

# PRODUCT CATALOG

## FEBRUARY 2024



NOW INCLUDING  
**WAVEGUIDE**

RF, Microwave & mmWave Components

Bare Die, Surface Mount, Connectorized & Waveguide

DC to Sub-THz

*The Trusted Leader When Performance Matters*

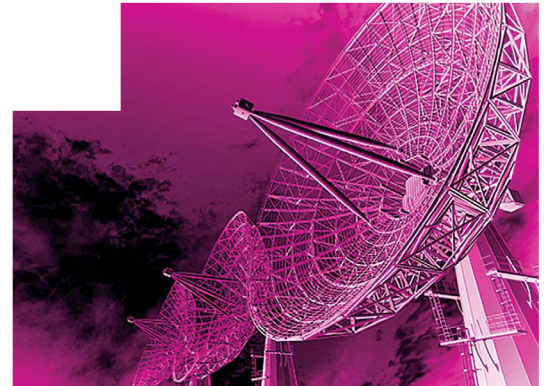
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At Marki Microwave, we empower our customers to **design faster, simplify production, eliminate complexity, and shatter performance barriers**. We achieve this through intensive research, rigorous product development, and advanced, carefully controlled production.

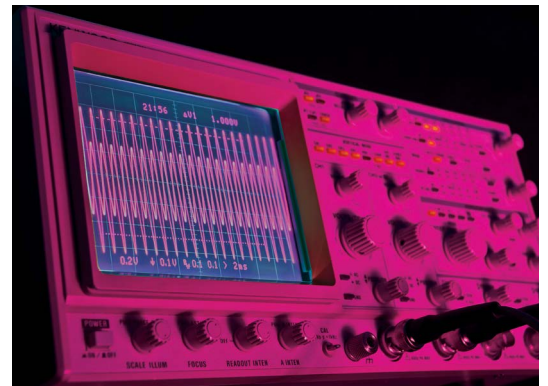
## PERFORMANCE

By combining time-honored fabrication and assembly techniques with a modern design approach, we can push the technological boundaries of broadband RF and microwave components like never before. With proprietary innovations such as our T3 Mixer<sup>®</sup> line and high isolation bridge power combiners, and an expanding portfolio of MMIC devices, we seek to provide the most comprehensive selection of high performance microwave components in the world.



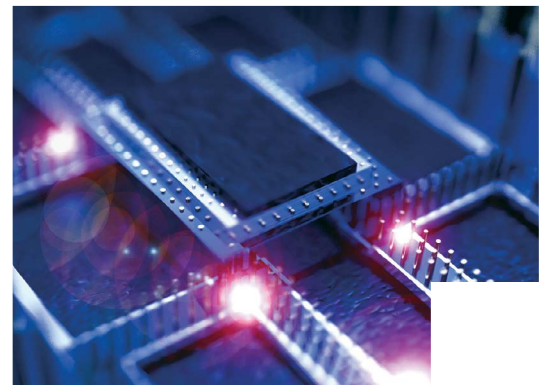
## HIGH FREQUENCY OPERATION

As applications become more complex, data and bandwidth requirements continue to increase. This necessitates a move to higher and higher frequencies to take advantage of available spectrum. At Marki Microwave, we focus on designs and packaging that allow for broadband operation at millimeter wave frequencies, delivering repeatable and consistent performance from simulation to operation. Marki Microwave continues to push the high frequency envelope, allowing our customers to develop superior solutions at an expedited rate.



## PACKAGING

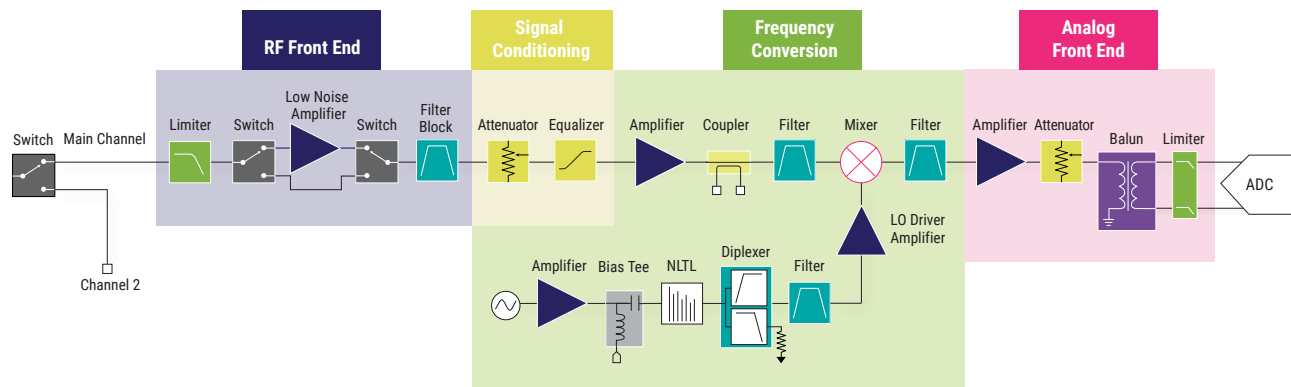
As functions become more complex it is necessary to consider how the role of packaging can affect the design-in-process. We simplify product designs with easy-to-use packages that allow the MMIC design to be realized in both surface mount and connectorized forms, as well as solutions that combine multiple functions into one package. By co-designing the die and package, Marki Microwave ensures optimal performance at the board level. From our chip scale packaging (CSP) that delivers up to 90 GHz in a surface mount footprint to the flexible, multi-octave M-Package designs that enable DC to 120 GHz in a connectorized form, Marki Microwave continues to lead in packaging innovation.



# THE TRUSTED LEADER WHEN PERFORMANCE MATTERS

For over 30 years, we've solved the industry's toughest technical problems by creating a robust portfolio of performance shattering RF and microwave products. Founded in 1991 with the goal of developing the best mixers in the industry, today Marki Microwave is a single source for high performance, broadband microwave technology, supporting multiple form factors including die, surface mount, and connectorized solutions for the entire RF block diagram.

Inventing leading-edge products and focusing on key technical challenges facing the evolving RF and microwave industry have been the cornerstones of our success. From simulation and design to packaging, innovation and creativity are part of our DNA, propelling us forward as we continue to challenge the status quo.



As demands from RF and microwave markets continue to evolve and the supply base consolidates, Marki Microwave remains dedicated to creating a future of limitless possibilities, expanding our catalog and empowering the industry to develop next-generation systems.

NEW

# WAVEGUIDE PRODUCTS



# PRECISION

MILLIMETERWAVE

NOW A MARKI MICROWAVE BUSINESS





# MARKI MICROWAVE

is pleased to announce it has expanded its product portfolio by acquiring the waveguide business of Precision Millimeter Wave.

