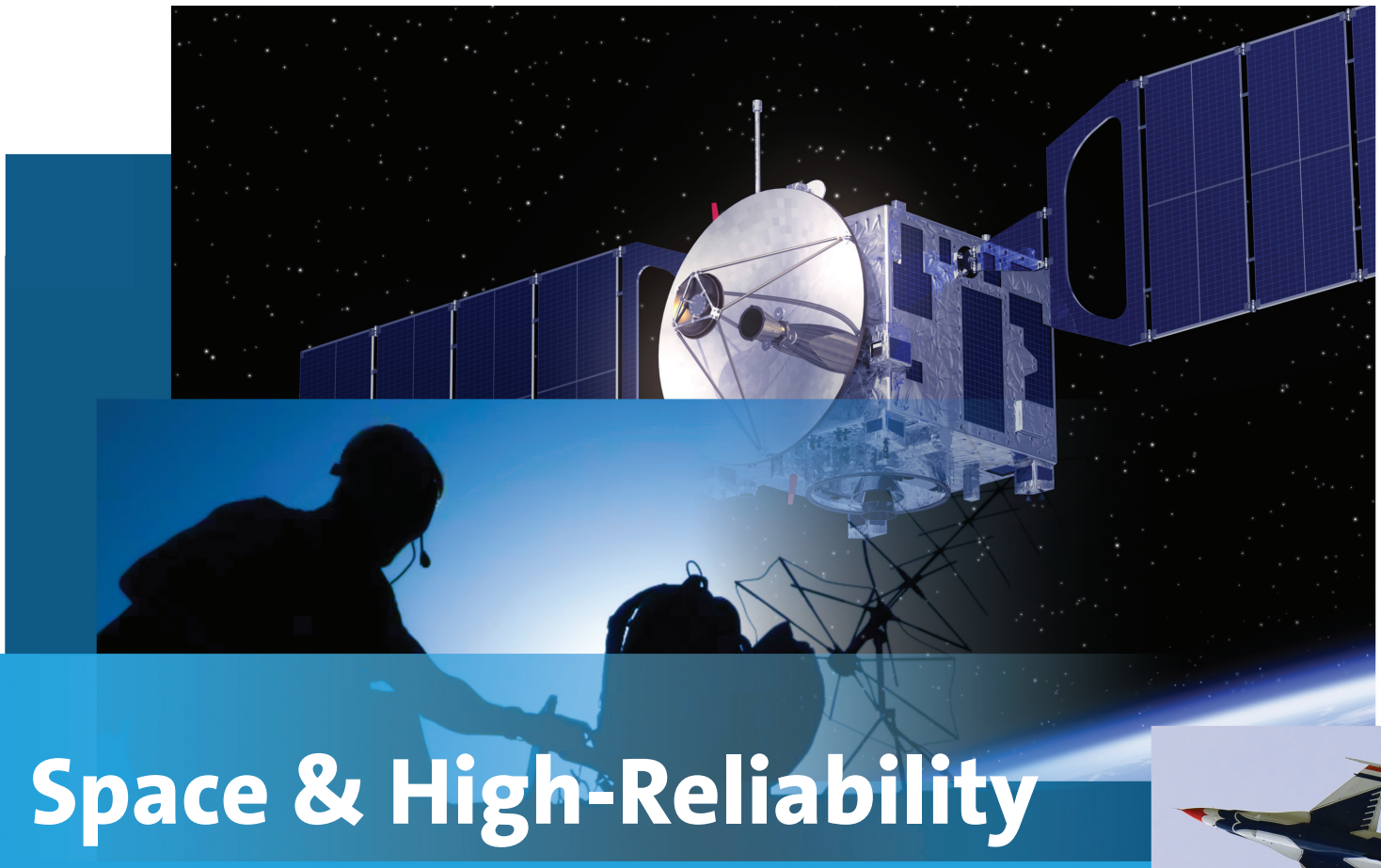

Space & High-Reliability

MACOM®

Partners from RF to Light

www.macom.com

MACOM continues to build upon our legacy of providing high-reliability products to the Aerospace and Defense industry by adding to our product portfolio and capabilities with high-reliability products for the military, defense, satellite, and aerospace industries.

MACOM also offers customer-specific design capabilities. Environmental screening is available on most products. Additionally, we have expertise in replacement designs for obsolete or discontinued products. Our applications engineering support team is responsive, flexible, innovative, and ready to help you with your next project.

Additional product information can be found on our website at macom.com. Contact our worldwide sales offices, authorized representatives, and industry-leading distributors to request samples, test boards, and application support. All contacts are listed on our website at: macom.com/contact

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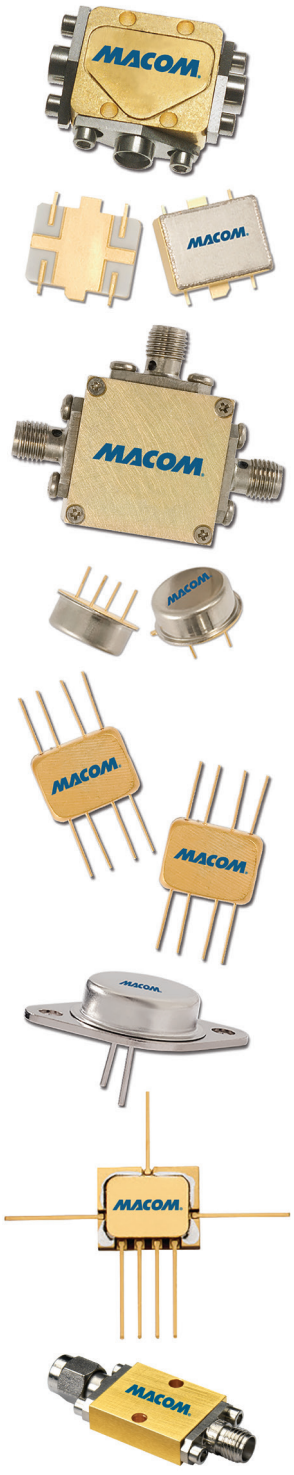

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A Spectrum of Aerospace and Defense Solutions

Discrete Components, MMICs, and Diodes

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

MACOM's standard line of RF and microwave components provides solutions to meet the 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.

MACOM's Space & High-Reliability Evolution

Watkins Johnson Company/Stellex Microwave Systems/Tyco Electronics/Anzac/ RHG/Phoenix Microwave/Metelics/Micrometrics/Hi-Rel Components & MACOM

1960s

> Pioneered production of TWT's for Pioneer, Voyager, and DSCS satellites

1970s

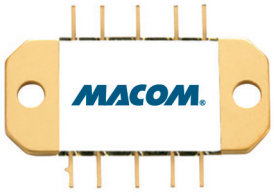
> First solid state flight qualified production amplifiers and mixers

1980s/1990s/through today

> Participated in more than 85 programs (USA & International)
> Provided hundreds of space qualified solid state space component models

High-Reliability Catalog Screened Products

> 40+ year history of proven Hi-Rel manufacturing processes supporting both thin film & solder circuit assemblies
> Same proven manufacturing processes as used in equivalent component designs for custom military and space programs
> Long established cost effective standardized screening programs for catalog products available in a variety of hermetically sealed metal package styles
> Available for screening: hybrid amplifiers, hybrid mixers, switches, diodes, MMIC bare die and packaged products
> MACOM has an extensive "in-house" environmental screening capability
> US Screening Lab to perform specific environmental test requirements
> Working to expand our partner network
> Custom environmental screening plans available for hermetically-sealed, packaged products (MIL-PRF-19500, MIL-PRF-38534, MIL-DTL- 28837B, MIL-STD-202, etc.)
> Screening available for our DIE catalog products to MIL-PRF-38534 Element Evaluation
> Plastic Encapsulated Module (PEM) qualification to PEM-INST-001 Level 1, 2, and 3



Please contact your local sales representative to discuss any environmental screening options.

Product Screening Programs

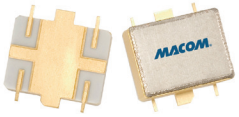
> Standard catalog environmental screening plans
> Customer specific environmental screening plans

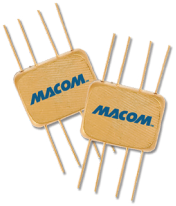
Standard Requirements Supported

> 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
> Customer Source Control Drawings

Manufacturing & Screening Flow Chart
Customer Specific High-Reliability Programs

- Group D Test
- Transistor Wafer Qualification Test Lot
- Kit Parts, Traceability, & Documentation
- Assembly
- Assembly & Quality Assurance Process Controls
- 100% Preseal Electrical Test
- 100% Non-Destruct Bond Pull
- 100% Production Internal Visual
- 100%Quality Assurance Internal Visual
- Customer Source Inspection
- Seal & Print
- Stabilization Bake
- Temperature Cycle
- Constant Acceleration
- Fine & Gross Leak Seal Tests
- PND Test
- Radiographic Inspection
- Pre Burn-In Electrical Test
- Burn-In
- Final Electrical & Group A Test with Quality Assurance Monitor
- Delta Evaluations
- External Visual
- PDA Evaluation
- Group B & C Tests
- Final Quality Assurance Inspection
- Customer Source Inspection
- Ship Hardware with Data Packet
- Added Customer Specific





Gain Block Hybrid Amplifiers

Part Number	Min Frequency (MHz)	Max Frequency (MHz)	Gain (dB)	OIP3 (dBm)	Package
SMPA511	10	500	12.7	40	SMT
EA54	5	250	27	16	TO-5
A75-2	5	250	21	19	TO-8
CA181	10	250	16.5	35	Connectorized-SMA
SMA181	10	250	16.5	35	SMT
A181	10	250	16.5	35	TO-8
CA79	5	300	14	38	Connectorized-SMA
A79	5	300	14	38	TO-8
SMA79	5	300	14	38	SMT
A56	5	400	26	27	TO-8
EA2	5	400	13.5	21	TO-5
SMA87	10	400	14	33	SMT
A87	10	400	14	33	TO-8
CA87	10	400	14	33	Connectorized-SMA
AMC-151-SMA	5	500	12	36	Connectorized-SMA
SMRA89	5	500	26.5	35	SMT
SMA74-2	5	500	26	10	SMT
A5	5	500	14.8	22	TO-8
EA54-2	5	500	29.5	20	TO-5
A74-2	5	500	26	10	TO-8
A72	5	500	15	26	TO-8
SMA72	5	500	15	26	SMT
A77	5	500	16.5	30	TO-8
A88	5	500	18.7	30	TO-8
SMA77	5	500	16.5	30	SMT
SMA88	5	500	18.7	30	SMT
RA89	5	500	26.5	35	TO-8
A54	5	500	15.5	21	TO-8
CA77	5	500	16.5	30	Connectorized-SMA
CRA89	5	500	26.5	35	Connectorized-SMA
AMC-146-SMA	10	500	21	35	Connectorized-SMA
MAAM-007502-SPA512	10	500	18	40	SMTO-8
PA511	10	500	12.7	40	TO-8
A57	10	500	14.7	28	TO-8
SMA57	10	500	14.7	28	SMT
SMA513	10	500	20	30	SMT
A55	10	500	14.7	24	TO-8
RA89-1	10	500	30	36	TO-8
SMRA89-1	10	500	30	36	SMT
PA512	10	500	18	40	TO-8
CRA89-1	10	500	30	36	Connectorized-SMA
MAAM-007502-CPA512	10	500	18	40	Connectorized-SMA
MAAM-008200-000A83	10	500	30	10	TO-8
SMA77-1	5	600	16	30	SMT
A77-1	5	600	16	30	TO-8
CA77-1	5	600	16	30	Connectorized-SMA

Detailed specifications can be found quickly on our website at macom.com by typing the part number into the search box.
All specifications are subject to change.

Gain Block Hybrid Amplifiers (continued)

Part Number	Min Frequency (MHz)	Max Frequency (MHz)	Gain (dB)	OIP3 (dBm)	Package
A5-6	6	600	15.5	21	TO-8
SMA5-6	6	600	16	21	SMT
A59-1	10	700	10.5	36	TO-8
SMA59-1	10	700	10.5	36	SMT
A89	50	800	22	30	TO-8
SMA89	100	800	22	30	SMT
AMC-184-SMA	5	1000	20	20	Connectorized-SMA
AMC-145-SMA	10	1000	10.7	32	Connectorized-SMA
CA17	10	1000	12	27	Connectorized-SMA
CA1021	10	1000	26	26	Connectorized-SMA
CRA69	10	1000	25	34	Connectorized-SMA
CRA66	10	1000	37	30	Connectorized-SMA
CA66-1	10	1000	27.5	28	Connectorized-SMA
SMA1021	10	1000	26	26	SMT
RA66	10	1000	37	30	TO-8
SMRA69	10	1000	25	34	SMT
SMA17	10	1000	12	27	SMT
A17	10	1000	12	27	TO-8
A66-1	10	1000	27.5	28	TO-8
SMA66-1	10	1000	27.5	28	SMT
RA69	10	1000	25	34	TO-8
A19-1	10	1000	11.5	35	TO-8
SMA19-1	10	1000	11.5	35	SMT
CA19-1	10	1000	11.5	35	Connectorized-SMA
A1021	10	1000	26	26	TO-8
SMRA66	10	1000	37	30	SMT
AMC-155-SMA	300	1000	12.3	30	Connectorized-SMA
CA66	10	1200	23.5	28	Connectorized-SMA
CA64	10	1200	26	20	Connectorized-SMA
SMA66	10	1200	23.5	28	SMT
SMA64	10	1200	26	20	SMT
A64	10	1200	26	20	TO-8
A66	10	1200	23.5	28	TO-8
CA24	5	1500	10	21	TO-8
A24	5	1500	20	21	TO-8
SMA24	5	1500	20	21	SMT
A27	5	1500	8.5	28	TO-8
SMA28	10	1500	11	29	SMT
CA26	10	1500	20.5	27	Connectorized-SMA
SMA29-1	10	1500	9	32	SMT
A26	10	1500	20.5	27	TO-8
A28	10	1500	11	29	TO-8
A29-1	10	1500	9	32	TO-8
SMA26	10	1500	20.5	27	SMT
CA28	10	1500	11	29	Connectorized-SMA
CA29-1	10	1500	9	32	Connectorized-SMA

Detailed specifications can be found quickly on our website at macom.com by typing the part number into the search box.
All specifications are subject to change.

