way	20	2000	8	0.6		BNC
DS-808-4N ♦	8-Way	20	2000	8	5		N-Conn
DS-808-4SMA ♦	8-Way	20	2000	8	0.6		SMA
DS-808-4TNC ♦	8-Way	20	2000	8	0.6		TNC
DSS-113-PIN ♦	2-Way	0	400	2	0.2		SMT
DSS-313-PIN ♦	2-Way	10	2000	2	0.3		SMT
DSS-327-PIN ♦	2-Way	5	1000	2	0.3		SMT
DSS-333-PIN ♦	2-Way	10	500	2	0.2		SMT
H-81-4-N ♦	2-Way	5	1000	2	0.5		N-Conn
H-81-4-SMA ♦	2-Way	5	1000	2	0.5		SMA
H-8-4-SMA ♦	2-Way	2	2000	2	0.1		SMA
M3H-50-PIN ♦	3-Way	1	100	3	0.2		TO-5-2
M3V-50-PIN ♦	3-Way	50	300	3	0.2		TO-5-2
MAPDCC0001	2-Way	824	960	2	0.1		PQFN
MAPDCC0002	2-Way	1850	1990	2	0.1		PQFN
MAPDCC0003	2-Way	1510	1660	2	0.1		PQFN
MAPDCC0004	2-Way	1700	1900	2	0.1		PQFN
MAPDCC0005	3-Way	824	960	3	0.6		PQFN

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

Power Dividers - Hybrid (continued)						
Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	Number of Channels	Amplitude Balance (dB)	Package
MAPDCC0006	3-Way	1850	1990	3	0.3	PQFN
MAPDCC0009	4-Way	824	960	4	0.3	PQFN
MAPDCC0010	2-Way	2200	2500	2	0.1	PQFN
MAPDCC0011	2-Way	824	960	2	0.1	PQFN
MAPDCC0014	4-Way	1700	2000	4	0.8	PQFN
MAPDCC0017	6-Way	824	960	6	0.2	PQFN
MAPDCC0018	6-Way	1700	2000	6	0.5	PQFN
MAPDCC0021	8-Way	824	960	8	0.4	PQFN
MTH-50-PIN ♦	2-Way	1	100	2	0.1	TO-5-1
MTV-50-PIN ♦	2-Way	40	400	2	0.2	TO-5-1
T-1000-BNC ♦	2-Way	10	1000	2	0.1	BNC
T-1000-N ♦	2-Way	10	1000	2	0.1	N-Conn
T-1000-SMA ♦	2-Way	10	1000	2	0.1	SMA
T-1000-TNC ♦	2-Way	10	1000	2	0.1	TNC
THV-50-BNC ♦	2-Way	2	200	2	0.2	BNC
THV-50-N ♦	2-Way	2	200	2	0.2	N-Conn
THV-50-SMA ♦	2-Way	2	200	33	0.2	SMA
THV-50-TNC ♦	2-Way	2	200	2	0.2	TNC
TU-50-BNC ♦	2-Way	20	400	33	0.2	BNC
TU-50-N ♦	2-Way	20	400	2	0.2	N_Conn
TU-50-SMA ♦	2-Way	20	400	2	0.2	SMA

Power Dividers - Stripline						
Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	Number of Channels	Amplitude Balance (dB)	Package
2089-6201-00 ♦	Wilkinson Isolated	1000	2000	2	0.2	SMA
2089-6202-00 ♦	Wilkinson Isolated	2000	4000	2	0.2	SMA
2089-6203-00 ♦	Wilkinson Isolated	4000	8000	2	0.2	SMA
2089-6204-00 ♦	Wilkinson Isolated	8000	12400	2	0.2	SMA
2089-6206-00 ♦	Wilkinson Isolated	500	2000	2	0.3	SMA
2089-6207-00 ♦	Wilkinson Isolated	2000	8000	2	0.3	SMA
2089-6208-00 ♦	Wilkinson Isolated	2000	18000	2	0.3	SMA
2089-6209-00 ♦	Wilkinson Isolated	4000	18000	2	0.3	SMA
2089-6210-00 ♦	Wilkinson Isolated	7000	18000	2	0.3	SMA
2089-6401-00 ♦	Wilkinson Isolated	1000	2000	4	0.4	SMA
2089-6402-00 ♦	Wilkinson Isolated	2000	4000	4	0.4	SMA
2089-6403-00 ♦	Wilkinson Isolated	4000	8000	4	0.4	SMA
2089-6404-00 ♦	Wilkinson Isolated	8000	12400	4	0.5	SMA
2089-6405-00 ♦	Wilkinson Isolated	12400	18000	4	0.5	SMA
2089-6406-00 ♦	Wilkinson Isolated	500	2000	4	0.4	SMA
2089-6408-00 ♦	Wilkinson Isolated	2000	18000	4	0.5	SMA
2089-6409-00 ♦	Wilkinson Isolated	4000	18000	4	0.5	SMA
2089-6410-00 ♦	Wilkinson Isolated	7000	18000	4	0.5	SMA
2089-6801-00 ♦	Wilkinson Isolated	1000	2000	8	0.8	SMA
2089-6805-00 ♦	Wilkinson Isolated	12400	18000	8	0.8	SMA
2089-6807-00 ♦	Wilkinson Isolated	2000	8000	8	1.2	SMA
2089-6808-00 ♦	Wilkinson Isolated	2000	18000	8	1.8	SMA
2090-6205-00 ♦	2-Way Isolated	2000	18000	2	0.3	SMA
2090-6214-00 ♦	2-Way Isolated	1000	18000	2	0.4	SMA