The acquisition extends Marki Microwave's capabilities into the sub-THz frequency range, allowing the company to innovate and create truly differentiated products that combine waveguide and traditional board-level connection methods.

Marki Microwave can now support RF to mmWave and frequencies from DC to sub-THz for upcoming test and measurement, aerospace and defense, point-to-point communications and space applications, as well as emerging communication platforms such as 6G as it extends into D band.

Current offerings include over 100 standard commercial waveguide products and multiple custom waveguide products spanning mmWave to over 200 GHz.

## Products for mmWave to Sub-THz Frequencies

Fixed Attenuators	Multipliers	Power Dividers	Full Band Isolators
Detectors	H-Bend Waveguides	E-Bend Waveguides	Waveguide Twists
Waveguide Straights	Adjustable Attenuators	Terminations	Standard Gain Horns
Couplers	Amplifiers	Switches	Mixers

To cross-reference Precision Millimeter Wave part numbers with Marki Microwave part numbers, please visit [www.markimicrowave.com](http://www.markimicrowave.com). For questions and new product inquiries, contact [sales@markimicrowave.com](mailto:sales@markimicrowave.com).

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# BARE DIE

## AMPLIFIERS, LO Driver

Part Number	Band (GHz)	Gain (dB)	Psat (dBm)	OIP3 (dBm)	Voltage (V)	Current (mA)	ECCN
<a href="#">ADM-5931CH</a>	DC-28	11	+18	+27	+3 to +7 VD and -0.3 to 0 VG	85	EAR99
<a href="#">ADM-5974CH</a>	DC-35	14	+22	+27	+3 to +7 VD and -0.3 to 0 VG	160	3A001.b.2.d
◆ <a href="#">AMM-9024CH*</a>	DC-70	11.5	+12.5	-	+5 VD and -0.25 VG	45	3A001.b.2.d
<a href="#">APM-7099CH<sup>1</sup></a>	0.01-20	14	+25	+24	+5 to +8 VC and +5 to +8 VB	72	EAR99
<a href="#">APM-7098CH<sup>1</sup></a>	0.1-22	14	+23	+24	+5 to +8 VC and +5 to +8 VB	44	EAR99
<a href="#">APM-6849CH<sup>1</sup></a>	2-30	11	+21	+21	+5 VC and +5 VB	23	EAR99
<a href="#">AMM-7199CH</a>	11-38	20.5	+21	+31	+3 to +4 VD and -0.6 to -0.4 VG	180	3A001.b.2.d
<a href="#">AMM-7200CH</a>	12-46	18	+21.5	+29	+3 to +4 VD and -0.6 to -0.4 VG	180	3A001.b.2.d
<a href="#">AMM-6702CH</a>	20-55	24	+21	+27	+3 to +4 VD and -0.6 to -0.4 VG	200	3A001.b.2.d
<a href="#">AMM-7203CH</a>	30-60	11.5	+16	+21	+1.5 to +3 VD and -0.6 to -0.4 VG	80	3A001.b.2.d

<sup>1</sup>Low Phase Noise

## AMPLIFIERS, Gain Block & Low Noise

Part Number	Band (GHz)	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Voltage (V)	Current (mA)	ECCN
<a href="#">AKA-1300D</a>	DC-14	13	5	+14	+28	+3.8 VD	50	EAR99
<a href="#">AKA-1310D</a>	DC-14	13	5	+14	+28	+4.6 VD	50	EAR99
<a href="#">AKA-1400D</a>	DC-14	17	4	+15	+28	+3.8 VD	50	EAR99
<a href="#">AKA-1500D</a>	DC-14	19	4	+16	+28	+4.2 VD	50	EAR99
<a href="#">ADM-8558CH</a>	DC-20	16	1.8	+14	+23	+6 VD	50	EAR99
◆ <a href="#">ADM-8096CH*</a>	0.09-6	22	1.9	+21	+33	+5 VD	58	EAR99
◆ <a href="#">ADM-8095CH*</a>	0.09-10	18	1.5	+18	+30	+5 VD	39	EAR99
<a href="#">ADM-8556CH</a>	6-20	24	1.3	+16	+27	+3 VD	67	EAR99

## ATTENUATORS

Part Number	Band (GHz)	Attenuation (dB)	Accuracy (dB)	Return Loss (dB)	ECCN
<a href="#">ATN00-0067CH</a>	DC-67	0	see datasheet	32	EAR99
<a href="#">ATN01-0067CH</a>	DC-67	1	see datasheet	33	EAR99
<a href="#">ATN02-0067CH</a>	DC-67	2	see datasheet	35	EAR99
<a href="#">ATN03-0067CH</a>	DC-67	3	see datasheet	37	EAR99
<a href="#">ATN04-0067CH</a>	DC-67	4	see datasheet	36	EAR99
<a href="#">ATN05-0067CH</a>	DC-67	5	see datasheet	36	EAR99
<a href="#">ATN06-0067CH</a>	DC-67	6	see datasheet	37	EAR99
<a href="#">ATN07-0067CH</a>	DC-67	7	see datasheet	33	EAR99
<a href="#">ATN08-0067CH</a>	DC-67	8	see datasheet	38	EAR99
<a href="#">ATN09-0067CH</a>	DC-67	9	see datasheet	38	EAR99
<a href="#">ATN10-0067CH</a>	DC-67	10	see datasheet	38	EAR99
<a href="#">ATN00-00110CH</a>	DC-110	0	see datasheet	21	EAR99
<a href="#">ATN01-00110CH</a>	DC-110	1	see datasheet	20	EAR99
<a href="#">ATN02-00110CH</a>	DC-110	2	see datasheet	23	EAR99
<a href="#">ATN03-00110CH</a>	DC-110	3	see datasheet	22	EAR99
<a href="#">ATN04-00110CH</a>	DC-110	4	see datasheet	22	EAR99
<a href="#">ATN05-00110CH</a>	DC-110	5	see datasheet	25	EAR99
<a href="#">ATN06-00110CH</a>	DC-110	6	see datasheet	26	EAR99
<a href="#">ATN07-00110CH</a>	DC-110	7	see datasheet	27	EAR99
<a href="#">ATN08-00110CH</a>	DC-110	8	see datasheet	26	EAR99
<a href="#">ATN09-00110CH</a>	DC-110	9	see datasheet	26	EAR99
<a href="#">ATN10-00110CH</a>	DC-110	10	see datasheet	25	EAR99