Gain Block Hybrid Amplifiers (continued)

Part Number	Min Frequency (MHz)	Max Frequency (MHz)	Gain (dB)	OIP3 (dBm)	Package
A38	10	2000	9.5	30	TO-8
CA38	10	2000	9.5	30	Connectorized-SMA
SMA39	10	2000	7.5	34	SMT
SMA35	10	2000	10	21	SMT
A39	10	2000	7.5	34	TO-8
SMA38	10	2000	9.5	30	SMT
SMPA511	10	500	12.7	40	SMT
SMA37	10	2000	10	28	SMT
A37	10	2000	10	28	TO-8
A35	10	2000	10	21	TO-8
CA35	10	2000	10	21	Connectorized-SMA
CRA36	100	2000	24	22	Connectorized-SMA
SMA36	100	2000	16.5	23	SMT
RA36	100	2000	24	22	TO-8
A34	100	2000	16	18	TO-8
A36	100	2000	16.5	23	TO-8
SMRA36	100	2000	24	22	SMT
SMA34	100	2000	16	18	SMT
SMPA2010	200	2000	10	33	SMT
CA36-1	100	2300	16.2	23	Connectorized-SMA
A36-1	100	2300	16.2	23	TO-8
SMA36-1	100	2300	16.2	23	SMT
A33-1	2	2400	9	19	TO-8
SMA33-1	2	2400	9	19	SMT
CA33-1	2	2400	9	19	Connectorized-SMA
CA3010	0	2500	9.5	35	Connectorized-SMA
MAAM-007947-CA3602	100	2600	15	30	Connectorized-SMA
A36-2	100	2600	15	30	TO-8
SMA36-2	100	2600	15	30	SMT
PA38-2	200	2600	8.5	33	TO-8
SMPA38-2	200	2600	8.5	33	SMT
A43	100	3200	11.5	21	TO-8
SMA43	100	3200	11.5	21	SMT
CPA48	1000	4000	16	34	Connectorized-SMA
RA46	0	4000	25.5	30	TO-8
SMPA48	1000	4000	16	34	SMT
PA48	1000	4000	16	34	TO-8
SMRA46	1000	4000	25.5	30	SMT
SMRA62	2000	6000	16	28	SMT

Low Noise Hybrid Amplifiers

Part Number	Min Freq (MHz)	Max Freq (MHz)	Gain (dB)	Noise Figure (mA)	OIP3 (dBm)	Package
AMC-162-SMA	10	100	12.5	1.5	30	Connectorized-SMA
AMS-162-PIN	10	100	12.5	1.5	30	SF-1
AM-162-PIN	10	100	12.5	1.1	32	TO-8
A101	5	100	17	3	36	TO-8
SMA101	5	100	17	3	36	SMT

Detailed specifications can be found quickly on our website at macom.com by typing the part number into the search box.
All specifications are subject to change.

Low Noise Hybrid Amplifiers (continued)

Part Number	Min Freq (MHz)	Max Freq (MHz)	Gain (dB)	Noise Figure (mA)	OIP3 (dBm)	Package
MAAM-007844-0CA801	10	200	27.3	2	28	Connectorized-SMA
A80-1	10	200	27.3	2	28	TO-8
SMA80-1	10	200	27.3	2	28	SMT
A82-1	20	250	19	2.8	26	TO-8
SMA82-1	20	250	19	2.8	26	SMT
CA82	20	250	25	2.8	31	Connectorized-SMA
SMA82	20	250	25	2.8	31	SMT
SMA81-1	20	250	25	2.5	27	SMT
SMA81	20	250	24.5	2.6	28	SMTO-8
A81-1	20	250	25	2.5	27	TO-8
A70-3	20	250	8	2.8	40	TO-8
A82	20	250	25	2.8	31	TO-8
A81	20	250	25.5	3	28	TO-8
SMA70-1	10	250	8	1.8	28	SMT
CA83-1	10	250	35.5	2.5	9	Connectorized-SMA
SMA70	10	250	8	1.6	24	SMT
A70-1	10	250	8	1.8	28	TO-8
CA231	10	250	26	1.7	22	Connectorized-SMA
A231	10	250	26	1.7	22	TO-8
A70	10	250	8	1.6	24	TO-8
SMA83-1	10	250	35.5	2.5	9	SMT
SMA231	10	250	26	1.7	22	SMT
CA70-2	10	250	8	2.2	38	Connectorized-SMA
A70-2	10	250	8	2.2	38	TO-8
A83-1	10	250	35.5	2.5	9	TO-8
A74-1	5	250	31	4.5	21	TO-8
SMA70-3	15	300	8	2.8	40	SMTO-8
SMA87-2	10	300	16	2.9	24	SMT
A87-2	10	300	16	2.9	24	TO-8
SMA70-2	10	300	8	2.2	38	SMTO-8
CA78	5	300	14	3.5	35	Connectorized-SMA
A78	5	300	14	3.5	35	TO-8
SMA78	5	300	14	3.5	35	SMT
PAW1027	35	350	38.5	3.7	43	SOT115J
CA87-1	10	400	16	3.4	31	Connectorized-SMA
SMA411	10	400	15.8	3	24	SMT
SMA87-1	10	400	16	3.4	31	SMT
A87-1	10	400	16	3.4	31	TO-8
A411	10	400	15.8	3	24	TO-8
MAAM-008199-000A51	10	400	15	2.7	10	TO-8
EA1	5	400	14	4.3	13	TO-5
CA81-2	20	500	24.5	3	28	Connectorized-SMA
SMA81-2	20	500	24.5	3	28	SMT
A80	20	500	29	2.3	27	TO-8
A81-2	20	500	24.5	3	28	TO-8
A81-3	20	500	17	4	20	TO-8

Detailed specifications can be found quickly on our website at macom.com by typing the part number into the search box.
All specifications are subject to change.

Low Noise Hybrid Amplifiers (continued)

Part Number	Min Freq (MHz)	Max Freq (MHz)	Gain (dB)	Noise Figure (mA)	OIP3 (dBm)	Package
CA511	10	500	17	3.4	33	Connectorized-SMA
CA531	10	500	31.7	2	14	Connectorized-SMA
CA180	10	500	16.5	3.4	33	Connectorized-SMA
SMA75-3	10	500	20.5	1.7	16	SMT
A75-3	10	500	20.5	1.7	16	TO-8
A531	10	500	31.7	2	14	TO-8
A180	10	500	16.5	3.4	33	TO-8
A511	10	500	17	3.4	33	TO-8
SMA180	10	500	16.5	3.4	33	SMT
MAAM-007272-SMA514	5	500	28	4	32	SMTO-8
CA180	10	500	16.5	3.4	33	Connectorized-SMA
MAAM-007272-0CA515	5	500	27.5	3.5	33	Connectorized-SMA
CA74	5	500	30	3	20	Connectorized-SMA
AMC-147-SMA	5	500	17	3.4	33	Connectorized-SMA
AMC-143-SMA	5	500	15.8	2.5	20	Connectorized-SMA
AM-131-PIN	5	500	11.5	4	34	TO-8
AMC-123-SMA	5	500	10	5.5	30	Connectorized-SMA
MAAM-007272-SMA515	5	500	27.5	3.5	33	SMTO-8
A515	5	500	27.5	3.5	33	TO-8
CA75	5	500	21	2.1	21	Connectorized-SMA
CA76	5	500	28	3	28	Connectorized-SMA
A76	5	500	28	3	28	TO-8
SMA59	5	500	11.5	4.3	36	SMT
SMA75	5	500	21	2.1	21	SMT
SMA74	5	500	30	3	20	SMT
SMA58	5	500	11.5	4	34	SMT
EA53-2	5	500	19	3.6	24	TO-5
A74	5	500	30	3	20	TO-8
SMA73	5	500	32	3.5	15	SMT
A58	5	500	11.5	4	34	TO-8
SMA1	5	500	16	2.4	11	SMT
A1	5	500	16	2.4	11	TO-8
A73	5	500	32	3.5	15	TO-8
A75	5	500	21	2.1	21	TO-8
SMA76	5	500	28	3	28	SMT
SMA76-1	5	500	27.5	3	26	SMT
A59	5	500	11.5	4.3	36	TO-8
A76-1	5	500	27.5	3	26	TO-8
A514	5	500	28	4	32	TO-8
MAAM-007272-0CA514	5	500	28	4	32	Connectorized-SMA
SMA80	10	550	29	2.3	27	SMTO-8
SMA67-1	10	600	15	3.7	30	SMT
CA67-1	10	600	15	3.7	30	Connectorized-SMA
A67-1	10	600	15	3.7	30	TO-8

Detailed specifications can be found quickly on our website at macom.com by typing the part number into the search box.
All specifications are subject to change.

Low Noise Hybrid Amplifiers (continued)

Part Number	Min Freq (MHz)	Max Freq (MHz)	Gain (dB)	Noise Figure (mA)	OIP3 (dBm)	Package
A611	5	700	15	3.2	24	TO-8
SMA611	5	700	15	3.2	24	SMT
A67	10	800	14	4	30	TO-8
CA66-3	10	1000	26	3	13	Connectorized-SMA
SMA66-3	10	1000	26	3	13	SMT
SMA1031	10	1000	28.5	2.7	22	SMT
A12	10	1000	16	2.8	22	TO-8
A66-3	10	1000	26	3	13	TO-8
A1031	10	1000	28.5	2.7	22	TO-8
A18-1	10	1000	14.7	3.8	30	TO-8
CA18-1	10	1000	14.7	3.8	30	Connectorized-SMA
SMA18-1	10	1000	14.7	3.8	30	SM
AMC-176-SMA	5	1000	13.2	4	27	Connectorized-SMA
A11	5	1000	14.7	3.1	10	TO-8
SMA11-2	5	1000	16	2.5	10	SMT
A63	5	1000	16	3	15	TO-8
AMC-182-SMA	5	1000	28.2	3.5	20	Connectorized-SMA
SMA63	5	1000	16	3	15	SMT
CA1212	100	1200	14	1.8	29	Connectorized-SMA
A1212	100	1200	14	1.8	29	TO-8
SMA1212	100	1200	14	1.8	29	SMT
MAAM-008198-SMA162	10	1200	13	3.5	18	SMTO-8
SMA1211	10	1200	14	2.8	20	SMT
CA12	10	1200	14	2.8	20	Connectorized-SMA
A1211	10	1200	14	2.8	20	TO-8
MAAM-008198-0CA162	10	1200	13	3.5	18	Connectorized-SMA
CA28-2	10	1500	14	3.5	24	Connectorized-SMA
A28-2	10	1500	14	3.5	24	TO-8
SMA28-2	10	1500	14	3.5	24	SMT
A25-1	2	1500	13.5	3	22	TO-8
PA38	200	2000	10	4	34	TO-8
CPA38	200	2000	10	4	34	Connectorized-SMA
SMPA38	200	2000	10	4	34	SMT
CA32	100	2000	13	2.1	32	Connectorized-SMA
SMA32	100	2000	13	2.1	32	SMT
SMA32-1	100	2000	11.5	2.5	25	SMT
A32-1	100	2000	11.5	2.5	25	TO-8
A32	100	2000	13	2.1	32	TO-8
CA32-1	100	2000	11.5	2.5	25	Connectorized-SMA
A31-1	10	2000	11.5	3.5	9	TO-8
MAAM-007501-0A2002	20	2700	11.5	2.5	40	TO-8
MAAM-007501-CA2002	20	2700	11.5	2.5	40	Connectorized-SMA
MAAM-007501-SA2002	20	2700	11.5	2.5	40	SMTO-8
SMA45	1000	4000	17.5	4	29	SMT

Detailed specifications can be found quickly on our website at macom.com by typing the part number into the search box.
All specifications are subject to change.

Low Noise Hybrid Amplifiers (continued)

Part Number	Min Freq (MHz)	Max Freq (MHz)	Gain (dB)	Noise Figure (mA)	OIP3 (dBm)	Package
CA45	1000	4000	17.5	4	29	Connectorized-SMA
A45-1	1000	4000	17.5	4	26	TO-8
SMA4012	1000	4000	18	3.5	26	SMT
A4012	1000	4000	18	3.5	26	TO-8
A4011	1000	4000	15.5	2	29	TO-8
SMA45-1	1000	4000	17.5	4	26	SMT
A45	1000	4000	17.5	4	29	TO-8
SMA4011	1000	4000	15.5	2	29	SMT
A61	2000	6000	7.5	3.2	25	TO-8
A6011	2000	6000	14.8	1.5	30	TO-8
SMA61	C2000	6000	7.5	3.2	25	SMT
CA6011	2000	6000	14.8	1.5	30	Connectorized-SMA
SMA6011	1500	6000	14.8	1.5	30	SMTO-8

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HYBRID MIXERS

MACOM

Mixers					
Part Number	Min Freq RF/RO (MHz)	Max Freq RF/RO (MHz)	Min Freq IF (MHz)	Max Freq IF (MHz)	Package
M6D-50	0.05	200	0	200	Relay Header
MAC-50-PIN	0.2	200	0	200	TO-5
MDS-222-PIN	0.2	200	0.2	200	SF-1
SM6D	0.05	200	0	200	SMT
M6E-50	5	500	0	500	Relay Header
M9BC	0.5	500	0	500	Relay Header
MAC-51-PIN	5	500	0	500	TO-5
MD-161-PIN	1	500	0	500	FP-2
MDS-223-PIN	10	500	10	500	SF-1
SM6V	0.4	500	0	500	SMT
M1H	180	620	0	200	SMA
M6EH	5	750	0	500	Relay Header
SM6EH	5	750	0	500	SMT
M2E	10	1000	0	600	TO-8
M2EC	10	1000	0	600	SMA
SM2E	10	1000	0	600	SMT
M2AC	10	1500	0	800	SMA
M4A	10	1500	0	1000	Flatpack-SMT
M9H	10	1500	0	600	TO-8
M9HC	10	1500	0	600	SMA
MD-148-PIN	10	1500	10	1500	FP-2
MD-149-PIN	10	1500	10	1500	FP-2
MD-149-PIN	102	1500	102	1500	FPO2
MD-160-PIN	1	1500	1	1000	RH-3
MDS-148-PIN	10	1500	10	1500	SF-1
MDS-149-PIN	10	1500	10	1500	SF-1
MDS-158-PIN	5	1500	—	—	SF-1
SM4A	10	1500	0	1000	SMT
SM4B	10	1500	0	1000	SMT
M2B	10	1600	0	800	TO-8
M2BC	10	1600	0	800	SMA
M2TC	10	2400	1	1000	SMA
SM4G	800	2400	0	1500	SMT
MD-123-PIN	10	3000	10	3000	FP-2
M4TH	1	3400	1	2000	Flatpack-SMT
M8T	1	3400	1	2000	TO-8
M8TC	1	3400	1	2000	SMA
M8TH	1	3400	1	2000	TO-8
M8THC	1	3400	1	2000	SMA
SM4T	1	3400	1	2000	SMT
SM4T17	1	3400	1	2000	SMT
SM4TH	1	3400	1	2000	SMT
M2G	800	3500	0	1500	TO-8
M2GC	800	3500	0	1500	SMA
MD-169-PIN	1	3500	1	3500	FP-2
MD-189-PIN	1	3500	1	3500	FP-2