Power Dividers - Stripline (continued)

Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	Number of Channels	Amplitude Balance (dB)	Package
2090-6304-00 ♦	3-Way Isolated	500	18000	3	0.5	SMA
2090-6414-00 ♦	4-Way Isolated	1000	18000	4	1	SMA

Couplers - Junction Hybrids RF

Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	Insertion Loss (dB)	Coupling, Nominal (dB)	Isolation (dB)	Package
H-183-4-N ♦	Hybrid Junction	30	3000	1.5	5	20	N-Conn
H-9-N ♦	Hybrid Junction	2	2000	0.4	4	40	N-Conn
HH-106-PIN ♦	Hybrid Junction	2	200	1	3	30	FP-2
HH-109-PIN ♦	Hybrid Junction	5	200	1	3	40	FP-2
HH-110-PIN ♦	Hybrid Junction	10	500	1.2	3	37	FP-2
HH-128-PIN ♦	Hybrid Junction	20	2000	1.5	3	35	FP-3
HHS-109-PIN	Hybrid Junction	5	200	1	3	40	SMT
HHS-110-PIN	Hybrid Junction	10	500	1.2	3	40	SMT

Couplers - Quadrature Hybrids

Part Number	Description	Min Frequency (MHz)	Max Frequency (MHz)	Insertion Loss (dB)	Coupling, Nominal (dB)	Isolation (dB)	Package
JH-114-PIN ♦	Quad Hybrid	20	40	0.4	3	30	FP-2
JH-115-PIN ♦	Quad Hybrid	40	80	0.4	3	30	FP-2
JH-119-PIN ♦	Quad Hybrid	80	160	0.6	3	33	FP-2
JH-121-PIN ♦	Quad Hybrid	100	200	0.6	3	25	FP-2
JH-133-PIN ♦	Quad Hybrid	20	40	0.4	3	28	TO-8-2
JH-136-PIN ♦	Quad Hybrid	175	350	0.4	3	28	FP-2
JH-139-PIN ♦	Quad Hybrid	250	500	0.4	3	30	FP-2
JH-141-PIN ♦	High-Freq Quad Hybrid	1000	2000	0.2	3	27	FP-2
JHS-113-PIN ♦	Quad Hybrid	7	14	0.4	3	28	SMT
JHS-114-PIN ♦	Quad Hybrid	20	40	0.4	3	28	SMT
JHS-115-PIN ♦	Quad Hybrid	40	80	0.4	3	30	SMT
JHS-119-PIN ♦	Quad Hybrid	80	160	0.6	3	33	SMT
JHS-121-PIN	Quad Hybrid	100	200	0.6	3	25	SMT
JHS-139-PIN ♦	Quad Hybrid	250	500	0.4	3	30	SMT
JHS-142-PIN ♦	Quad Hybrid	200	400	0.4	3	30	SMT