## BALUNS

Part Number	Band (GHz)	Amp Bal (dB)	Phase Bal (°)	Isolation (dB)	Impedance Ratio	Total Insertion Loss as a Mode Converter (dB)	ECCN
<a href="#">MBAL-1440CH</a>	14-40	0.2	1.1	13	1:2	3	EAR99

## DIPLEXERS

Part Number	Passband Low (GHz)	Passband High (GHz)	Isolation (dB)	ECCN
<a href="#">MDPX-0305CH</a>	DC-3	5-26.5	40	EAR99
<a href="#">MDPX-0407CH</a>	DC-4	7-26.5	38	EAR99
<a href="#">MDPX-0609CH</a>	DC-6	9-26.5	51	EAR99
<a href="#">MDPX-2330CH</a>	DC-23	30-60	20	EAR99
<a href="#">MDPX-2734CH</a>	DC-27	34-60	20	EAR99
<a href="#">MDPX-00002CH</a>	DC-35	43.3-59.9	41	EAR99
<a href="#">MDPX-00001CH<sup>1</sup></a>	13.2-15.4	17.4-20.3	59	EAR99

<sup>1</sup>Duplexer

## EQUALIZERS, Positive Gain Slope

Part Number	Band (GHz)	Low Freq Attenuation (dB)	Typ Return Loss (dB)	ECCN
MEQX-7ACH	DC-7	<a href="#">3</a> , <a href="#">6</a> , <a href="#">10</a> & <a href="#">12.5</a>	29, 29, 27, 27	EAR99
MEQX-14ACH	DC-14	<a href="#">3</a> , <a href="#">6</a> & <a href="#">10</a>	23, 22, 24	EAR99
MEQX-20ACH	DC-20	<a href="#">3</a> , <a href="#">5</a> , <a href="#">6</a> , <a href="#">7.5</a> , <a href="#">10</a> & <a href="#">11</a>	21, 22, 21, 23, 25, 23	EAR99
MEQX-30ACH	DC-30	<a href="#">3</a> , <a href="#">6</a> & <a href="#">10</a>	20	EAR99
MEQX-60ACH	DC-60	<a href="#">3</a> , <a href="#">6</a> & <a href="#">10</a>	15	EAR99

## FIXED FILTERS, Lowpass

Part Number	3dB Cutoff (GHz)	Passband Insertion Loss (dB)	Passband Return Loss (dB)	Stopband Frequency (GHz)	Stopband Suppression (dB)	ECCN
<a href="#">MFLP-00001CH</a>	6.15	0.50	20	7.50-40.00	45	EAR99
<a href="#">MFLP-00002CH</a>	9.30	0.50	24	12.00-40.00	52	EAR99
<a href="#">MFLP-00003CH</a>	12.20	0.50	20	16.00-40.00	46	EAR99
<a href="#">MFLP-00004CH</a>	15.20	0.50	21	20.00-40.00	44	EAR99
<a href="#">MFLP-00005CH</a>	18.30	0.40	21	22.00-40.00	49	EAR99

## FIXED FILTERS, Highpass

Part Number	3dB Cutoff (GHz)	Passband Insertion Loss (dB)	Passband Return Loss (dB)	Stopband Frequency (GHz)	Stopband Suppression (dB)	ECCN
<a href="#">MFHP-00001CH</a>	2.00	0.40	20	DC-1.00	79	EAR99
<a href="#">MFHP-00002CH</a>	10.00	0.90	13	DC-7.50	53	EAR99
<a href="#">MFHP-00003CH</a>	15.50	1.30	11	DC-12.70	48	EAR99

### \*New Release

All electrical specifications given are typical values.



**FIXED FILTERS, Bandpass**

Part Number	Center Freq (GHz)	1dBc Passband (GHz)	Insertion Loss in Passband (dB)	ECCN
<a href="#">MFBP-00001CH</a>	5.40	4.70-6.10	1.3	EAR99
<a href="#">MFBP-00002CH</a>	6.60	5.90-7.40	1.53	EAR99
<a href="#">MFBA-00004CH</a>	10.00	8.40-12.50	1.9	EAR99
<a href="#">MFB-1100CH</a>	11.00	9.50-12.50	2.0	EAR99
<a href="#">MFBA-00003CH</a>	12.00	10.10-14.10	2.1	EAR99
<a href="#">MFBP-00026CH</a>	12.50	10.00-14.75	1.2	EAR99
<a href="#">MFBB-00001CH</a>	15.10	14.60-15.65	2.57	EAR99
<a href="#">MFB-1600CH</a>	16.00	12.60-18.60	1.5	EAR99
<a href="#">MFBA-00001CH</a>	16.00	14.10-17.90	2.4	EAR99
<a href="#">MFBP-00025CH</a>	16.50	13.15-19.45	1.2	EAR99
<a href="#">MFB-2025CH</a>	20.25	16.75-24.40	1.5	EAR99
<a href="#">MFBB-00002CH</a>	21.75	20.25-23.25	1.6	EAR99
<a href="#">MFBP-00024CH</a>	22.00	18.65-25.80	1.43	EAR99
<a href="#">MFBA-00002CH</a>	22.20	18.10-26.00	1.8	EAR99
<a href="#">MFB-2400CH</a>	24.00	21.00-27.00	1.5	EAR99
<a href="#">MFB-2500CH</a>	25.00	18.00-32.00	1.5	EAR99
<a href="#">MFB-2625CH</a>	26.25	21.50-30.00	1.5	EAR99
<a href="#">MFBP-00023CH</a>	28.50	25.00-33.30	1.7	EAR99
<a href="#">MFB-3175CH</a>	31.75	26.60-36.70	1.5	EAR99
<a href="#">MFB-3300CH</a>	33.00	26.00-40.00	1.5	EAR99
<a href="#">MFB-3325CH</a>	33.25	32.00-34.30	2.5	EAR99
<a href="#">MFB-3475CH</a>	34.75	29.95-40.00	2.0	EAR99
<a href="#">MFB-3450CH</a>	35.00	24.00-45.00	1.5	EAR99
<a href="#">MFBP-00022CH</a>	36.00	31.00-41.20	1.7	EAR99
<a href="#">MFBC-00017CH</a>	42.00	34.50-49.50	1.5	EAR99
<a href="#">MFBC-00008CH</a>	44.50	36.70-51.10	1.5	EAR99
<a href="#">MFB-5350CH</a>	53.50	40.00-67.00	1.2	EAR99
<a href="#">MFBC-00018CH</a>	53.75	44.50-62.50	2.0	EAR99
<a href="#">MFBC-00009CH</a>	55.60	46.50-63.50	1.6	EAR99
<a href="#">MFBC-00019CH</a>	70.00	58.30-77.70	2.85	EAR99
<a href="#">MFBC-00020CH</a>	93.50	77.35-107.80	3.60	EAR99

**FIXED FILTERS, Absorptive**

Part Number	Center Freq (GHz)	1dBc Passband (GHz)	Insertion Loss in Passband (dB)	Passband Return Loss (dB)	Stopband Return Loss (dB)	ECCN
<a href="#">MFQH-00001CH</a>	19.90	18.50-21.30	3.40	25	12	EAR99

**\*New Release**

All electrical specifications given are typical values.