Detailed specifications can be found quickly on our website at macom.com by typing the part number into the search box.
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Mixers (continued)

Part Number	Min Freq RF/RO (MHz)	Max Freq RF/RO (MHz)	Min Freq IF (MHz)	Max Freq IF (MHz)	Package
MDC-169-SMA	1	3500	1	3500	C-7
MDS-169-PIN	1	3500	5	1500	SF-1
MDS-189-PIN	1	3500	1	3500	SF-1
MD-179-PIN	1	4000	5	1500	FP-2
MDC-179-SMA	1	4000	5	1500	C-7
M8H-3	3700	4200	0	2000	TO-8
SM5T	50	5000	50	3000	SMT
SM5T17	50	5000	50	3000	SMT
SM5TH	50	5000	50	3000	SMT
M63C	2500	5500	0	1500	SMA
MZ6310C	250	5500	0	1500	SMA
M8H-7	2400	6000	0	2000	TO-8
M8HC-7	2400	6000	0	2000	SMA
MDC-162-SMA	1000	7000	10	2000	C-2
MY63	2500	7000	0	15000	Versapac
MY63C	2500	7000	0	15000	SMA
M63H	2500	7500	0	1500	Minpac
M63HC	2500	7500	0	1500	SMA
MY63H	2500	7500	0	1500	Versapac
MY63HC	2500	7500	0	1500	SMA
M76H	4500	8500	0	2000	Minpac
M76HC	4500	8500	0	2000	SMA
MY76H	4500	8500	0	2000	Versapac
MY76HC	4500	8500	0	2000	SMA
M76	4500	9500	0	2000	Minpac
M76C	4500	9500	0	2000	SMA
MY76	4500	9500	0	2000	Versapac
MY76C	4500	9500	0	2000	SMA
MY84	1800	10000	0	1000	Versapac
MY84C	1800	10000	0	1000	SMA
M77C	8000	12500	0	2500	SMA
MY77	8000	12500	0	2500	Versapac
MY77C	8000	12500	0	2500	SMA
M14A	6000	14000	0	2000	SMA
M67C	9000	15000	0	2500	SMA
M50A	2000	18000	2000	18000	Minpac
M50AC	2000	18000	2000	18000	SMA
M74	7000	18000	0	3000	Minpac
M74C	7000	18000	0	3000	SMA
M79C	5000	18000	0	3000	SMA
M79H	5000	18000	0	3000	Minpac
M79HC	5000	18000	0	3000	SMA
M80C	4000	18000	0	3000	SMA
M83	1000	18000	30	5000	Minpac
M83C	1000	18000	30	5000	SMA
M85	2000	18000	0	1000	Minpac

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Mixers (continued)

Part Number	Min Freq RF/RO (MHz)	Max Freq RF/RO (MHz)	Min Freq IF (MHz)	Max Freq IF (MHz)	Package
M85C	2000	18000	0	1000	SMA
M86C	3500	18000	0	3000	SMA
M88C	2000	18000	1000	8000	SMA
M88H	2000	18000	2000	8000	Minpac
M79C	5000	18000	0	3000	SMA
M79H	5000	18000	0	3000	Minpac
M79HC	5000	18000	0	3000	SMA
M80C	4000	18000	0	3000	SMA
M83	1000	18000	30	5000	Minpac
M83C	1000	18000	30	5000	SMA
M85	2000	18000	0	1000	Minpac
M85C	2000	18000	0	1000	SMA
M86C	3500	18000	0	3000	SMA
M88C	2000	18000	1000	8000	SMA
M88H	2000	18000	2000	8000	Minpac
M88HC	2000	18000	2000	8000	SMA
M89C	1000	18000	1000	8000	SMA
M93C	2000	18000	30	4000	SMA
MY82	2000	18000	30	5000	Versapac
MY82C	2000	18000	30	5000	SMA
MY83H	2	18000	30	5000	Versapac
MY83HC	2	18000	30	5000	SMA
MY85	2000	18000	0	1000	Versapac
MY85C	2000	18000	0	1000	SMA
MY88	2000	18000	1000	8000	Versapac
MY88C	2000	18000	1000	8000	SMA
MY88HC	1000	18000	1000	8000	SMA
MY89	2000	18000	2000	8000	Versapac
MY89C	2000	18000	2000	8000	SMA
MY93	2000	18000	30	4000	Versapac
MY93C	2000	18000	30	4000	SMA
MZ7407	6000	18000	0	3000	Versapac
MZ7407C	6000	18000	0	3000	SMA
MZ7410	6000	18000	0	3000	Versapac
MZ7410C	6000	18000	0	3000	SMA
MZ7420	6000	18000	0	3000	Versapac
MZ7420C	6000	18000	0	3000	SMA
MZ8810C	2000	18000	1000	8000	SMA
MZ8813	2000	18000	1000	8000	Versapac
MZ9310	2000	18000	30	5000	Versapac
MZ9310C	2000	18000	30	5000	SMA
MZ9313	2000	18000	30	5000	Versapac
MZ9313C	2000	18000	30	5000	SMA
M87C	500	19000	30	5000	SMA
MY87	500	19000	30	5000	Versapac
MY87C	500	19000	30	5000	SMA

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Mixers (continued)

Part Number	Min Freq RF/RO (MHz)	Max Freq RF/RO (MHz)	Min Freq IF (MHz)	Max Freq IF (MHz)	Package
M51C	2000	24000	1000	15000	SMA
M52C	2000	24000	100	5000	SMA
MY51	2000	24000	1000	15000	Versapac
MY51C	2000	24000	1000	15000	SMA
MY52	2000	24000	100	5000	Versapac
MY52C	2000	24000	100	5000	SMA
M50C	2000	26000	1000	15000	SMA
M53C	2000	26000	100	6000	SMA
MY50	2000	26000	1000	15000	Versapac
MY50A	2000	26000	1000	12000	Versapac
MY50AC	2000	26000	1000	12000	SMA
MY50C	2000	26000	1000	15000	SMA
MZ5010	2000	26000	1	15000	Versapac
MZ5010C	2000	26000	1	15000	SMA

Detailed specifications can be found quickly on our website at macom.com by typing the part number into the search box.
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Power Dividers/Combiners

Part Number	Min Freq (MHz)	Max Freq (MHz)	Channels (#)	Amplitude Balance (dB)	Phase Balance (°)	Isolation (dB)	Max Input Power (dBm)	Package
M3H-50-PIN	1	100	3	0.2	1	30	30	TO-5
DS-310-PIN	0	300	4	0.2	4	25	30	FP-5
M3V-50-PIN	50	300	3	0.2	2	25	30	TO-5
DS-113-PIN	0	400	2	0.2	1	25	30	FP-2
DSS-113-PIN	0	400	2	0.2	1	25	30	SF-1
DS-318-PIN	5	500	2	0.2	1	18	30	RH-1
DS-109-PIN	10	500	2	0.2	1	25	30	FP-2
DSS-333-PIN	10	500	2	0.2	2	25	30	SF-1
DS-319-PIN	10	500	2	0.2	1	25	30	TO-8
DS-112-PIN	10	500	3	0.2	2	25	30	TO-5
DS-328-PIN	3	700	3	0.3	3	20	30	TO-8
DSS-327-PIN	5	1000	2	0.2	3	20	30	FP-2
DSS-333-PIN	5	1000	2	0.2	3	20	30	FP-2
DS-323-PIN	25	1000	3	0.4	4	24	30	FP-3
DS-324-PIN	25	1000	4	0.3	6	20	30	FP-5
DS-331-PIN	750	1500	2	0.2	6	10	30	TO-8
DS-313-PIN	10	2000	2	0.3	4	23	24	FP-2
DSS-313-PIN	10	2000	2	0.3	4	23	24	SF-1
MAPD-011062	2 GHz	20 GHz	2	0.2	2	15	50	3 mm PQFN-16

Detailed specifications can be found quickly on our website at macom.com by typing the part number into the search box.
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Varactor Tuning Diodes

Part Number	Gamma	Total Capacitance (pF)	Quality Factor @ 50 MHz, Min	Breakdown Voltage (V)	Package
MA46603-134	0.5	0.6	6500	30	ODS-134 Die
MA46600-134	0.5	0.3	8000	30	ODS-134 Die
MGV050-18	0.5	0.3	4000	22	C01A
MGV050-18-H20	0.5	0.48	4000	22	H20
MGV050-20	0.5	0.55	4000	22	C01A
MGV050-20-H20	0.5	0.73	4000	22	H20
MGV050-22-H20	0.5	1.18	3000	22	H20
MGV050-24-H20	0.5	1.68	3000	22	H20
MGV050-26	0.5	2	3000	22	C01A
MGV050-26-H20	0.5	2.18	3000	22	H20
MA46H070-1056	0.75	0.6	4500	20	ODS-1056
MA46H072-1056	0.75	3	3000	20	ODS-105
MA46H073-1056	0.75	5	2200	20	ODS-1056
MA46H071-1056	0.75	1	4500	20	ODS-1056
MA46416-134	1.5	1.8	2500	18	ODS-134 Die
MA46418-30	1.5	2.7	1800	18	ODS-30

Multiplier Step Recovery Diodes

Part Number	Total Capacitance Min (pF)	Total Capacitance Max (pF)	Reverse Voltage (V)	Lifetime (Typ vs Mln) (ns)	Tt (Typ vs Max) (ps)	Package
MMDB30-B11	0.15	0.25	14	4	30	B11
MMDB35-B11	0.13	0.20	16	4	35	B11
MMDB45-B11	0.11	0.20	25	8	40	B11
MSD700	0.2	0.4	15	8	60	Die/Various
MSD710	0.2	0.4	20	11	70	Die/Various
MSD720	0.2	0.4	30	17	100	Die/Various
MSD701	0.4	0.6	15	8	60	Die/Various
MSD711	0.4	0.6	20	11	70	Die/Various
MSD731	0.4	0.6	40	21	150	Die/Various
MSD722	0.6	0.8	30	17	100	Die/Various
MSD703	0.8	1	15	8	60	Die/Various
MSD723	0.8	1	30	17	100	Die/Various
MSD733	0.8	1	40	21	150	Die/Various
MSD724	1	1.4	30	17	100	Die/Various
MSD726	2	3	30	17	100	Die/Various
MSD736	2.0	3	40	21	150	Die/Various
MMD0151-A15	—	0.8	15	—	100	A15
MMD0803-A15	—	6.15	70	—	400	A15
MMD0815-A15	—	4.15	50	—	320	A15
MMD0825-A15	—	2.15	45	—	160	A15
MMD0840-A15	—	0.75	15	—	—	A15
MMD810-C12	1.50	2.50	50	40	250	Die
MMD810-H20	1.68	2.68	50	40	250	H20
MMD810-T86	1.68	2.68	50	40	250	T86
MMD810-T89	1.75	2.75	50	40	250	T89
MMD820-C12	1.00	1.70	40	30	100	Die
MMD820-H20	1.18	1.88	40	30	100	H20

Detailed specifications can be found quickly on our website at macom.com by typing the part number into the search box.
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Multiplier Step Recovery Diodes (continued)

Part Number	Total Capacitance Min (pF)	Total Capacitance Max (pF)	Reverse Voltage (V)	Lifetime (Typ vs Mln) (ns)	Tt (Typ vs Max) (ps)	Package
MMD820-T86	1.18	1.88	40	30	100	T86
MMD830-H20	0.68	1.18	25	15	80	H20
MMD830-T86	0.68	1.18	25	10	80	T86
MMD832-C11	0.40	0.80	20	10	80	Die
MMD832-H20	0.58	0.98	20	10	60	H20
MMD832-T86	0.58	0.98	20	10	60	T86
MMD835-C11	0.30	0.70	15	10	70	Die
MMD835-H20	0.42	0.92	15	10	70	H20
MMD835-T86	0.48	0.98	15	10	70	T86
MMD837-C11	0.20	0.40	20	5	70	Die
MMD837-H27	0.32	0.52	20	5	70	H27
MMD837-T86	0.38	0.58	20	5	70	T86
MMD840-C11	0.20	0.40	15	7	70	Die
MMD840-H27	0.32	0.52	15	7	70	H27
MMD840-T86	0.38	0.58	15	7	70	T86

PIN Switch and Attenuator Diodes

Part Number	Min Freq (MHz)	Max Freq (MHz)	CW Power Dissipation (W)	Total Capacitance (pF)	Resistance (Ω)	TI (ns)	Breakdown Voltage Min (V)	Package
MA4P606-36	1	500	20	0.99	0.7	4000	1000	ODS-36
MA4P504-255	1	500	7.5	0.4	0.6	1000	500	ODS-255
MA4P505-255	1	500	10.7	0.55	0.5	2000	500	ODS-255
MA4P606-30	1	500	15	0.8	0.7	4000	1000	ODS-30
MA4P604-255	1	500	15	0.6	1	3000	1000	ODS-255
MA4P607-296	1	500	25	2.35	0.4	5000	1000	ODS-296
MA4P504-186	1	500	7.5	0.4	0.6	1000	500	ODS-186
MA4P504-30	1	500	7.5	0.4	0.6	1000	500	ODS-30
MA4P506-30	1	500	13.6	0.95	0.3	3000	500	ODS-30
MA4P506-31	1	500	13.6	0.95	0.3	3000	500	ODS-31
MADP-000015-000030	1	500	15	0.55	0.4	2000	500	ODS-30
1N5719	1	1000	0.3	0.35	1.5	3000	100	ODS-54
MA47266-146	1	1000	0.5	1.5	0.6	4000	200	ODS-146
MA4P606-4	1	1000	1	0.7	0.7	4000	1000	ODS-4
MA47047-54	1	1000	0.3	0.3	1.5	1000	200	ODS-54
MA4P606-131	1	1000	15	0.6	0.7	4000	1000	ODS-131 Die
MADP-000488-13740W	100	1500	15	0.16	1.6	4000	900	ODS-1374 Die
MADP-000135-01340W	100	1500	50	0.15	1.2	440	200	ODS-134 Die
MADP-000165-01340W	100	2000	50	0.06	2.5	200	200	ODS-134 Die
MADP-042508-130600	50	2000	1.3	0.6	0.9	310	100	ODS-1306 Die
MADP-042505-130600	50	2000	1.3	0.6	0.8	210	80	ODS-1306 Die
MA4P404-30	5	2000	7.5	0.4	0.6	1000	250	ODS-30
MA4P604-30	1	2500	15	0.5	1	3000	1000	ODS-30
MADP-000506-014400	1	4000	10	0.7	0.3	100	500	ODS-144
MADP-042405-130600	50	4000	1.3	0.27	0.8	210	80	ODS-1306 Die
MA4P505-36	1	4000	15	0.55	0.5	2000	500	ODS-36
MA4P303-186	20	4000	0.3	0.35	1.5	200	200	ODS-186
MA4P203-30	30	4000	5	0.35	1.5	100	100	ODS-30