Transformer Products

Part Number	Description	75 Ω	Min Frequency (MHz)	Max Frequency (MHz)	Impedance Ratio	Insertion Loss (dB)	Package
TP-101-PIN	1:1, Pulse Transformer, 0.5 – 1500 MHz	No	1	1500	1:01	0.4	FP-1
TP-102-PIN	1:4, Pulse Transformer, 1 – 500 MHz	No	1	500	1:04	0.8	FP-1
TP-103-PIN	1:4, Pulse Transformer, 0.5 – 1000 MHz	No	1	1000	1:04	0.4	FP-1
TP-104-PIN	1:4, Pulse Transformer, 0.75 – 400 MHz	No	1	400	1:04	0.4	FP-1
TP-105-PIN	4:1, Pulse Transformer, 0.5 – 1000 MHz	No	1	1000	4:01	0.4	FP-1
TP-108-PIN	1:2, Pulse Transformer, 355 – 1125 MHz	No	350	1125	1:02	0.8	FP-1
TPX-75-4N	1:1.5, Auto Transformer, 10 – 1500 MHz	Yes	10	1500	01:01.5	0.3	N-Conn
MABA-0111115	1:1 Transmission Line Balun 5 – 3000 MHz	No	5	3000	1:01	0.8	FP-1
MABA-0111116	1:2 Transmission Line Balun 5 – 3000 MHz	No	5	3000	1:02	1.7	FP-1
MABA-0111129	1:1 Transmission Line Balun 50 – 3000 MHz	No	50	3000	1:01	0.7	SMT
MABA-0111130	1:2 Transmission Line Balun 5 – 3000 MHz	No	5	3000	1:02	1.3	SMT

Silicon Bipolar									
Part Number	Description	Gain BW Ft (GHz)	Gain SS @ 1 GHz (dB)	Gain SS @ 2 GHz (dB)	Noise Figure @ 1 GHz (dB)	Noise Figure @ 2 GHz (dB)	Current Gain (hFE)	Power Dissipation (mW)	Package
MATB-068100-0DIEW0	NPN Silicon Bipolar Die	9	15	12	1.2	1.6	100	600	Die

MACOM's Commitment to Quality Engineering, Manufacturing, and Quality Assurance Partnerships at All Levels

MACOM is committed to quality through interactions between engineering, manufacturing, and quality assurance groups at design, development, manufacture, test, and environmental screening levels for all MACOM products.

MACOM is firmly committed to producing and providing the highest level of quality products free of defects and deviations. Our primary goal is to achieve consistently high standards and customer satisfaction based on internal and customer expectations and requirements by:

- > Documenting procedures and specifications used in the manufacturing, testing, and environmental screening of all MACOM products

- > Calibrating equipment with standards traceable to National Institute of Standards and Technology (NIST)
 - > Assuring all incoming materials conform to documented specifications
 - > Verifying process controls at fabrication, manufacturing, and test levels
 - > Performing environmental screening and conformance inspection up to and including space level per MIL-PRF-19500, MIL-PRF-38534, MIL-PRF-38535, PEM-INST-001, and/or customer specific requirements
-

Packages

Package	Approx. Outline Dimensions (mm)	
TO-8	12.7 diameter x 11	
CR-3	15.2 x 4.6 x 1.9	
CR-6	11.4 x 8.9 x 1.9	
CR-12	11.4 x 11.4 x 2.0	
CR-13	16.5 x 11.4 x 2.3	
CR-16	9.8 x 8.3 x 1.5	
SMT-08	11.4 x 11.4 x 4.3	
Versapac	20.3 x 15.0 x 4.8	
Minpac	20.3 x 15.0 x 6.6	



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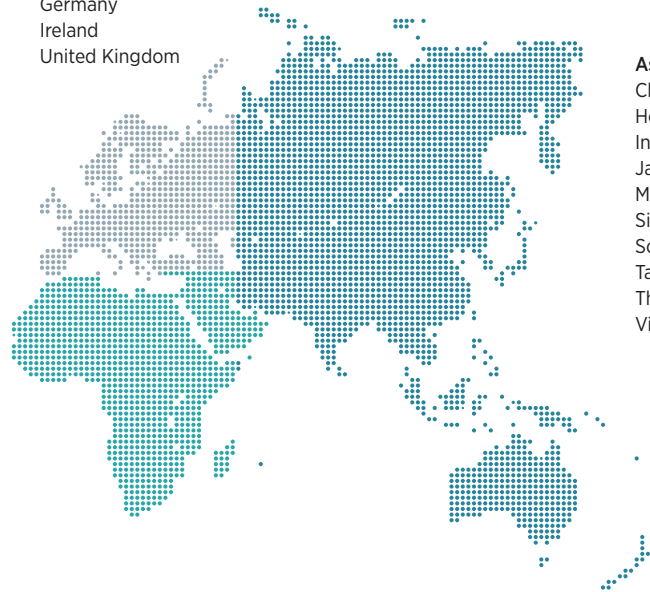
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