## IQ MIXERS

Part Number	RF/LO (GHz)	IF (GHz)	Conversion Loss (dB)	Image Rej (dBc)	L-R Isolation (dB)	ECCN
MMIQ-0218(L/H)CH	2-18	DC-3	8/7.5	27/35	58/53	EAR99
MMIQ-0416(L/H)CH	4-16	DC-6	9	28/29	58/59	EAR99
MMIQ-0520(L/H)CH	5-20	DC-6	9	35	46	EAR99
MMIQ-0626(L/H)CH	6-26	DC-6	9	35	41	EAR99
<a href="#">MMIQ-1037HCH</a>	10-37	DC-12	9	25	47	EAR99
MMIQ-1040(L/S)CH	10-40	DC-12	9	25	47/44	EAR99
MMIQ-1865(L/H/S)CH	18-65	DC-23	9	35	49/48/50	EAR99
MMIQ-40100(L/H)CH	40-100	DC-20	10	30	see datasheet	EAR99
<a href="#">MMIQ-30120HCH</a> <sup>1</sup>	30-120	DC-30	8.5	27	40	EAR99

<sup>1</sup>Differential IF IQ Mixer

## MIXERS, Double Balanced

Part Number	RF/LO (GHz)	IF (GHz)	Conversion Loss (dB)	IIP3 (dBm)	LO Drive (dBm)	ECCN
<a href="#">MM1-0115HCH</a>	1-15	DC-2.5	7.5	+21	+17	EAR99
MM1-0212(L/H/S)CH	2-12	DC-3	8/8.5/8.5	+13/+23/+26	+9/+15/+20	EAR99
MM1-0222(L/H)CH	2-22	DC-3.5	8.5	+12/+20	+9/+15	EAR99
MM1-0312(H/S)CH	3-12	DC-4.5	7.5	+19/+24	+15/+20	EAR99
MM1-0320(L/H)CH	3-20	DC-4	8	+10/+20	+7/+15	EAR99
MM1-0330(H/T)CH	3-30	DC-5	7/9	+21/+32	+19/+23	EAR99
<a href="#">MM1-0424SCH</a>	4.5-24	DC-4	8	+25	+20	EAR99
MM1-0626(H/S)CH	6-26.5	DC-9	7.5/8	+21/+25	+15/+20	EAR99
MM1-0832(L/H)CH	8-32	DC-12	8/7.5	+14/+23	+9/+15	EAR99
MM1-1044(L/H)CH	10-44	DC-14	7.5	+13/+22	+9/+15	EAR99
<a href="#">MM1-1140HCH</a>	11-40	DC-12	8	+21	+15	EAR99
<a href="#">MM1-1240SCH</a>	12-40	DC-12	8	+25	+20	EAR99
MM1-1467(L/H)CH	14-67	DC-21	7	+12/+18	+13/+15	EAR99
MM1-1850(H/S)CH	18-50	DC-20	8/8.5	+21/+25	+15/+20	EAR99
MM1-1857(L/H)CH	18-57	DC-21	8/7.5	+13/+20	+9/+13	EAR99
<a href="#">MM1-2567LCH</a>	25-67	DC-30	9	+9	+13	EAR99
<a href="#">MM1-30100LCH</a>	30-100	DC-20	8.5	see datasheet	+14	EAR99
<a href="#">MM1-35130HCH</a>	35-130	DC-50	8	see datasheet	+12	EAR99
<a href="#">MMH-35120HCH</a> <sup>1</sup>	35-120, 12-40	DC-14	18	+7	+15	3A001.b.7.c.1

<sup>1</sup>Harmonic Mixer

## MIXERS, Triple Balanced

Part Number	RF/LO (GHz)	IF (GHz)	Conversion Loss (dB)	IIP3 (dBm)	LO Drive (dBm)	ECCN
MM2-0530(L/H)CH	5-30	2-20	10/9	+19/+28	+15/+20	EAR99
<a href="#">MT3A-0113HCH</a> <sup>1</sup>	1-13	0.5-8.5	8.5	+28	+8	EAR99
<a href="#">MT3L-0113HCH</a>	1.5-13	0.25-5	8.5	+31	+20	EAR99
MT3H-0113(L/H)CH	1.5-13	0.8-8.5	8/8.5	+20/+28	+15/+20	EAR99

<sup>1</sup>Integrated low phase noise driver amplifier**\*New Release**

All electrical specifications given are typical values.

## HYBRIDS, 90° Quadrature

Part Number	Band (GHz)	Amplitude Balance (dB)	Phase Balance (°)	Isolation (dB)	ECCN
<a href="#">MQS-0209CH</a>	2-9	±0.5	±3	16	EAR99
<a href="#">MQS-0218CH</a>	2-18	±1	±3	17	EAR99
<a href="#">MQH-2R58R5CH</a>	2.5-8.5	±0.4	±3	23	EAR99
<a href="#">MQH-3R510CH</a>	3.5-10	±0.4	±1.5	25	EAR99
<a href="#">MQS-0418CH</a>	4-18	±0.4	±0.5	20	EAR99
<a href="#">MQH-0517CH</a>	5-17	±0.5	±6	23	EAR99
<a href="#">MQH-0920CH</a>	9-20	±0.55	±2	21.5	EAR99
<a href="#">MQH-1434CH</a>	14-34	±0.7	±4.5	17	EAR99
<a href="#">MQH-1842CH</a>	18-42	±1.5	±4	15	EAR99

## LIMITERS

Part Number	Band (GHz)	Loss (dB)	Flat Leakage (dBm)	Peak Power CW (W)	Peak Power, Pulsed (W)	P1dB (dBm)	ECCN
<a href="#">HLM-8011CH</a>	DC-30	0.4	+7@30GHz	1	4.5	+10	EAR99
<a href="#">HLM-40CH</a>	DC-40	0.5	+16@20GHz	4	20	+15	EAR99