Detailed specifications can be found quickly on our website at macom.com by typing the part number into the search box.
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PIN Switch and Attenuator Diodes (continued)

Part Number	Min Freq (MHz)	Max Freq (MHz)	CW Power Dissipation (W)	Total Capacitance (pF)	Resistance (Ω)	TI (ns)	Breakdown Voltage Min (V)	Package
MA4P203-1056	30	4000	0.3	0.35	1.5	100	100	ODS-1056
MA4P303-120	20	4000	5	0.35	1.5	200	200	ODS-120
MA4P506-131	1	4000	13.6	0.7	0.3	3000	500	ODS-131 Die
MA4P202-120	50	4000	0.3	0.25	2.5	60	100	ODS-120
MADP-042308-130600	50	6000	1	0.14	1.3	280	100	ODS-1306 Die
MADP-042305-130600	50	6000	1	0.14	1.3	180	80	ODS-1306 Die
MA4P505-131	1	6000	10.7	0.35	0.5	2000	500	ODS-131 Die
MADP-017015-1314	1	6000	5	0.32	0.7	1300	115	ODS-1314 Die
MADP-017025-1314	1	6000	5	0.23	1	2300	1335	ODS-1314 Die
MADP-030015-13140P	1	6000	11.5	0.78	0.5	1600	115	ODS-1314 Die
MADP-030025-1314	1	6000	11.5	0.5	0.7	2800	135	ODS-1314 Die
MA4P504-144	1	8000	7.5	0.4	0.6	1000	500	ODS-144
MA4P604-131	1	8000	15	0.3	1	3000	1000	ODS-131 Die
MA47222	1	8000	3.8	0.4	1.6	160	150	ODS-144
MA47223	1	8000	7.5	0.4	0.6	1000	500	ODS-144
MA47418-134	5	10000	6	0.15	3	1000	200	ODS-134 Die
MA47416-132	DC	10000	5	0.15	6	2000	200	ODS-132 Die
MA4P504-132	1	10000	7.5	0.2	0.6	1000	500	ODS-132 Die
MA4P404-132	5	10000	7.5	0.2	0.7	600	250	ODS-132 Die
MADP-042908-130600	50	16000	0.8	0.06	3.1	230	100	ODS-1306 Die
MADP-042905-130600	50	16000	0.8	0.06	3.1	140	80	ODS-1306 Die
MADP-000402-12530G	50	18000	1	0.04	5	200	1000	ODS-1253 Die
MADP-000402-12530P	50	18000	1	0.04	4.5	200	70	ODS-1253 Die
MADP-064908-131000	50	18000	1	0.05	5	200	100	ODS-1310 Die
MA4PBL027	100	18000	0.2	0.03	4	150	90	Beam Lead Die
MA4P7493-134	50	18000	2.5	0.05	1.8	80	150	ODS-134 Die
MA4SPS402	50	18000	1	0.04	5	200	100	ODS-1253 Die
MA4P161-134	100	18000	2.3	0.1	1.5	150	100	ODS-134 Die
MA4P203-134	30	18000	5	0.15	1.5	100	100	ODS-134 Die
MA4P303-134	20	18000	5	0.15	1.5	200	200	ODS-134 Die
MA4SPS552	50	26000	1	0.06	1.7	2500	200	ODS-1270
MA4SPS502	1	26000	35	0.14	2.4	2800	275	ODS-1270
MA4SPS302	1	26000	0.8	0.4	1.3	460	100	SURMOUNT™ Die
MA4AGBLP912	100	40000	0.1	0.02	4	5	50	Beam Lead Die
MA4GP022	100	40000	0.3	0.15	1	20	50	ODS-277
MA4GP030	100	40000	0.3	0.06	2	25	100	ODS-277
MGPN1503-C01A	100	26000	—	0.03	3	10	205	C01A
MMP7010	200	14000	—	0.1	1	10	25	Die/Various
MMP7011	200	12000	—	0.15	0.8	10	25	Die/Various
MMP7020	1	18000	—	0.05	1.2	60	70	Die/Various
MMP7021	1	14000	—	0.1	1	60	70	Die/Various
MMP7022	1	10000	—	0.15	0.9	60	70	Die/Various
MMP7023	1	8000	—	0.2	0.7	60	70	Die/Various
MMP7024	1	6000	—	0.25	0.5	60	70	Die/Various
MMP7025	1	18000	—	0.03	1.9	100	100	Die/Various
MMP7071	0.1	100	—	2	1	8000	100	Die/Various

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PIN Switch and Attenuator Diodes (continued)

Part Number	Min Freq (MHz)	Max Freq (MHz)	CW Power Dissipation (W)	Total Capacitance (pF)	Resistance (Ω)	TI (ns)	Breakdown Voltage Min (V)	Package
MMP7078	0.1	100	—	1	0.5	2500	400	Die/Various
MMP7092	1	6000	—	0.2	0.6	1000	500	Die/Various
MMPN080045	2000	20000	—	—	—	—	200	C50
MMPN080150	2000	35000	—	—	—	—	200	C51
MMSPN050-C53	1000	40000	40	—	0.6	4000	200	C53
MMSPN050-C54	1000	40000	40	—	0.6	4000	200	C54
MNP0008	100	12000	1	0.08	2	150	100	C12p
MNP0008-T54P	100	12000	0.25	0.28	2	150	100	T54p
MNP0008-T55P	100	12000	0.25	0.21	2	150	100	T55p
MNP0008-T89P	100	12000	0.25	0.33	2	150	100	T89p
MNP0010	10	12000	1	0.08	2	300	150	C12p
MNP0010-T54P	10	12000	0.25	0.28	2	300	150	T54p
MNP0010-T55P	10	12000	0.25	0.21	2	300	150	T55p
MNP0010-T89P	10	12000	0.25	0.33	2	300	150	T89p
MNP0012	5	12000	1	0.08	3.5	350	300	C12p
MNP0012-T54P	5	12000	0.25	0.28	3.5	350	300	T54p
MNP0012-T55P	5	12000	0.25	0.21	3.5	350	300	T55p
MNP0012-T89P	5	12000	0.25	0.33	3.5	350	300	T89p
MNP0012A	5	8000	1	0.18	0.6	650	350	C22p
MNP0012A-T54P	5	8000	0.25	0.36	0.6	650	350	T54p
MNP0012A-T55P	5	8000	0.25	0.31	0.6	650	350	T55p
MNP0012A-T89P	5	8000	0.25	0.43	0.6	650	350	T89p
MNP0014	1	10000	1.5	0.12	1.3	750	500	C22p
MNP0014-T54P	1	10000	0.1	0.32	0.8	750	450	T54p
MNP0014-T55P	1	10000	0.1	0.25	0.8	750	450	T55p
MNP0014-T89P	1	10000	0.1	0.37	0.8	750	450	T89p
MNP0014A	1	10000	0.1	0.18	0.8	1400	500	C32p
MPN3001	—	2000	—	0.25	1	—	200	A15
MPN3002	—	2000	—	0.25	1	—	300	A15
MPN4165	—	2000	—	0.3	1.5	—	100	A15
MPN7302	500	12000	1	0.08	1.2	8	20	C11
MPN7302-H20	500	6000	1	0.26	1.2	8	20	H20
MPN7306	100	12000	1	0.08	1.2	50	70	C12
MPN7306-H20	100	6000	1	0.26	1.2	50	70	H20
MPN73120	5	6000	1	0.3	0.5	4	700	C32
MPN7312A	20	12000	1	0.08	1.2	150	120	C12
MPN7312A-H20	20	6000	1	0.26	1.2	150	120	H20
MPN7312B	20	12000	1	0.18	0.8	250	120	C12
MPN7312B-H20	20	6000	1	0.36	0.8	250	120	H20
MPN7315	10	12000	1	0.08	1.2	180	150	C12
MPN7315-H20	10	6000	1	0.26	1.2	180	150	H20
MPN7320	5	12000	1	0.02	3	120	150	C01
MPN7320-H20	5	6000	1	0.2	3	120	150	H20
MPN7345	5	6000	4	0.3	0.3	500	300	C40
MPN7360	1	6000	10	0.8	0.2	2500	600	C37
MPN7370	1	6000	10	2.0	0.2	5000	700	C39
MPN7380	1	6000	10	0.4	0.3	2500	800	C38

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PIN Switch and Attenuator Diodes (continued)

Part Number	Min Freq (MHz)	Max Freq (MHz)	CW Power Dissipation (W)	Total Capacitance (pF)	Resistance (Ω)	TI (ns)	Breakdown Voltage Min (V)	Package
MPN7420	1	6000	2.5	0.06	1	1000	400	C12
MPN7453A	1	6000	3	0.1	0.7	700	300	C22
MPN7453B	1	6000	3	0.15	0.6	2500	400	C22
MPN7453C	1	6000	3	0.18	0.4	1000	300	C22

PIN Limiter Diodes

Part Number	Incident Power, Max (W)	Thermal Resistance	Junction Capacitance (pF)	Resistance (Ω)	Lifetime (ns)	Vb (V)	Package
MLP7100	50	100	0.2	1.5	5	20 – 45	Die/Various
MLP7130	50	120	0.12	2	5	15 – 30	Die/Various
MLP7140	50	100	0.12	2	7	30 – 40	Die/Various
MADL-000011-13880G	80	175	0.18	2.1	10	—	ODS-13880G Die
MA4L011-31	80	175	0.36	2.1	10	—	ODS-31
MA4L011-186	80	175	0.33	2.1	10	—	ODS-186
MA4L011-134	80	175	0.18	2.1	10	—	ODS-134 Die
MA4L011-1056	80	175	0.38	2.1	10	—	ODS-1056
MA4L011-30	80	175	0.36	2.1	10	—	ODS-30
MA4L011-32	80	175	0.48	2.1	10	—	ODS-32
MADL-011021-14210G	90	175	0.2	2.1	10	—	ODS-1056
MADL-011009-01340W	90	175	0.23	1.5	10	—	ODS-134
MADL-000021-003000	90	175	0.38	21	10	—	ODS-30
MA4L022-120	90	175	0.32	2	10	—	ODS-120
MA4L022-1056	90	175	0.39	2	10	—	ODS-1056
MA4L022-30	90	175	0.37	2	10	—	ODS-30
MA4L022-186	90	175	0.34	2	10	—	ODS-186
MA4L021-134	90	175	0.2	2.1	10	—	ODS-134 Die
MA4L022-134	90	175	0.19	2	10	—	ODS-134 Die
MADL-04L401-0113W0	—	25	0.3	1.2	800	—	ODS-134 Die
MADL-000301-0113W0	—	30	0.2	1.5	200	—	ODS-134 Die
MADL-04L062-0113W0	—	150	0.15	2.5	10	—	ODS-134 Die
MA4L021-120	90	175	0.33	2.1	10	—	ODS-120
MA4L021-1056	90	175	0.4	2.1	10	—	ODS-1056
MA4L021-31	90	175	0.38	2.1	10	—	ODS-31
MA4L022-32	90	175	0.49	2	10	—	ODS-32
MLP7101	100	80	0.5	1.2	10	20 – 45	Die/Various
MLP7102	100	55	0.7	1	10	20 – 45	Die/Various
MLP7131	100	80	0.2	1.5	5	15 – 30	Die/Various
MLP7141	100	70	0.2	1.5	7	30 – 60	Die/Various
MADL-011010-01340W	125	150	0.24	1.5	15	—	ODS-134
MADL-000031-13880G	125	150	0.21	2.1	20	—	ODS-1388
MA4L032-186	125	150	0.35	2.5	15	—	ODS-186
MA4L031-31	125	150	0.39	2	20	—	ODS-31
MA4L031-186	125	150	0.36	2	20	—	ODS-186
MA4L031-134	125	150	0.21	2	20	—	ODS-134 Die
MA4L032-1056	125	150	0.4	2.5	15	—	ODS-1056
MA4L032-134	125	150	0.2	2.5	15	—	ODS-134 Die
MA4L031-1056	125	150	0.41	2	20	—	ODS-1056

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PIN Limiter Diodes (continued)

Part Number	Incident Power, Max (W)	Thermal Resistance	Junction Capacitance (pF)	Resistance (Ω)	Lifetime (ns)	Vb (V)	Package
MA4L032-31	125	150	0.38	2.5	15	—	ODS-31
MA4L032-32	125	150	0.5	2.5	15	—	ODS-32
MADL-000032-003000	125	150	0.21	2.1	20	—	ODS-3000
MADL-011011-01340W	200	150	0.17	2.3	10	—	ODS-134
MADL-000062-13880G	200	150	0.15	2.5	10	—	ODS-13880G Die
MADL-000062-105600	200	150	0.35	2.5	10	—	ODS-1056
MA4L062-134	200	150	0.15	2.5	10	—	ODS-134 Die
MLP7110	200	80	0.2	1.5	10	45 – 75	Die/Various
MADL-000101-13880G	250	30	0.15	2	90	—	ODS-13880G Die
MA4L101-134	250	30	0.15	2	90	—	ODS-134 Die
MA4L101-186	250	30	0.3	2	90	—	ODS-186
MA4L101-30	250	30	0.33	2	90	—	ODS-30
MLP7111	400	60	0.5	1.2	15	45 – 75	Die/Various
MADL-000301-01340W	500	30	0.2	1.5	200	—	ODS-134 Die
MA4L301-1056	500	30	0.4	1.5	200	—	ODS-1056
MA4L301-31	500	30	0.38	1.5	200	—	ODS-31
MADL-000301-13870G	500	30	0.2	1.5	200	—	ODS-1370
MADL-011052-14280W	500	36	0.19	2	222	—	ODS-134 Die
MLP7112	795	40	0.7	1	20	45 – 75	Die/Various
MA4L401-1056	1000	25	0.5	1.2	800	—	ODS-1056
MA4L401-31	1000	25	0.48	1.2	800	—	ODS-31
MA4L401-134	1000	25	0.3	1.2	800	—	ODS-134 Die
MA4L401-30	1000	25	0.48	1.2	800	—	ODS-30
MA4L401-120	1000	25	0.43	1.2	800	—	ODS-32
MADL-000401-13870G	1000	25	0.3	1.2	800	—	ODS-13870G Die
MLP7120	1000	40	0.2	1.5	50	120 – 180	Die/Various
MLP7121	2000	20	0.6	1	50	120 – 180	Die/Various
MLP7122	4000	15	0.8	0.5	100	120 – 180	Die/Various

Schottky Mixer and Detector Diodes

Part Number	Min Frequency (MHz)	Max Frequency (MHz)	Total Capacitance (pF)	Dynamic Resistance (Ω)	Vf (mV)	Vb (V)	Package
MA4E932A-186	DC	18	—	0.25	—	1	ODS-186
MA4E932B-186	DC	18	—	0.25	—	1	ODS-186
MA4E929B-119	DC	18	—	0.25	—	1	ODS-119
MA4E929A-119	DC	18	—	0.25	—	15	ODS-119
MADS-002811-00540T	DC	3000	1.2	—	—	70	ODS-55
1N5711	DC	3000	1.2	2	—	70	ODS-54
MA4E2812-54	DC	3000	1.2	—	—	20	ODS-57
MA4E2811	DC	3000	1.2	—	—	15	ODS-56
MA40261	DC	3000	—	0.32	—	70	ODS-186
MADS-005711-0054MT	DC	3000	1.2	2	—	20	ODS-54
MA40205-119	DC	10000		—	0.32	—	Various
MA40215-120	DC	16000	0.32	—	—	5	ODS-1200
MADS-011030-14280W	DC	16000	0.33	6.5	100	3.5	Die
MA4E2513L-1289	DC	26000	0.12	10	—	3	ODS-1289
MA4E2508H-1112	DC	26000	0.24	6	—	5	ODS-1112

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Schottky Mixer and Detector Diodes (continued)

Part Number	Min Frequency (MHz)	Max Frequency (MHz)	Total Capacitance (pF)	Dynamic Resistance (Ω)	Vf (mV)	Vb (V)	Package
MA4E2501L-1290	DC	26000	0.12	10	—	5	ODS-1290
MA4E2532M-1113	DC	26000	0.16	10	—	5	ODS-1113
MA4E2508M-1112	DC	26000	0.24	12	—	5	ODS-1112
MA4E2514L-1116	DC	26000	0.12	16	—	3	ODS-1116
MA4E2508L-1112	DC	26000	16	0.24	—	5	ODS-1112
MA4E2514M-1116	DC	26000	0.12	12	—	3	ODS-1116
MA4E2502H-1246	DC	26000	0.12	11	—	3	ODS-1246
MA4E2502M-1246	DC	26000	0.12	12	—	3	ODS-1246
MA4E2502L-1246	DC	26000	0.12	16	—	3	ODS-1246
MA4E2039	DC	60000	0.05	4	—	4.5	Beam Lead
MA4E2040	DC	60000	0.05	4	—	4.5	Beam Lead
MA4E2037	DC	60000	0.05	4	—	4.5	Beam Lead
MGR700	DC	1000	1.2	—	—	8	Die/Various
MGR701	DC	1000	1	—	—	8	Die/Various
MGR702	DC	1000	1.2	—	—	20	Die/Various
MGR703	DC	1000	1	—	—	20	Die/Various
MGR704	DC	1000	2	—	—	70	Die/Various
MGR705	DC	1000	1.2	—	—	70	Die/Various
MGS901	DC	60000	0.06	7	—	5	Beam Lead
MGS902	DC	60000	0.1	7	—	—	Beam Lead
MGS903	DC	60000	0.06	7	—	5	Beam Lead
MGS904	DC	60000	0.06	7	—	—	B85
MGS904A	DC	60000	0.08	5	—	—	B85
MGS905	DC	60000	0.06	7	—	5	B86
MGS906	DC	60000	0.04	14	—	10	B90
MGS907	DC	60000	0.04	14	—	—	B85
MGS907A	DC	60000	0.06	12	—	—	B85
MGS907B	DC	60000	0.08	10	—	—	B85
MGS908	DC	60000	0.04	14	—	10	B86
MGS909	DC	60000	0.1	21	—	15	B90
MGS910	DC	60000	0.1	21	—	—	B87
MGS911	DC	60000	0.1	21	—	15	B88
MGS912	DC	60000	0.03	28	—	20	B89
MSS20-046-C15	DC	18000	0.1	80	—	0.8	C15P
MSS20-046-H27	DC	18000	0.25	80	—	0.8	H27
MSS20-046-T86	DC	12000	0.31	80	—	0.8	T86p
MSS20-047-C15	DC	18000	0.1	80	—	0.8	C15P
MSS20-047-H27	DC	18000	0.25	80	—	0.8	H27
MSS20-047-T86	DC	12000	0.31	80	—	0.8	T86p
MSS20-050-C15	DC	12000	0.15	80	—	0.8	C15P
MSS20-050-H27	DC	12000	0.30	80	—	0.8	H27
MSS20-050-T86	DC	12000	0.36	80	—	0.8	T86p
MSS20-051-C15	DC	12000	0.15	80	—	0.8	C15P
MSS20-051-H27	DC	12000	0.30	80	—	0.8	H27
MSS20-051-T86	DC	12000	0.36	80	—	0.8	T86p
MSS20-054-0805	DC	12000	0.30	80	—	0.8	0805-2

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Schottky Mixer and Detector Diodes (continued)

Part Number	Min Frequency (MHz)	Max Frequency (MHz)	Total Capacitance (pF)	Dynamic Resistance (Ω)	Vf (mV)	Vb (V)	Package
MSS20-054-C15	DC	8000	0.2	80	—	0.8	C15P
MSS20-054-H27	DC	8000	0.35	80	—	0.8	H27
MSS20-054-T86	DC	8000	0.41	80	—	0.8	T86p
MSS20-055-C15	DC	8000	0.2	80	—	0.8	C15P
MSS20-055-H27	DC	8000	0.35	80	—	0.8	H27
MSS20-055-T86	DC	8000	0.41	80	—	0.8	T86p
MSS20-140-B10D	DC	40000	0.08	80	—	0.8	B10D
MSS20-141-B10D	DC	40000	0.08	80	—	0.8	B10D
MSS20-142-0402	DC	40000	0.1	80	—	0.8	0402
MSS20-142-B10D	DC	40000	0.1	80	—	0.8	B10D
MSS20-143-B10D	DC	40000	0.1	80	—	0.8	B10D
MSS20-145-B10D	DC	40000	0.12	80	—	0.8	B10D
MSS20-146-B10D	DC	40000	0.12	80	—	0.8	B10D
MSS25-047-C15c	DC	40000	0.1	65	—	3	C15c
MSS25-049-C15c	DC	40000	0.12	52	—	3	C15c
MSS25-141-B10D	DC	40000	0.08	65	—	3	B10D
MSS25-143-B10D	DC	40000	0.1	60	—	3	B10D
MSS25-145-B10D	DC	40000	0.12	52	—	3	B10D
MSS30 PCR46-B47	DC	18000	0.13	22	—	2	B47
MSS30 PCR53-B47	DC	18000	0.25	15	—	2	B47
MSS30-046-C15	DC	18000	0.12	18	—	2	C15
MSS30-046-P55	DC	18000	0.30	18	—	2	P55
MSS30-046-P86	DC	18000	0.33	18	—	2	P86
MSS30-050-C15	DC	18000	0.18	15	—	2	C15
MSS30-050-P55	DC	18000	0.35	15	—	2	P55
MSS30-050-P86	DC	18000	0.38	15	—	2	P86
MSS30-142-B10B	DC	18000	0.1	22	—	2	B10B
MSS30-142-H20	DC	18000	0.31	22	—	2	H20
MSS30-148-B10B	DC	18000	0.15	15	—	2	B10B
MSS30-148-H20	DC	18000	0.36	15	—	2	H20
MSS30-154-B10B	DC	18000	0.25	12	—	2	B10B
MSS30-154-H20	DC	18000	0.46	12	—	2	H20
MSS30-242-B20	DC	18000	0.1	22	—	2	B20
MSS30-242-H30	DC	18000	0.31	22	—	2	H30
MSS30-248-B20	DC	18000	0.15	15	—	2	B20
MSS30-248-H30	DC	18000	0.36	15	—	2	H30
MSS30-254-H30	DC	18000	0.46	12	—	2	H30
MSS30-346-B21	DC	18000	0.3	16	—	2	B21
MSS30-346-H20	DC	18000	0.50	16	—	2	H20
MSS30-442-B41	DC	18000	0.10	22	—	4	B41
MSS30-442-B42	DC	18000	0.1	22	—	2	B42
MSS30-442-H40	DC	18000	0.1	22	—	2	H40
MSS30-448-B41	DC	18000	0.15	15	—	2	B41
MSS30-448-B42	DC	18000	0.15	15	—	2	B42
MSS30-448-H40	DC	18000	0.35	15	—	2	H40
MSS30-454-B40	DC	18000	0.25	12	—	2	B40

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Schottky Mixer and Detector Diodes (continued)

Part Number	Min Frequency (MHz)	Max Frequency (MHz)	Total Capacitance (pF)	Dynamic Resistance (Ω)	Vf (mV)	Vb (V)	Package
MSS30-454-H40	DC	18000	0.46	12	—	2	H40
MSS30-B46-B45	DC	18000	0.125	25	—	2	B45
MSS30-B46-H40	DC	18000	0.35	25	—	2	H40
MSS30-B53-B45	DC	18000	0.25	15	—	2	B45
MSS30-B53-H40	DC	18000	0.46	15	—	2	H40
MSS30-CR46-H40	DC	18000	0.33	22	—	2	H40
MSS30-CR46-H40	DC	18000	0.33	22	—	2	H40
MSS30-CR53-B49	DC	18000	0.25	15	—	2	B49
MSS30-PCB46-B48	DC	18000	0.12	20	—	2	B48
MSS39-045-C15	DC	18000	0.1	—	—	5	C15p
MSS39-045-P86	DC	18000	0.27	—	—	5	P86p
MSS39-048-P55	DC	12000	0.30	—	—	5	P55p
MSS39-048-P86	DC	12000	0.32	—	—	5	P86p
MSS39-144-B10B	DC	40000	0.08	—	—	3.5	B10Bp
MSS39-144-H27	DC	18000	0.24	—	—	3.5	H27
MSS39-146-B10B	DC	26000	0.1	—	—	3.5	B10Bp
MSS39-146-H27	DC	18000	0.25	—	—	3.5	H27
MSS39-148-B10B	DC	18000	0.12	—	—	3.5	B10Bp
MSS39-148-H20	DC	12000	0.33	—	—	3.5	H20
MSS39-152-B10B	DC	12000	0.18	—	—	3.5	B10Bp
MSS39-152-H20	DC	18000	0.36	—	—	3.5	H20
MSS40-045-C15	DC	18000	0.12	15	—	3	C15
MSS40-045-P55	DC	18000	0.28	15	—	3	P55
MSS40-045-P86	DC	18000	0.30	15	—	3	P86
MSS40-048-C15	DC	18000	0.15	15	—	3	C15
MSS40-048-P86	DC	18000	0.33	15	—	3	P86
MSS40-141-B10B	DC	18000	0.1	22	—	3	B10B
MSS40-141-H20	DC	18000	0.30	18	—	3	H20
MSS40-148-B10B	DC	18000	0.15	17	—	3	B10B
MSS40-155-0402	DC	18000	0.38	14	—	3	0402
MSS40-155-H20	DC	18000	0.51	14	—	3	H20
MSS40-244-B20	DC	18000	0.12	22	—	3	B20
MSS40-248-B20	DC	18000	0.15	17	—	3	B20
MSS40-255-B20	DC	18000	0.3	15	—	3	B20
MSS40-448-B42	DC	18000	0.15	17	—	3	B42
MSS40-448-H40	DC	18000	0.36	15	—	3	H40
MSS40-455-B40	DC	18000	0.3	17	—	3	B40
MSS40-455-H40	DC	18000	0.32	14	—	3	H40
MSS40-B46-B45	DC	18000	0.13	25	—	3	B45
MSS40-B53-B45	DC	18000	0.25	15	—	3	B45
MSS40-CR46-B49	DC	18000	0.125	22	—	3	B49
MSS40-CR46-H40	DC	18000	0.35	15	—	3	H40
MSS40-CR53-H40	DC	18000	0.46	15	—	3	H40
MSS40-PCB46-B48	DC	18000	0.12	20	—	3	B48

Detailed specifications can be found quickly on our website at macom.com by typing the part number into the search box.
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Schottky Mixer and Detector Diodes (continued)

Part Number	Min Frequency (MHz)	Max Frequency (MHz)	Total Capacitance (pF)	Dynamic Resistance (Ω)	Vf (mV)	Vb (V)	Package
MSS40-PCR46-B47	DC	18000	0.13	22	—	3	B47
MSS40-PCR53-B47	DC	18000	0.25	15	—	3	B47
MSS50-046-P55	DC	18000	0.28	20	—	4	P55
MSS50-048-P86	DC	18000	0.33	15	—	4	P86
MSS50-062-C16	DC	18000	0.55	12	—	4	C16
MSS50-062-P55	DC	18000	0.75	12	—	4	P55
MSS50-062-P86	DC	18000	0.78	12	—	4	P86
MSS50-146-B10B	DC	18000	0.12	18	—	4	B10B
MSS50-146-H20	DC	18000	0.34	18	—	4	H20
MSS50-155-B10B	DC	18000	0.3	15	—	4	B10B
MSS50-155-H20	DC	18000	0.51	15	—	4	H20
MSS50-341-B21	DC	18000	0.26	16	—	4	B21
MSS50-448-B40	DC	18000	0.25	14	—	4	B40
MSS50-448-E45	DC	18000	0.36	10	—	4	E45
MSS50-448-H40	DC	18000	0.48	10	—	4	H40
MSS50-B46-B45	DC	18000	0.13	20	—	4	B45
MSS50-B46-H40	DC	18000	0.35	20	—	4	H40
MSS50-B53-B45	DC	18000	0.25	15	—	4	B45
MSS50-B53-E45	DC	18000	0.36	15	—	4	E45
MSS50-B53-H40	DC	18000	0.48	15	—	4	H40
MSS50-CR46-B49	DC	18000	0.125	22	—	4	B49
MSS50-CR46-H40	DC	18000	0.36	22	—	4	H40
MSS50-CR53-B49	DC	18000	0.25	15	—	4	B49
MSS50-CR53-H40	DC	18000	0.46	15	—	4	H40
MSS50-PCB46-B48	DC	18000	0.12	20	—	4	B48
MSS50-PCR46-B47	DC	18000	0.13	22	—	4	B47
MSS50-PCR53-B48	DC	18000	0.25	15	—	4	B47
MZB600-32	DC	8000	0.2	3500	—	3	CS32
MZB604-B11	DC	8000	0.2	5000	—	4	B11
MZB604-11	DC	8000	0.2	5000	—	4	CS11
MZB604-32	DC	8000	0.2	5000	—	4	CS32
MNM200	DC	26000	0.14	20	0.4	3	Die/Various
MNM201	DC	26000	0.2	20	0.4	3	Die/Various
MNM202	DC	26000	0.12	20	0.4	3	Die/Various
MNM203	DC	26000	0.14	20	0.4	3	Die/Various
MNM204	DC	26000	0.15	20	0.425	4	Die/Various
MNM206	DC	26000	0.12	20	0.425	4	Die/Various
MNM207	DC	26000	0.14	20	0.425	4	Die/Various
MNM210	DC	26000	0.14	20	0.45	5	Die/Various
MNM212	DC	26000	0.21	20	0.475	5	Die/Various
MNM213	DC	26000	0.15	20	0.475	5	Die/Various