## PASSIVE MULTIPLIERS & NON LINEAR TRANSMISSION LINES

Part Number	Type	Input (GHz)	Output (GHz)	1F Supp (dBc)	3F Supp (dBc)	ECCN
<a href="#">MMD-0415HCH</a>	Doubler	2-7.5	4-15	27	36	EAR99
<a href="#">MMD-1030(L/H)CH</a>	Doubler	5-15	10-30	38/41	46/47	EAR99
<a href="#">MMD-1250HCH</a>	Doubler	6-25	12-50	32	40	EAR99
<a href="#">MMD-1648LCH</a>	Doubler	8-24	16-48	44	69	EAR99
<a href="#">MMD-2060(L/H)CH</a>	Doubler	10-30	20-60	37/38	41/40	EAR99
<a href="#">MMD-3580LCH</a>	Doubler	17.5-40	35-80	38	44	EAR99
<a href="#">MMD-20100HCH</a>	Doubler	10-50	20-100	24.5	33	3A001.b.7.b.1
<a href="#">MMD-40120HCH</a>	Doubler	20-60	40-120	30	40	3A001.b.7.b.1
<a href="#">MMQ-40125HCH</a>	Quadrupler	10-31.25	40-125	19	12	3A001.b.7.b.1
<a href="#">NLTL-6273CH</a>	Comb Generator	0.7-5	0.7-40	—	—	EAR99
<a href="#">NLTL-6275CH</a>	Comb Generator	3-15	3-85	—	—	EAR99

## POWER DIVIDERS, 1:2

Part Number	Band (GHz)	Amplitude Balance (dB)	Phase Balance (dB)	Isolation (dB)	ECCN
<a href="#">MPD-0226CH</a>	2-26.5	±0.2	±2	20	EAR99

### \*New Release

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## SURFACE MOUNTS

### AMPLIFIERS, LO Driver

Part Number	Band (GHz)	Gain (dB)	Psat (dBm)	OIP3 (dBm)	Bias Voltage (V)	Bias Current (mA)	Package	ECCN
<a href="#">ADM-0012-5931SM</a>	DC-12	11	+18	+26	+3 to +7 VD and -0.3 to 0 VG	85	3mm QFN	EAR99
<a href="#">ADM-0026-5929SM</a>	DC-26.5	13	+20	+26	+3 to +7 VD and -0.3 to 0 VG	165	4mm QFN	EAR99
<a href="#">APM-7099SM<sup>1</sup></a>	0.01-20	14	+25	+27	+5 to +8 VC and +5 to +8 VB	72	4mm QFN	EAR99
<a href="#">APM-7098SM<sup>1</sup></a>	0.1-22	15	+23	+22	+5 to +8 VC and +5 to +8 VB	44	4mm QFN	EAR99
<a href="#">AMM-7473PSM</a>	0.4-27	17	+25	+34	+5 to +7 VD and -0.7 to -0.6 VG	150	4mm QFN	EAR99
<a href="#">APM-7516PSM</a>	1.5-20	11	+22	+33	+5 VC and +5 VB	106	4mm QFN	EAR99
<a href="#">APM-6849SM<sup>1</sup></a>	2-30	11	+21	+20	+5 VC and +5 VB	23	3mm QFN	EAR99
<a href="#">ADM-8007PSM</a>	2-40	23	+24	+30	+3 to +6 VD and +3 to +6 VG	218	4mm QFN	3A001.b.2.d
<a href="#">AMM-7199SM</a>	11-38	21	+21	+29	+3 to +4 VD and -0.6 to -0.4 VG	180	3mm QFN	3A001.b.2.d
<a href="#">AMM-7200SM</a>	12-46	18	+22	+29	+3 to +4 VD and -0.6 to -0.4 VG	180	3mm QFN	3A001.b.2.d
<a href="#">AMM-6702SM</a>	20-50	28	+22	+27	+3 to +4 VD and -0.6 to -0.4 VG	200	4mm KFN	3A001.b.2.d

<sup>1</sup>Low Phase Noise

### AMPLIFIERS, Gain Block & Low Noise

Part Number	Band (GHz)	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Voltage (V)	Current (mA)	Package	ECCN
<a href="#">ADM-8622PSM</a>	DC-10	15.5	2	+13.5	+26	+3.3 VD	40	1.3x2mm DFN	EAR99
<a href="#">AKA-1300PSM</a>	DC-14	13	5	+14	+28	+3.8 VD	50	1.3x2mm DFN	EAR99
<a href="#">AKA-1310PSM</a>	DC-14	13	5	+14	+28	+4.6 VD	50	1.3x2mm DFN	EAR99
<a href="#">AKA-1400PSM</a>	DC-14	17	4	+15	+28	+3.8 VD	50	1.3x2mm DFN	EAR99
<a href="#">AKA-1500PSM</a>	DC-14	19	4	+16	+28	+4.2 VD	50	1.3x2mm DFN	EAR99
<a href="#">ADM-8350PSM</a>	0.09-6	22	1.8	+22	+39.5	+5 VD	84	1.3x2mm DFN	EAR99
<a href="#">ADM-8096PSM</a>	0.09-6	22	1.5	+21	+33	+5 VD	58	1.3x2mm DFN	EAR99
<a href="#">ADM-8095PSM</a>	0.09-10	18	1.2	+18	+30	+5 VD	39	1.3x2mm DFN	EAR99
<a href="#">ADM-8624PSM</a>	0.2-20	11.5	2.8	+13.5	+25	+5 VD	40	1.3x2mm DFN	EAR99
<a href="#">ADM-8475PSM</a>	0.5-18	13	2	+16	+27	+5 VD	40	1.3x2mm DFN	EAR99
<a href="#">ADM-8625PSM</a>	0.75-8	18	1.5	+17	+26	+5 VD	49	3mm QFN	EAR99
<a href="#">ADM-8536PSM</a>	2-20	10	2.5	+13	+25	+5 VD	41	1.3x2mm DFN	EAR99

### ATTENUATORS

Part Number	Band (GHz)	Attenuation (dB)	Accuracy (dB)	Return Loss (dB)	Package	ECCN
<a href="#">ATN00-0040PSM</a>	DC-40	0	see datasheet	27	1.3x2mm DFN	EAR99
<a href="#">ATN03-0040PSM</a>	DC-40	3	see datasheet	25	1.3x2mm DFN	EAR99
<a href="#">ATN06-0040PSM</a>	DC-40	6	see datasheet	22	1.3x2mm DFN	EAR99
<a href="#">ATN10-0040PSM</a>	DC-40	10	see datasheet	25	1.3x2mm DFN	EAR99
<a href="#">ATN03-0050CSP1</a>	DC-50	3	see datasheet	20	1.5mm CSP	EAR99
<a href="#">ATN06-0050CSP1</a>	DC-50	6	see datasheet	20	1.5mm CSP	EAR99
<a href="#">ATN10-0050CSP1</a>	DC-50	10	see datasheet	24	1.5mm CSP	EAR99