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Switches

Part Number	Min Freq (MHz)	Max Freq (MHz)	Insertion Loss (dB)	Isolation (dB)	Input IP3 (dBm)	Package
SP5T						
MASW-001150-1316	45	2500	0.3	65	40	Die
MA4SW110	50	26500	0.6	48	40	HMIC Die
MA4AGSW1A	50	50000	1.2	48	—	Die
MA4AGSW1	50	50000	0.2	43	—	Die
SPDT						
SW-313-PIN	50	3000	0.8	52	46	CR-2
SW-226-PIN	0	4000	1	48	46	CR-2
SW-228-PIN	0	4000	0.7	42	46	CR-2
MASW-010647	8000	10500	0.8	37	60	Die
MASW-011021	6000	14000	0.7	34	60	SURMOUNT™ Die
MASW-002102-13580	2	18000	1.8	55	40	Die
MASW-011108-DIE	6000	18000	0.6	44	—	Die
MASW-002103-1363	50	20000	0.8	38	40	SURMOUNT™ Die
MA4SW210B-1	2000	26000	1.2	48	40	Die
MASW-011052	2000	26000	0.8	50	43	Die
MA4SW210	50	26500	0.6	52	40	HMIC Die
MASW-002100-1191	50	26500	0.3	65	40	Die
MASW-011144-DIE	20000	40000	65	30	—	Die
MASW-011068• Reflective	20000	40000	0.7	28	55	Die
MASW-010646	26000	40000	0.6	39	60	Die
MASW-011036	26000	40000	0.7	40	60	Die
MA4AGSW2	50	50000	0.6	46	—	Die
MASW-011111	80000	100000	0.8	25	—	Die
SP3T						
MASW-011053	2000	18000	0.8	50	48	Die
MASW-003102-13590	2000	18000	0.8	50	40	Die
MASW-003103-1364	50	20000	0.8	40	40	SURMOUNT™ Die
MA4SW310B-1	2000	26000	1.2	47	40	Die
MA4SW310	50	26500	0.8	48	40	Die
MASW-003100-1192	50	26500	0.3	65	40	Die
MA4AGSW3	50	50000	0.6	48	—	Die
MASW-011029	75000	100000	1.3	33	—	Die
SP4T						
MA4AGSW4	50	50000	0.8	42	40	Die
MA4SW410B-1	2000	18000	0.8	48	40	Die
MA4SW410	50	26500	0.7	48	40	Die
MASW-004102-12760	2	18000	1.5	50	40	Die
MASW-004103-1365	50	20000	0.8	50	63	SURMOUNT™ Die
MASW-004100-1193	50	26500	0.3	65	40	Die
MASW-004240-13170	10	24000	2.5	50	—	Die
MASW-011087	27000	30000	0.85	50	55	Die
SP5T						
MA4SW510B-1	2000	18000	0.9	40	40	Die
MASW-005102-13600	2000	18000	0.9	40	40	Die
MA4SW510	50	26500	0.9	38	40	Die

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Switches (continued)						
Part Number	Min Freq (MHz)	Max Freq (MHz)	Insertion Loss (dB)	Isolation (dB)	Input IP3 (dBm)	Package
MASW-005100-1194	50	26500	0.9	38	40	Die
MASW-006102-13610	50	26500	0.3	65	40	Die
MA4AGSW5	50	50000	1.1	47	40	Die
MASW-010351	10	4000	1.4	57	50	4 mm PQFN-24
SP6T						
MA4SW610B-1	2000	18000	1.3	45	40	Die
MASW-006102-13610	50	26500	1.3	45	40	Die
SP8T						
MA4AGSW8-1	50	50000	1.5	37	40	Die

Phase Detectors

Part Number	SRD VBR Min (V)	SRD CJ Typ (pF)	SRD TL Typ (ns)	SRD TT Max (ps)	Cap CT Typ (pF)	SD CJ Typ (pF)	SD VF Typ	SD RD Typ (mV)	FMW Typ (GHz)	Package
MSPD1000-H50	15	1	35	95	20	0.4	270	7	0.5	H50
MSPD1012-H50	15	0.5	10	70	2.5	0.18	270	9	12	H50
MSPD2018-H50	15	0.35	5.0	55	0.6	0.1	430	16	22	H50

Low Noise Amplifiers

Part Number	Min Freq (MHz)	Max Freq (MHz)	Gain (dB)	Noise Figure (dB)	OIP3 (dBm)	Output P1dB (dBm)	Bias Voltage (V)	Bias Current (mA)	Package
MAAM-011229-CQ3	50	4000	19	1.3	38	19.5	5	80	3 mm QFN-12
MAAM-011252-CQ3	30	8000	19.5	1.7	32.4	18.1	5	65	3 mm QFN-12
MAAM37000-A1G	3500	7000	17	2.2	25	14	4	75	Ceramic Gull Wing-8
MAAM37000-A1	3500	7000	17	2.2	25	14	4	75	Ceramic-8
MAAM71200-H1	7500	12000	15.5	2.7	21	11	4	40	Leadless Ceramic

Amplifier Gain Block

Part Number	Description	Min Freq (MHz)	Max Freq (MHz)	Output P1dB (dBm)	PSAT (dBm)	Gain (dB)	OIP3 (dBm)	Package
MAAP-010168	10 W Power Amplifier	500	3000	39	41	24	—	Ceramic Flanged-10
MAAM26100-B1	Power Amplifier	2000	6000	27	30.5	19	39	CR-2
MAAM26100-P1	Power Amplifier	2000	6000	28	30.5	20	40	CR-15

Transformers/Baluns

Part Number	Description	Min Freq (MHz)	Max Freq (MHz)	Impedance Ratio	Insertion Loss (dB)	Impedance (Ω)	Package
MABA-011115	Transmission Line Balun	5	3000	1:1	0.8	50	SMT
MABA-011116	Transmission Line Balun	5	3000	1:2	1.7	50	SMT
MABA-011125	Balun	2 GHz	20 GHz	1:2	2	50	3 mm PQFN-16

Coupler

Part Number	Description	Min Freq (GHz)	Max Freq (GHz)	Coupling, Nom (dB)	Isolation (dB)	IL (dB)	Impedance (Ω)	Package
MACP-011088	Coupler, 16.5 dB	2	18	16.5	27	0.8	50	4 mm QFN-24

Detailed specifications can be found quickly on our website at macom.com by typing the part number into the search box.
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CONNECTORIZED COMB GENERATORS

MACOM

NLTL GaAs Comb Generators

Part Number	Power Min (dBm)	Power Max (dBm)	Output Harmonics 1	Output Harmonics 2	Output Harmonics 3	Package
MLPNC-7102-SMA800	21 @ 400 MHz	23 @ 600 MHz	-8 @ 4 GHz	-16 @ 12 GHz	-20 @ 20 GHz	SMA800
MLPNC-7103-SMA800	21 @ 800 MHz	23 @ 1300 MHz	-5 @ 6 GHz	-15 @ 18 GHz	-20 @ 30 GHz	SMA800
MLPNC-7100S1-SMA800	18 @ 75 MHz	24 @ 250 MHz	-15 @ 1 GHz	-18 @ 2 GHz	-24 @ 4 GHz	SMA800
MLPNC-7100-SMA850	20 @ 100 MHz	24 @ 400 MHz	-8 @ 4 GHz	-18 @ 12 GHz	-35 @ 20 GHz	SMA850
MLPNC-7102S1-SMA800	18 @ 300 MHz	24 @ 700 MHz	-10 @ 4 GHz	-15 @ 8 GHz	-22 @ 12 GHz	SMA800
MLPNC-7103S1-SMA800	18 @ 600 MHz	24 @ 1500 MHz	-10 @ 4 GHz	-8 @ 8 GHz	-20 @ 15 GHz	SMA800

Detailed specifications can be found quickly on our website at macom.com by typing the part number into the search box.
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MNS Chip Capacitors

Part Number	Capacitance (pf)	Standoff Voltage (V)	Chip Style	Package
MA4M3010	10	200	350	Die
MA4M2020	20	200	132	Die
MA4M3030	30	200	352	Die
MA4M1050	50	100	132	Die
MA4M3050	50	200	354	Die
MA4M1100	100	100	199	Die
MA4M3100	100	50	358	Die
MA4M3150	150	50	359	Die

High Q MNOS Series Chip Capacitors: 9000 Series VB >50 V & 9100 Series VB >100 V

Part Number	Capacitance (pf)	Working Voltage (V)	Chip Size + .002"	Package
902R0 thru 9010R	2 to 10	50	0.010" x 0.010" x 0.005"	Die
9011R thru 9029R	11 to 29	50	0.015" x 0.015" x 0.005"	Die
9030R thru 9049R	30 to 49	50	0.020" x 0.020" x 0.006"	Die
9050R thru 9099R	50 to 99	50	0.030" x 0.030" x 0.006"	Die
0100 thru 90199R	100 to 199	50	0.040" x 0.040" x 0.008"	Die
90200 thru 90399R	200 to 399	50	0.050" x 0.050" x 0.008"	Die
90400 thru 90600R	400 to 600	50	0.070" x 0.070" x 0.008"	Die
910R1 thru 911R9	0.1 to 1.9	100	0.010" x 0.010" x 0.005"	Die
912R0 thru 919R9	2 to 9.9	100	0.015" x 0.015" x 0.005"	Die
9110R thru 9129R	10 to 29	100	0.020" x 0.020" x 0.006"	Die
9130R thru 9149R	30 to 49	100	0.030" x 0.030" x 0.006"	Die
9150R thru 9199R	50 to 99	100	0.040" x 0.040" x 0.008"	Die
91100 thru 91199	100 to 199	100	0.050" x 0.050" x 0.008"	Die
91200 thru 91399	200 to 399	100	0.070" x 0.070" x 0.008"	Die

Beam Lead Capacitors: 9000 Series VB >50 V

Part Number	Capacitance Range (pf)	Package
90100R0M	100 + 20%	14-4
9010R0M	10 + 20%	14-3
9015R0M	15 + 20%	14-3
901R0 thru 901R5	1.0 to 1.5	14-1
901R0 thru 902R2	1.0 to 2.2	14-2
9022R0M	22 + 20%	14-3
902R2 thru 904R7	2.2 to 4.7	14-2
9033R0M	33 + 20%	14-3
9047R0M	47 + 20%	14-4
905R6M	5.6 + 20%	14-2
9068R0M	68 + 20%	14-4
906R8M	6.8 + 20%	14-2
9082R0M	82 + 20%	14-4
908R2M	8.2 + 20%	14-2
90R1 thru 90R9	0.1 to 0.9	14-1
90R5 thru 901R0	0.5 to 1.0	14-2

Detailed specifications can be found quickly on our website at macom.com by typing the part number into the search box.
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DC Floating /RF Bypass Mounting Capacitors: 9100 & 9000 Series

Part Number	Capacitance Range (pF)	Chip Size A	Chip Size B	Pad Size D	Pad Size E	Customer Specified Field D
SP49	5 – 50	0.014	0.034	0.011	0.031	0.005 – 0.020
SP84	7 – 70	0.02	0.04	0.016	0.03	0.005 – 0.020
SP51	8 – 80	0.015	0.045	0.013	0.043	0.005 – 0.020
SP14	9 – 90	0.02	0.04	0.016	0.036	0.005 – 0.020
SP34	9 – 90	0.024	0.034	0.02	0.03	0.005 – 0.020
SP6	10 – 100	0.014	0.055	0.012	0.053	0.005 – 0.020
SP89	12 – 120	0.02	0.06	0.014	0.055	0.005 – 0.020
SP80	13 – 130	0.016	0.065	0.014	0.063	0.005 – 0.020
SP12	14 – 140	0.02	0.055	0.018	0.053	0.005 – 0.020
SP87	15 – 150	0.013	0.12	0.009	16	0.005 – 0.020
SP81	17 – 170	0.015	0.09	0.013	0.088	0.005 – 0.020
SP22	24 – 240	0.025	0.08	0.021	0.075	0.005 – 0.020
SP88	25 – 250	0.021	0.121	0.015	0.115	0.005 – 0.020
SP48	29 – 290	0.035	0.065	0.031	0.061	0.005 – 0.020
SP64	75 – 750	0.055	0.102	0.051	0.098	0.005 – 0.020
SP120	90 – 900	0.055	0.12	0.05	0.115	0.005 – 0.020
SP7	100 – 1000	0.085	0.085	0.081	0.081	0.005 – 0.020
SP2	150 – 1500	0.11	0.11	0.1	0.1	0.005 – 0.020
SP68	175 – 1750	0.101	0.124	0.097	0.12	0.005 – 0.020
SP1	200 – 2000	0.11	0.14	0.1	0.13	0.005 – 0.020
SP5	200 – 1000	0.1	0.1	0.095	0.095	0.005 – 0.020
SP20	200 – 2000	0.12	0.14	0.11	0.13	0.005 – 0.020
SP29	200 – 2000	0.121	0.121	0.115	0.115	0.005 – 0.020
SP38	200 – 2000	0.094	0.152	0.091	0.148	0.005 – 0.020
SP39	200 – 2000	0.12	0.134	0.11	0.13	0.005 – 0.020
SP40	200 – 2000	0.107	0.134	0.103	0.13	0.005 – 0.020
SP77	300 – 3000	0.118	0.175	0.114	0.171	0.005 – 0.020
SP52	300 – 3000	0.13	0.17	0.124	0.164	0.005 – 0.020
SP104	350 – 3500	0.142	0.171	0.138	0.167	0.005 – 0.020
SP111	350 – 3500	0.143	0.18	0.138	0.167	0.005 – 0.020
SP37	350 – 3500	0.151	0.168	0.147	0.164	0.005 – 0.020
SP44	350 – 3500	0.14	0.17	0.135	0.165	0.005 – 0.02
SP55	360 – 3600	0.117	0.22	0.113	0.216	0.005 – 0.020