#### \*New Release

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## BALUNS

Part Number	Band (GHz)	Amp Bal (dB)	Phase Bal (°)	Isolation (dB)	Impedance Ratio	Total Insertion Loss as a Mode Converter (dB)	Package	ECCN
<a href="#">BAL-0003SMG</a>	0.0005-3	0.3	3	9	1:2	3.8	SMG	EAR99
<a href="#">BALH-0003SMG</a>	0.0005-3	0.2	2	7	1:1	2	SMG	EAR99
<a href="#">BALE-0003SMG</a>	0.01-3	0.2	1	9	1:2	4	SMG	EAR99
<a href="#">BALHE-0003SMG</a>	0.01-3	0.2	2	7	1:1	2	SMG	EAR99
<a href="#">BAL-0006SMG</a>	0.0005-6	0.4	3	8	1:2	4	SMG	EAR99
<a href="#">BALH-0006SMG</a>	0.0005-6	0.2	3	6	1:1	2	SMG	EAR99
<a href="#">BALE-0006SMG</a>	0.01-6	0.4	1	9	1:2	4	SMG	EAR99
<a href="#">BALHE-0006SMG</a>	0.01-6	0.2	3	6	1:1	3	SMG	EAR99
<a href="#">BAL-0009SMG</a>	0.0005-9	0.6	5	8	1:2	4.5	SMG	EAR99
<a href="#">BALH-0009SMG</a>	0.0005-9	0.8	5	6	1:1	2.5	SMG	EAR99
<a href="#">BALE-0009SMG</a>	0.01-9	0.5	4	9	1:2	4.5	SMG	EAR99
<a href="#">BALHE-0009SMG</a>	0.01-9	0.5	5	9	1:1	4.5	SMG	EAR99
<a href="#">MBAL-0104SM</a>	1-4	0.2	2	8	1:2	2.5	4mm QFN	EAR99
<a href="#">BAL-0208SMG</a>	2-8	0.3	1	17	1:2	2.5	SMG	EAR99
<a href="#">BAL-0416SMG</a>	4-16	0.4	1	15	1:2	3.3	SMG	EAR99
<a href="#">BAL-0012SSG</a>	0.01-12	0.6	5	8	1:2	5	SSG	EAR99
<a href="#">BALH-0012SSG</a>	0.01-12	0.6	5	5.5	1:1	2	SSG	EAR99
<a href="#">BAL-0020SLG</a>	0.01-20	0.4	5	12	1:2	4.5	SLG	EAR99
<a href="#">MBAL-0220SM</a>	2-20	0.25	3	10	1:2	6	4mm QFN	EAR99
<a href="#">BAL-0620SMG</a>	6-20	0.2	1	14	1:2	2.6	SMG	EAR99
<a href="#">BAL-0032SSG</a>	0.01-32	0.5	5	8	1:2	5	SSG	EAR99
<a href="#">MBAL-1445SM</a>	14-45	0.2	2	18	1:2	4.5	4mm QFN	EAR99

## BIAS TEES

Part Number	Band (GHz)	Insertion Loss (dB)	DC Current (A)	DC Port Isolation (dB)	DC Voltage (V)	Package	ECCN
<a href="#">BT-0010SMG(-1/-2)</a>	0.02-10	0.5	0.5	40	30	SMG	EAR99
<a href="#">BTL-0012SMG(-1/-2)</a>	0.0005-12	0.5	0.5	35	30	SMG	EAR99
<a href="#">BTM-0026PSM-2</a>	0.01-26	0.43	0.32	25	16	PSM	EAR99
<a href="#">BT-0026SMG(-1/-2)</a>	0.02-26	1	0.5	40	35	SMG	EAR99
<a href="#">BTL-0026SMG(-1/-2)</a>	0.0005-26	1	0.5	35	30	SMG	EAR99
<a href="#">BT-0035SMG(-1/-2)</a>	0.02-35	1	0.5	35	30	SMG	EAR99
<a href="#">BTL-0035SMG(-1/-2)</a>	0.0005-35	1	0.5	35	30	SMG	EAR99

## COUPLER, Directional

Part Number	Band (GHz)	VSWR	Mean Coupling (dB)	Directivity (dB)	Package	ECCN
<a href="#">MC16-0222SM</a>	2-22	1.22	16	19	4mm QFN	EAR99

## HYBRIDS, 90° Quadrature

Part Number	Band (GHz)	Amp Bal (dB)	Phase Bal (°)	Isolation (dB)	Package	ECCN
<a href="#">MQS-0218SM</a>	2-18	±1	±3	15	4mm QFN	EAR99
<a href="#">MQS-0518SM</a>	5-18	±0.5	±2.5	17	4mm QFN	EAR99

### \*New Release

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**EQUALIZERS, Positive Gain Slope**

Part Number	Band (GHz)	Low Freq Attenuation (dB)	Typ Return Loss (dB)	Package	ECCN
MEQX-7ASM	DC-7	<a href="#">3</a> , <a href="#">6</a> , <a href="#">10</a> & <a href="#">12.5</a>	29, 29, 27, 27	3mm QFN	EAR99
MEQX-14ASM	DC-14	<a href="#">3</a> , <a href="#">6</a> & <a href="#">10</a>	23, 28, 29	3mm QFN	EAR99
MEQX-20ASM	DC-20	<a href="#">3</a> , <a href="#">5</a> , <a href="#">6</a> , <a href="#">7.5</a> , <a href="#">10</a> & <a href="#">11</a>	19, 22, 23, 26, 20, 27	3mm QFN	EAR99
<a href="#">MEQ6-26CSP1</a>	DC-26	6	23	1.5mm CSP	EAR99
<a href="#">MEQ10-26CSP1</a>	DC-26	10	17	1.5mm CSP	EAR99
<a href="#">MEQ06-45CSP1</a>	DC-45	6	17	1.5mm CSP	EAR99
<a href="#">MEQ10-45CSP1</a>	DC-45	10	13	1.5mm CSP	EAR99

**DIPLEXERS**

Part Number	Passband Low (GHz)	Passband High (GHz)	Isolation (dB)	Package	ECCN
DPX-M50(-1/-2)	DC-0.035	0.07-10	24	SM	EAR99
DPX-0R5(-1/-2)	DC-0.36	0.7-8	24	SM	EAR99
DPX-1(-1/-2)	DC-0.85	1.4-5	24	SM	EAR99
DPX-2(-1/-2)	DC-1.5	2.7-7	25	SM	EAR99
DPX-3(-1/-2)	DC-2.3	4.2-8	25	SM	EAR99
DPX-4(-1/-2)	DC-2.8	5.5-12	30	SM	EAR99
<a href="#">MDPX-0305PSM</a>	DC-3	5-26.5	37	3mm QFN	EAR99
<a href="#">MDPX-0407PSM</a>	DC-4	7-26.5	38	3mm QFN	EAR99