MNOS Series Capacitors

Part Number	Type	Capacitance Range Min (pF)	Range (pF)	Capacitance Dwv Min (V)	IR Min (Ω)	TCC Typ (ppm/+ °C)	Package
MBC50-0.2B14	Beam Lead	0.16	0.24	50	1000	55	B14
MBC50-1.0B14	Beam Lead	0.8	1.2	50	1000	55	B14
MBC50-1B12	Beam Lead	0.8	1.2	50	1000	55	B12
MBC50-1.5B14	Beam Lead	1.2	1.8	50	1000	55	B14
MBC50-2.0B14	Beam Lead	1.6	2.4	50	1000	55	B14
MBC50-2B12	Beam Lead	1.6	2.4	50	1000	55	B12
MBC50-3B12	Beam Lead	2.4	3.6	50	1000	55	B12
MBC50-4B12	Beam Lead	3.2	4.8	50	1000	55	B12
MBC50-6B12	Beam Lead	4.8	7.2	50	1000	55	B12
MBC50-8B12	Beam Lead	6.4	9.6	50	1000	55	B12
MBC50-10B12	Beam Lead	8	12	50	1000	55	B12
MBC50-15B12	Beam Lead	12	18	50	1000	55	B12

Detailed specifications can be found quickly on our website at macom.com by typing the part number into the search box.
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MNOS Series Capacitors (continued)

Part Number	Type	Capacitance Range Min (pF)	Range (pF)	Capacitance Dwv Min (V)	IR Min (Ω)	TCC Typ (ppm/+ °C)	Package
MBC50-20B12	Beam Lead	16	24	50	1000	55	B12
MBC50-33B13	Beam Lead	26.4	39.6	50	1000	55	B13
MBC50-47B13	Beam Lead	37.6	56.4	50	1000	55	B13
MBC50-68B13	Beam Lead	54.4	81.6	50	1000	55	B13
MBC50-82B13	Beam Lead	65.6	96	50	1000	55	B13
MBC50-100B13	Beam Lead	80	120	50	1000	55	B13
MC2DXXX010-010	Chips	0.1	5	50	1000	55	Die
MC2SXXX010-010	Chips	0.25	8	50	1000	55	Die
MC2SXXX011-011	Chips	1	12	50	1000	55	B12
MC2DXXX015-015	Chips	1.5	15	50	1000	55	Die
MC2RXXX010-015	Chips	2	20	50	1000	55	Die
MC2SXXX015-015	Chips	3	30	50	1000	55	Die
MC2SXXX016-016	Chips	3	35	50	1000	55	Die
MC2RXXX015-020	Chips	5	42	50	1000	55	Die
MC2DXXX020-020	Chips	5	50	50	1000	55	Die
MC2SXXX020-020	Chips	5	55	50	1000	55	Die
MC2SXXX022-022	Chips	5	60	50	1000	55	Die
MC2RXXX015-032	Chips	5	62	50	1000	55	Die
MC2SXXX025-025	Chips	10	100	50	1000	55	Die
MC2RXXX022-042	Chips	15	120	50	1000	55	Die
MC2SXXX030-030	Chips	10	120	50	1000	55	Die
MC2SXXX035-035	Chips	15	150	50	1000	55	Die
MC2SXXX040-040	Chips	20	200	50	1000	55	Die
MC2SXXX050-050	Chips	25	250	50	1000	55	Die
MC2SXXX055-055	Chips	25	300	50	1000	55	Die
MC2SXXX060-060	Chips	35	375	50	1000	55	Die
MC2SXXX070-070	Chips	50	550	50	1000	55	Die
MC2SXXX080-080	Chips	70	700	50	1000	55	Die
MC2RXXX097-107	Chips	100	999	50	1000	55	Die
MC2RXXX099-138	Chips	100	999	50	1000	55	Die
MC2SXXX100-100	Chips	100	999	50	1000	55	Die
MC2RXXXX127-145	Chips	200	1800	50	1000	55	Die
MC2RXXXX142-160	Chips	200	2200	50	1000	55	Die
MC2B0.8020-020	Binary Chip	1.2	1.8	50	1000	55	C20
MC2B002020-020	Binary Chip	3	4.5	50	1000	55	C20
MC2B004020-020	Binary Chip	6.4	9.6	50	1000	55	C20
MC2B008020-020	Binary Chip	12	18	50	1000	55	C20
MC2B016020-020	Binary Chip	24	36	50	1000	55	C20

Detailed specifications can be found quickly on our website at macom.com by typing the part number into the search box.
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MACOM's Commitment to Quality

Engineering, Manufacturing, and Quality Assurance Partnerships at All Levels

MACOM Technology Solutions 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

Element Evaluation, Environmental Screening, and Conformance Inspection

> MACOM provides standard high-reliability test programs for our semiconductor and thin film products. Element evaluations are performed in accordance with MIL-PRF-38534 Class H and Class K levels for passive components and semiconductor die. Environmental Screening and Conformance Inspection are performed in accordance with MIL-PRF-19500 requirements and/or per customer specified requirements.

> MMIC and Hybrid products use the standard process flows for class H and K devices

> Table 1 and Table 2 represent MACOM standard element evaluation, environmental screening, and conformance inspection testing. Certain process steps may be omitted or modified due to device performance restraints, packaging, or screening levels.

Please note that the tables are provided for reference. Actual CI and PI flow can be modified to meet mission requirements. MACOM reserves the right to modify these flows as appropriate.

All MACOM environmental test flows are based on the appropriate MIL-PRF for the product. Only our Lawrence facility has QLP product and those products are produced and sold to separate slash sheets.

MACOM's Lowell, Massachusetts facility is ISO9001:2008 registered. A copy of our ISO certificates is available upon request.

Table 1: MIL-PRF-38534 Element Evaluation for Passive Products

Step	Class K	Class H	Process	Conditions	Comments
1			Subgroup 1		
2	X	X	Die Electrical	Rs (Resistors), Vr, Cj (Capacitors)	100% Electrical, Remove Rejects
3			Subgroup 2		
4	X	X	Die Visual	MIL-STD-883, Meth 2032	100% Visual Inspection, Remove Rejects
5			Subgroup 3		
6	X	—	Temperature Cycling	MIL-STD-883, Meth 1010, Cond C	10 Cycles, t + 10 Minutes Min, Ta = -65∞ °C to +150∞ °C
7	X	—	Constant Acceleration	MIL-STD-883, Meth 2001, Cond D	20,000Gs, Y1 Direction
8	X	—	Aging (Capacitors Only)	MIL-STD-883, Meth 1015, Cond A	t = 240 hrs Min, Ta = +125∞ °C, Vr = V
9	X	X	Visual Inspection	MIL-STD-883, Meth 2017	
10	X	X	End-point Electricals	Rs (Resistors), Vr, Ir, Ct (Capacitors)	Read & Record
11			Subgroup 4		
12	X	X	Bond Strength	MIL-STD-883 Meth 2011 Bond Strength= 3G Min	.001" Au Wire or Equivalent 10 (0) Wires or 20 (1) Wires

Table 2: MIL-PRF-38534 Element Evaluation for Semiconductor Die

Step	Class K	Class H	Process	Conditions	Comments
1			Subgroup 1		
2	X	X	Die Electrical	Per Catalog Data Sheet/Device Specification	100% Electrical
3			Subgroup 2		
4	X	X	Die Visual	MIL-STD-883, Meth 2010	100% Visual Inspection
5			Subgroup 3		
6	X	X	Internal Visual	MIL-STD-883, Meth 2010 or MIL-STD-750, Meth 2072 or 2073	10 Cycles, t + 10 Minutes Min, Ta = -65∞ °C to +150∞ °C
7			Subgroup 4		
8	X		Temperature Cycling	MIL-STD-883, Meth 1010, Cond C	10 Cycles, t = 10 Minutes Min, Ta = -65 °C to +150 °C
9	X	X	Constant Acceleration	MIL-STD-883, Meth 2001, Cond D	20,000 g Y1 Direction
10	X	X	Pre Burn-In Electrical		Go/No Go
11	X		HTRB	MIL-STD-883, Meth 1015, Cond A	t = 240 Hrs Min, Ta = +125 °C, Vr =__V
12	X	X	Post Burn-In Electrical		Go/No Go
13	X		Steady State Life	MIL-STD-883, Meth 1005, Cond B (when conditions provided)	t = 1000 hrs min, Ta = +125 °C, Vr =__V or If = mA
14	X	X	Final Electricals	—	Read & Record
15			Subgroup 5		
16	X	X	Bond Strength	MIL-STD-883, Meth 2011	10 (0) Wires or 20 (1) Wires
17			Subgroup 6		
18	X		SEM	MIL-STD-883, Meth 2018 or MIL-STD-750, Meth 2077	

MIL-PRF-19500 100% Environmental Screening Semiconductor Packaged Diodes

Step	Process	Conditions	Comments
1	Visual Inspection	MIL-STD-750, Meth 2073	Performed at Chip Level Prior to Assembly
2	Pre-Cap Visual	MIL-STD-750, Meth 2074	
3	Temperature Storage	MIL-STD-750 Meth 1032	t = __ Hours, Ta = +150 °C
4	Temperature Cycling	MIL-STD-750 Meth 1051, Cond F	20 Cycles, t(ext) = 10 min Ta = -65∞ °C to +150 °C
5	Constant Acceleration	MIL-STD-750 Meth 2006	20,000 g Min Y1 Axis Only (Au Ribbon/Wire Bond Only)
6	PIND	MIL-STD-750 Meth 2052, Cond A	Shock Pulse= 1000 + 200 g, Noise= +20 mV Peak to Peak
7	FIST/BIST (Axial Lead Diodes Only)	MIL-STD-750 Meth 2081 (FIST), 2082(BIST)	Acc =_, Pulse =_, t=_mS, f =_Hz _Blows in Direction, V =_V, I =_A
8	Fine Leak	MIL-STD-750 Meth 1071, Cond H	5 x 10^{-8} atm cc^3/s Max
9	Gross Leak	MIL-STD-750 Meth 1071, Cond C	
10	Initial Electricals	Ir (or as specified)	Read & Record Serialize Diode
11	HTRB1	MIL-STD-750 Meth 1038, Cond A	t = 48 hrs Min, Ta = +150 °C, Vr = __V

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MIL-PRF-19500 100% Environmental Screening Semiconductor Packaged Diodes

Step	Process	Conditions	Comments
12	Interim Electricals	Ir (or as specified)	Read & Record within 16 Hours from Removal of Applied Bias
13	Delta HTRB Measurements	Delta Ir = + _nA or 100%, whichever is greater	Read & Record Delta Ir from Initial-to-Interim Electrical Test
14	PDA	PDA = 5% max, Actual PDA =	PDA = (Qty Rej Delta Ir/qty acc Delta Ir) x 100
15	Forward Burn In[1]	MIL-STD-750 Meth 1038, Cond B	t = 240 Hours Min, Ta = + °C, If= mA
16	Final Electricals	Ir (or as specified)	Read & Record w/in 96 Hours from Removal of Applied Bias
17	Delta Forward B Measurements	Delta Ir= + nA or 100%, whichever is greater	Read & Record Delta Ir from Interim to Final Electrical Test
18	PDA	PDA = 5% Max, Actual PDA = __	
19	Fine Leak	MIL-STD-750 Meth 1071, Cond H	5 x 10^{-8} atm cc^3/s Max
20	Gross Leak	MIL-STD-750 Meth 1071, Cond C	
21	Radiography	MIL-STD-750, Meth 2076	2 Views, X and Y
22	External Visual Inspection	MIL-STD-750 Meth 2071	

Notes: 1. Burn-In methods and conditions to be provided by customer and agreed upon by engineering.

MIL-PRF-19500 Group B Conformance Inspection

Group B Inspection	Sample Size [1, 2]	Conditions	Comments
Subgroup 1			Electrical Rejects may be used
Physical Dimensions	22 (8)	MIL-STD-750 Meth 2066	Specified Case Outline Dimensions
Subgroup 2			Electrical Rejects may be used
Solderability	15 (6) leads	MIL-STD-750 Meth 2026	Leads from a Minimum of 3 Devices shall be tested
Resistance to Solvents	15 (6)	MIL-STD-750 Meth 1022	
Subgroup 3			
Temperature Cycling	22 (6)	MIL-STD-750 Meth 1051, Cond F	45 Cycles including Screening, t_{ext} = 10 min Ta = -65 °C to +150 °C (JANS 100 Cycles)
Thermal Shock	22 (6)	MIL-STD-750 Meth 1056, Cond B	10 Cycles (JANS 25 Cycles) (Glass Axial Lead Only)
Surge	22 (6)		Only when specified
Fine Leak	22 (6)	MIL-STD-750, Meth 1071, Cond H	5 x 10-8 atm cc^3/s max
Gross Leak	22 (6)	MIL-STD-750 Meth 1071, Cond C	
Electrical Tests[3]	22 (6)		Read & Record
Intermittent Operating Life	22 (12)	MIL-STD-750 Meth 1037, 2000 Cycles	Submit to 6000 Cycles to Satisfy Group C Subgroup 6 Requirement
Electrical Tests[3]	22 (12)		Read & Record
De-cap Internal Visual	6 (6)	MIL-STD-750 Meth 2075	Decap Devices
Bond Strength	22 (12) Wires or 1 (6) Devices	MIL-STD-750 Meth 2037	Use for Die Shear
SEM	22 (12)	MIL-STD-750, METH 2077	When Specified
Die Shear	11 (6)	MIL-STD-750, METH 2017	Use Bond Pull Samples
Subgroup 4			
Intermittent Operating Life	22 (12)	MIL-STD-750 Meth 1037, 2000 Cycles	Submit to 6000 Cycles to Satisfy Group C Subgroup 6 Requirement
Electrical Tests	22 (12)		Read & Record Satisfy with Group C Subgroup 6
Subgroup 5			
Accelerated Steady State Life	22 (12)	MIL-STD-750, Meth 1027 *Schottky = Tj Max, 240 hrs.	t = 96 Hours, Ta= +275 °C Vr = V(pk), Io = mA, f = Hz
Electrical Tests[3]	22 (12)		Read & Record
Subgroup 6			
Thermal Resistance	22 (8)	MIL-STD-750 Meth 408 (Meth 3101 Option JANS)	Read & Record
High Temp Life (Non-operating)	22 (12)	MIL-STD-750 Meth 1032	t = 340 Hours, Ta = T STG(MAX)
Electrical Tests[3]	22 (12)		Read & Record

Notes:
1 Small lot sample size defined in parentheses ( ). Group A small lot sampling. Group B small lot sampling.
2 Electrical test parameters shall be defined by product type and specific requirements; test limits at temperature may vary from those published in this catalog.
3 Endpoint electrical tests parameters shall be defined by product type and specific requirements.

Detailed specifications can be found quickly on our website at macom.com by typing the part number into the search box.
All specifications are subject to change.