**FIXED FILTERS, Lowpass**

Part Number	3dB Cutoff (GHz)	Passband Insertion Loss (dB)	Passband Return Loss (dB)	Stopband Frequency (GHz)	Stopband Suppression (dB)	Package	ECCN
<a href="#">MFLP-00001PSM</a>	6.10	0.80	21	7.50-40.00	57	4mm QFN	EAR99
<a href="#">MFLP-00002PSM</a>	9.40	0.70	23	12.00-40.00	52	4mm QFN	EAR99
<a href="#">MFLP-00003PSM</a>	12.30	0.50	21	16.00-40.00	52	4mm QFN	EAR99
<a href="#">MFLP-00004PSM</a>	15.40	0.60	21	20.00-40.00	49	4mm QFN	EAR99
<a href="#">MFLP-00005PSM</a>	18.50	0.50	21	22.00-40.00	49	4mm QFN	EAR99

**FIXED FILTERS, Highpass**

Part Number	3dB Cutoff (GHz)	Passband Insertion Loss (dB)	Passband Return Loss (dB)	Stopband Frequency (GHz)	Stopband Suppression (dB)	Package	ECCN
<a href="#">MFHP-00001PSM</a>	2.00	0.40	19	DC-1.00	79	4mm QFN	EAR99
<a href="#">MFHP-00004PSM</a>	6.00	0.40	20	DC-3.30	60	4mm QFN	EAR99
<a href="#">MFHP-00005PSM</a>	8.00	0.50	21	DC-4.80	65	4mm QFN	EAR99
<a href="#">MFHP-00002PSM</a>	9.80	0.40	17	DC-7.50	53	4mm QFN	EAR99
<a href="#">MFHP-00006PSM</a>	12.00	0.50	21	DC-8.30	55	4mm QFN	EAR99
<a href="#">MFHP-00003PSM</a>	15.40	0.70	17	DC-12.70	53	4mm QFN	EAR99

**FIXED FILTERS, Absorptive**

Part Number	Center Freq (GHz)	1dBc Passband (GHz)	Insertion Loss in Passband (dB)	Passband Return Loss (dB)	Stopband Return Loss (dB)	Package	ECCN
<a href="#">MEQH-00001PSM</a>	19.80	18.50-21.20	3.20	24	13	5mm QFN	EAR99

**\*New Release**

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## FIXED FILTERS, Bandpass

Part Number	Center Freq (GHz)	1dBc Passband (GHz)	Insertion Loss in Passband (dB)	Package	ECCN
<a href="#">MFBP-00010PSM</a>	3.45	2.20-5.90	1.50	5mm QFN	EAR99
<a href="#">MFBP-00011PSM</a>	4.00	2.30-8.05	1.24	5mm QFN	EAR99
<a href="#">MFBP-00001PSM</a>	5.40	4.70-6.20	1.30	4mm QFN	EAR99
<a href="#">MFBP-00002PSM</a>	6.60	5.90-7.50	1.50	4mm QFN	EAR99
<a href="#">MFBP-00004PSM</a>	7.75	6.05-10.30	1.85	5mm QFN	EAR99
<a href="#">FB-0785SMG</a>	7.85	7.25-8.45	2.20	SMG	EAR99
<a href="#">FB-0850SM</a>	8.50	7.85-9.20	2.00	SM	EAR99
<a href="#">MFBC-00001PSM</a>	8.70	7.40-9.90	2.00	5mm QFN	EAR99
<a href="#">FB-0900SM</a>	9.00	8.40-9.60	2.20	SM	EAR99
<a href="#">FB-0955SM</a>	9.55	8.90-10.20	2.00	SM	EAR99
<a href="#">MFBA-00004PSM</a>	10.00	8.40-12.25	1.90	5mm QFN	EAR99
<a href="#">MFBP-00006PSM</a>	10.20	8.20-13.50	1.83	5mm QFN	EAR99
<a href="#">MFBP-00005PSM</a>	10.40	6.25-18.05	1.10	5mm QFN	EAR99
<a href="#">FB-1050SM</a>	10.50	9.60-11.40	2.00	SM	EAR99
<a href="#">MFBC-00002PSM</a>	11.00	9.13-12.40	1.80	5mm QFN	EAR99
<a href="#">FB-1140SM</a>	11.40	10.45-12.35	2.00	SM	EAR99
<a href="#">MFBP-00008PSM</a>	11.85	10.40-13.85	1.73	5mm QFN	EAR99
<a href="#">MFBA-00003PSM</a>	12.00	10.10-14.10	2.10	5mm QFN	EAR99
<a href="#">FB-1215SM</a>	12.15	11.35-12.95	2.00	SM	EAR99
<a href="#">FB-1300SMG</a>	13.00	12.00-14.00	2.00	SMG	EAR99
<a href="#">MFBP-00007PSM</a>	13.40	10.25-18.25	1.80	5mm QFN	EAR99
<a href="#">MFBC-00003PSM</a>	14.15	11.85-15.90	1.70	5mm QFN	EAR99
<a href="#">FB-1445SM</a>	14.45	13.20-15.70	2.00	SM	EAR99
<a href="#">MFB-1445SM</a>	14.45	13.60-15.10	3.80	3mm QFN	EAR99
<a href="#">FB-1575SMG</a>	15.75	14.60-16.90	2.00	SMG	EAR99
<a href="#">MFBP-00009PSM</a>	15.85	14.10-17.85	1.86	5mm QFN	EAR99
<a href="#">MFBA-00001PSM</a>	16.00	14.10-17.90	2.40	5mm QFN	EAR99
<a href="#">MFBC-00010PSM</a>	16.50	14.60-18.90	1.70	5mm QFN	EAR99
<a href="#">MFBC-00004PSM</a>	17.50	14.90-19.90	1.60	5mm QFN	EAR99
<a href="#">MFBC-00011PSM</a>	18.50	16.15-20.70	1.70	5mm QFN	EAR99
<a href="#">MFBC-00012PSM</a>	20.30	17.20-23.40	1.55	5mm QFN	EAR99
<a href="#">MFBC-00005PSM</a>	22.00	18.60-25.10	1.40	5mm QFN	EAR99
<a href="#">MFBA-00002PSM</a>	22.20	18.10-26.00	1.80	5mm QFN	EAR99
<a href="#">MFBC-00013PSM</a>	22.50	19.50-26.20	1.50	5mm QFN	EAR99
<a href="#">MFBC-00014PSM</a>	25.75	22.20-29.90	1.75	5mm QFN	EAR99
<a href="#">MFBC-00006PSM</a>	28.00	23.60-32.20	1.6	5mm QFN	EAR99
<a href="#">MFBC-00015PSM</a>	30.00	25.40-34.70	1.39	5mm QFN	EAR99
<a href="#">MFBC-00007PSM</a>	35.00	30.10-39.30	1.5	5mm QFN	EAR99
<a href="#">MFBC-00016PSM</a>	36.00	30.60-41.00	1.21	5mm QFN	EAR99