MIL-PRF-19500 Group C Conformance Inspection (all levels)			
Group C Inspection	Sample Size [1, 2]	Conditions	Comments
Subgroup 1			
Physical Dimensions	15 (6)	MIL-STD-750, Meth 2066	
Subgroup 2			
Thermal Shock	22 (6)	MIL-STD-750 Meth 1056, Cond A	Glass Axial Lead Only
Terminal Strength	22 (6)	MIL-STD-750 Meth 2036, Cond E	Leaded Packages Only, w =_oz.; t =_sec
Fine Leak	22 (6)	MIL-STD-750 Meth 1071, Cond H	5 x 10^{-8} atm cc^3/s Max
Gross Leak	22 (6)	MIL-STD-750 Meth 1071, Cond C	
Moisture Resistance	22 (6)	MIL-STD-750, Meth 1021	Omit Initial Conditioning
End-point Electricals[2]	22 (6)		Read & Record
Subgroup 3			
Shock	22 (6)	MIL-STD-750 Meth 2016	Non-operating, 1500G, 0.5 ms, 5 Blows X1, Y1, Z1
Variable Frequency	22 (6)	MIL-STD-750 Meth 2056	
Acceleration	22 (6)	MIL-STD-750 Meth 2006	1 Minute Min, 20K g X1, Y1, Z1
End-point Electricals[2]	22 (6)		Read & Record
Subgroup 4			
Salt Atmosphere	15 (6)	MIL-STD-750, Meth 1041	Electrical Rejects may be used
Subgroup 5			
Thermal Resistance	15 (6)	MIL-STD-750, Meth 4081	Read & Record
Subgroup 6			
Intermittent Operating Life	22 (12)	MIL-STD-750, Meth 1037 6000 Cycles	Units from Group B-2000 Cycle Test may be used to Complete the 6000 Cycles
End-point Electricals[2]	22 (12)		Read & Record
Bond Strength	11 Wires	MIL-STD-750 Meth 2037	Only when Group B Units continue to satisfy Group C Requirement, Read & Record
Subgroup 7			
Internal Water Vapor	3	MIL-STD-750, Meth 1018	3 Devices c = 0 or 5 Devices c = 1

Notes:
1 Small lot sample size defined in parentheses ( ).
2 Electrical test parameters shall be defined by product type and specific requirements; test limits at temperature may vary from those published in this catalog.

MIL-PRF-38534 100% Environmental Screening Hybrid Devices & MMICs					
Step	Process	MIL-STD-883 Test Method	Comments	K	H
1	Non Destruct Bond Pull	2023		X	—
2	Internal Visual	017		X	X
3	Temperature Cycling	1051	Cond C; 10 Cycles	X	X
4	Constant Acceleration	2001	Cond B; Y1 Only	X	X
5	PIND	2020	Cond A	X	Optional
6	Pre Burn-In Electrical Test	In Accordance with Device Specification	Read & Record, Serialize	X	X
7	Burn-In	1015		X	—
10	Interim Electricals	In Accordance with Device Specification	Read & Record	X	—
11	Burn-In	1015		X	X
12	Final Electricals	In Accordance with Device Specification	Read & Record	X	X
13	Fine Leak	1014		X	X
14	Gross Leak	1014		X	X
15	Radiography	2012	2 Views, X and Y	X	—
16	External Visual Inspection	2009		X	X

Notes:
1 Burn-In methods and conditions to be provided by MACOM. If provided by customer, MACOM reserves the right to review and approve conditions. 2 PDA for Class H is 10% or 1 device. Class K is 2% or 1 device.
All specifications are subject to change.

Detailed specifications can be found quickly on our website at macom.com by typing the part number into the search box.
All specifications are subject to change.

MIL-PRF-38534 Group B Performance Inspection			
Group B Inspection	Sample Size [1, 2]	MIL-STD-883 Test Method	Comments
Subgroup 1	2 (0)		
Physical Dimensions		2016	
Subgroup 3	3 (0)		
Resistance to Solvents		2015	
Subgroup 4	1 (0)		
Internal Visual and Mechanical		2014	
Subgroup 5	2 (0)		
Bond Strength		2011	Condition C; 100 Cycles
Subgroup 6	2 (0)		
Die Shear Strength		2019	
Subgroup 7	1 (0)		
Solderability		2003	Solder Temperature +245 °C + 5 °C
Subgroup 8	5 (0)		
Fine Leak		1014	Class H only
Gross Leak		1014	Class H only

Notes:
1 Small lot sample size with defects allowed provided in parentheses ( ).
2 Electrical test parameters shall be defined by product type and specific requirements; test limits at temperature may vary from those published in this catalog

MIL-PRF-38534 Group C Performance Inspection (all levels)			
Group C Inspection	Sample Size [1, 2]	MIL-STD-883 Test Method	Comments
Subgroup 1	5 (0)		
Resistance to Soldering Heat		2036	
External Visual		2009	
PIND		2020	Condition A
Temperature Cycle		1010	Condition C; 100 Cycles
Mechanical shock		2002	B, Y1 Direction
Constant Acceleration		2001	5000 g, Y1 Direction
Random Vibration		2026	Condition A
Fine Leak		1014	
Gross Leak		1014	
PIND		2020	A, 1 Pass
Visual Examination		1010	Omit Initial Conditioning
End-point Electricals[2]			Read & Record
Subgroup 2	5 (0)	1014	
Steady State Life Test		1005	1,000 Hrs at +125 °C or Equivalent
End-point Electricals[2]			Read & Record
Subgroup 3	3 (0) or 5 (1)		
Internal Water Vapor		1018	
Subgroup 4	2 (0)		
Internal Visual		2017	
Wire Bond Strength		2011	
Element Shear		2019 or 2027	
Subgroup 5	3 (0)		
End-point Electricals[2]			Group A-1
ESDS		3015	
End-point Electricals[2]			Group A-1

Notes:
1 Small lot sample size with defects allowed provided in parentheses ( ).
2 Electrical test parameters shall be defined by product type and specific requirements; test limits at temperature may vary from those published in this catalog.

Detailed specifications can be found quickly on our website at macom.com by typing the part number into the search box.
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MIL-PRF-38534 Group D Performance Inspection			
Group D Inspection	Sample Size [1, 2]	MIL-STD-883 Test Method	Comments
Subgroup 1	5 (0)		
Thermal Shock	5 (0)	2016	Condition C
Stabilization Bake	5 (0)	1008	+150 °C, 1 Hour
Lead Integrity	1 (0)	2004	
Fine Leak	5 (0)	1014	Condition A or B
Gross Leak	5 (0)	1014	Condition C or D
Subgroup 3			
Salt Atmosphere	5 (0)	1009	Condition A
Subgroup 4			
Metal Package Isolation	3 (0)	1003	600 V DC, 100 nA Maximum

PEM-INST-001					
Step	Baseline Screening Step IAW PEM-INST-001	Test Method/Condition	Level 1 (Highest)	Reliability Level Level 2	Level 3 (Lowest)
1	External Visual/ Serialization	Per Requirement (per Note 1)	X	X	X
2	Temperature Cycling	MIL-STD-883 Method 1010 Cond B or Manufacturers Rated Storage Temperature Range	20	20	20
3	Radiography	Per Requirement (Note 1)	X	X	X
4	C-SAM22 (6)	Per Requirement (Note 1)	X	X	X
5	Initial Pre Burn-in Electrical Test	IAW Device Specifications At T_A = +25 °C min/max Rated Operating Temperatures	X X	X X	X
6	Engineering Review	IAW Device Specifications/Requirements Steps 1 – 5			
7	Static Burn-in	MIL-STD-883 Method 1010 Cond A or B IAW Device Specifications/Requirements	240 Hrs @ 125 °C	160 Hrs @ 125 °C	160 Hrs @ 125 °C
8	Post Static Burn-in Electrical Test	IAW Device Specifications/Requirements Calculated Delats When Applicable At T_A = +25 °C	X	X	X
9	Dynamic Burn-In	MIL-STD-833 Method 1015 Cond D IAW Device Specifications/Requirements	240 Hrs at 125 °C	160 Hrs @ 125 °C	160 Hrs @ 125 °C
10	Final Electrical Test	IAW Device Specifications At T_A = +25 °C min/max Rated Operating Temperatures	X	X	X
11	Calculated PDA Steps 7 – 10	Maximum Acceptance PDA	5%	10%	10%
12	External Visual Inspection	Per Requirements (per Note 1)	X	X	X

Notes:
1 "Per Requirement" will depend upon customer/application requirements. (Default will be MIL/Aero Standards and Specifications and/or PEM-INST-001).
2 Custom screening to the above baseline table is available. (Consult with Factory)
3 iQCI will follow requirements detailed in PEM-INST-001 as well as customer/application specific requirements

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MACOM is Qualified to Perform the Following MIL-STD-750 Test Methods

Test Method	Test Condition	MIL-STD-750 Method Title
1016		Insulation Resistance
1020		ESD Test Method
1021		Moisture Resistance
1022		Resistance to Solvents
1026		Steady-State Operation Life
1027		Steady-State Operation Life (sample plan)
1031		High Temperature Life Non-Operating
1032		High Temperature Life (non-operating)
1033	A, B	Reverse Voltage Leakage Stability
1037		Intermittent Operation Life
1038	A, B	HTRB Burn-In & Power Burn-In
1039	A, B	HTRB Power Burn-In
1040	A, B	Burn-In (Thyristors Controlled Rectifiers)/Blocking Voltage Test
1041		Salt Atmosphere
1048		Blocking Life
1051	A, F, G	Temp Cycling (Air-to-Air) and LN2
1054		Potted Environment Stress Test
1055		Monitored Mission
1056	A, B, D	Thermal Shock
1057	B	Glass Cracking
1071	A, B, E, G1	Hermetic Seal
1081		Dielectric Withstanding Voltage
2005		Axial Lead Tensile Test
2006	A thru E	Constant Acceleration
2017	A	Die Attach Integrity (Die Shear)
2026		Solderability
2031	A, B	Resistance to Soldering Heat
2036	A, E	Terminal Strength
2037	D	Bond Strength (Destructive Bond Pull Test)
2038		Surface Mount End Cap Bond Integrity
2052	A	PIND Test
2066		Physical Dimensions
2068		Visual Inspection for Non Transparent Devices
2071		Visual and Mechanical Inspection
2072		Internal Visual Inspection (Pre-Cap)
2073		Chip and Die Visual Inspection
2074		Internal Visual Inspection
2075		Decap Internal Visual Design Verification
2078		Internal Visual For Wire Bonded Diodes and Rectifiers
2101SB		DPA Procedures for Diodes (Scribe and Break only)
3001		Breakdown Voltage, Collector to Base
3011		Breakdown Voltage, Collector to Emitter
3036		Collector to Base Cutoff Current
3041		Collector to Emitter Cutoff Current
3051		Safe Operating Area
3053		Safe Operating Area (Switching)

Test Method	Test Condition	MIL-STD-750 Method Title
3061		Emitter to Base Cutoff Current
3066		Base Emitter Voltage (Saturated or Nonsaturated)
3071		Saturation Voltage and Resistance
3076		Forward-Current Transfer Ratio
3100		Junction Temperature Measurement
3101		Thermal Impedance Testing of Diodes
3131		Thermal Impedance Testing of Transistors
3181		Thermal Resistance for Thyristors
3201		Small-Signal, Short-Circuit Input Impedance
3206		Small-Signal, Short-Circuit Forward-Current Transfer Ratio
3211		Small-Signal, Short-Circuit Reverse-Voltage Transfer Ratio
3216		Small-Signal, Open-Circuit Output Admittance
3236		Cibo Measurement
3240		Cibo Measurement
3246		Noise Figure
3251	A, B	Pulse Response Measurement
3306		Frequency Response
3401		Breakdown Voltage, Gate-to-Source
3403		Gate-to-Source Voltage or Current
3405		Drain-to-Source On-State Voltage
3407		Breakdown Voltage, Drain-to-Source
3411		Gate Reverse Current
3413		Drain Current
3421		Static Drain-to-Source On-State Resistance
3423		Small-Signal, Drain-to-Source On-State Resistance
4001		Capacitance
4011		Forward Voltage
4016		Reverse Current Leakage
4021		Breakdown Voltage (Diodes)
4022		Breakdown Voltage (Voltage Regulators Diodes) and Voltage-Reference
4023	A, B	Scope Display
4026		Forward Recovery, Voltage and Time
4031	A, B	Reverse Recovery TRR
4051		Small-Signal Reverse Breakdown Impedance
4065		Peak Reverse Power Test
4066	A1, A2, B	Test Procedure Surge Current
4071		Temperature Coefficient of Breakdown Voltage
4081		Thermal Resistance of Diodes (Forward Voltage, Switching Method)
4201		Holding Current
4206		Forward Blocking Current
4211		Reverse Blocking Current
4219		Reverse Gate Current
4221		Gate-Trigger Voltage
4226		Forward On Voltage

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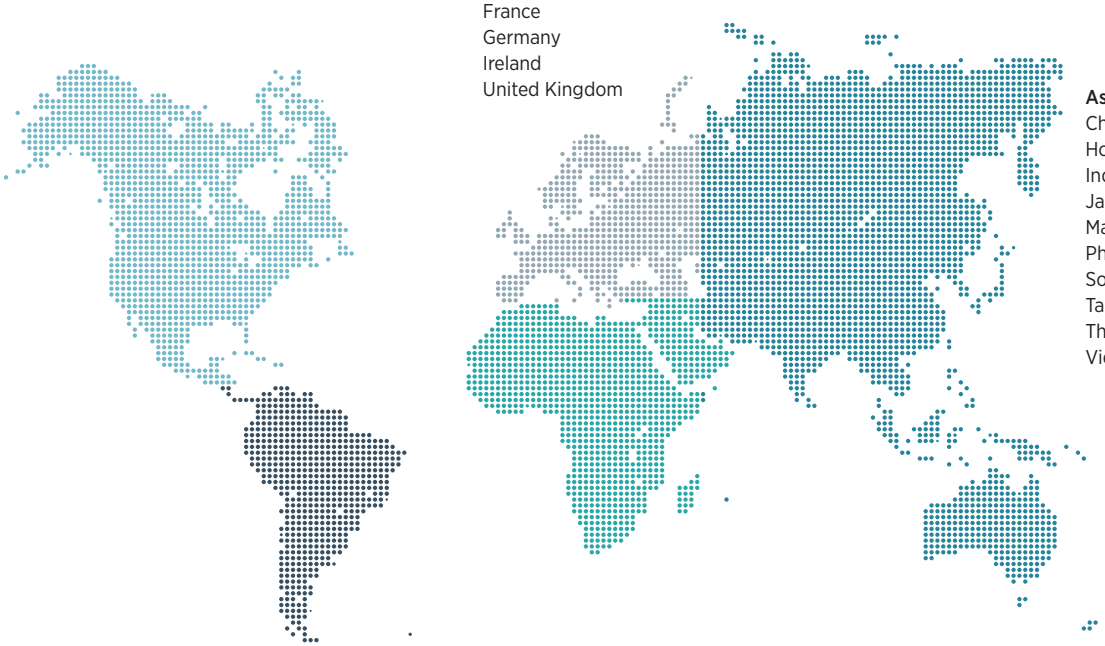

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