**\*New Release**

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**CONFIGURABLE FILTERS, Tunable**

Part Number	Center Freq (GHz)	3dBc Passband (GHz)	Insertion Loss at Center Freq (dB)	Passband Return Loss (dB)	Stopband Rejection (dB)	OIP3 (dBm)	Package	ECCN
◆ <a href="#">MFBT-00001PSM*</a>	3.50-9.50	3.00-10.00	6.50	15	35	33	4mm QFN	3A001.b.5.a
◆ <a href="#">MFBT-00002PSM*</a>	5.50-15.50	4.50-16.50	6.50	15	35	33	4mm QFN	3A001.b.5.a
◆ <a href="#">MFBT-00003PSM*</a>	10.00-26.00	8.00-30.00	7.50	10	35	35	4mm QFN	3A001.b.5.a

**LIMITERS**

Part Number	Band (GHz)	Loss (dB)	Flat Leakage (dBm)	Average Power Handling (W)	Peak Power Handling (W)	P1dB (dBm)	Package	ECCN
<a href="#">DLM-10SM</a>	DC-10	0.75	Adjustable	0.5	—	+10	3mm QFN	EAR99
<a href="#">HLM-20PSM</a>	DC-20	0.5	+16@10GHz	5	50	+15	4mm QFN	EAR99
<a href="#">HLM-40PSM</a>	DC-40	0.5	+15@20GHz	2.5	9.5	+14	4mm QFN	EAR99
<a href="#">HLM-8010CSP1</a>	DC-40	0.5	+10@20GHz	1.9	3.2	+11	1.5mm CSP1	EAR99

**SWITCHES**

Part Number	Band (GHz)	Insertion Loss (dB)	Isolation (dB)	IIP3 (dB)	Package	ECCN
<a href="#">MSW2-1001ELGA</a>	0.1-40	1.2	38	50	2.25mm LGA	EAR99

**IQ MIXERS**

Part Number	RF/LO (GHz)	IF (GHz)	Conversion Loss (dB)	Image Rej (dBc)	L-R Isolation (dB)	Package	ECCN
<a href="#">MMIQ-0106HCSM</a>	1.5-5.5	DC-3	8	33	62	5mm QFN	EAR99
<a href="#">MMIQ-0205HSM</a>	1.75-5	DC-2	8	32	61	5mm QFN	EAR99
MMIQ-0218(L/H)SM	2-18	DC-3	8	27/35	58/53	6mm QFN	EAR99
MMIQ-0416(L/H)SM	4-16	DC-6	9/8.5	35/31	51	4mm QFN	EAR99
MMIQ-0520(L/H)SM	5-20	DC-6	9	35	46/39	4mm QFN	EAR99
MMIQ-0626(L/H)SM	6-26	DC-6	9	35	39/36	4mm QFN	EAR99
MMIQ-1040(L/H)SM	10-40	DC-10	9	35	50/40	4mm QFN	EAR99
MMIQ-1867(L/H)SM	18-67	DC-23	9	32/29	48.5/44	4mm QFN	EAR99

**IQ MIXERS, Integrated Drive**

Part Number	RF/LO (GHz)	IF (GHz)	Conversion Loss (dB)	Image Rej (dBc)	LO Drive (dBm)	Package	ECCN
◆ <a href="#">MMIQA-0218HPSM*</a>	2-18	DC-3	7.5	28	+0 to +8	7mm QFN	EAR99
◆ <a href="#">MMIQA-1040HPSM*</a>	10-40	DC-10	9	29	+0 to +8	7mm QFN	EAR99

**\*New Release**

All electrical specifications given are typical values.



**MIXERS, Double Balanced**

Part Number	RF/LO (GHz)	IF (GHz)	Conversion Loss (dB)	IIP3 (dBm)	LO Drive (dBm)	Package	ECCN
<a href="#">MM1-0115HPSM</a>	1-15	DC-2.5	8	+21	+17	4mm QFN	EAR99
MM1-0212(L/H/S)SM	2-12	DC-3	8.5/8.5/9	+13/+25/+28	+9/+15/+20	4mm QFN	EAR99
MM1-0222(L/H)SM	2-22	DC-3.5	7/7.5	+11.5/+20	+11/+20	3mm QFN	EAR99
MM1-0312(H/S)SM	3-12	DC-4.5	7	+19/+24	+15/+20	3mm QFN	EAR99
<a href="#">MM1-0320HSM</a>	3-20	DC-4	8	+20	+15	3mm QFN	EAR99
<a href="#">MM1-0424SSM</a>	4.5-24	DC-4	8	+25	+20	3mm QFN	EAR99
MM1-0626(H/S)SM	6-26.5	DC-9	7.5/8	+21/+24.5	+15/+20	3mm QFN	EAR99
<a href="#">MM1-0726HSM</a>	7-26.5	DC-9	7.5	+17	+20	3mm QFN	EAR99
MM1-0832(L/H)SM	8-32	DC-12	8.5/8	+11/+20.5	+9/+15	3mm QFN	EAR99
<a href="#">MM1-0832HPSM</a>	8-32	DC-12	8	+23	+15	3mm QFN	EAR99
<a href="#">MM1-1040HPSM</a>	10-40	DC-12	9	+20	+15	3mm QFN	EAR99
<a href="#">MM1-1130HSM</a>	11-30	DC-12	7	+21	+15	3mm QFN	EAR99
MM1-1453(L/H)SM	14-53	DC-22	8/7.6	+13/+17	+13/+15	4mm QFN	EAR99
MM1-1850(H/S)SM	18-50	DC-21	8.7/9.7	+17/+28	+15/+20	4mm KFN	EAR99
<a href="#">MM1-2567LSM</a>	25-67	DC-30	11	+9	+9	3mm QFN	EAR99

**MIXERS, Triple Balanced**

Part Number	RF/LO (GHz)	IF (GHz)	Conversion Loss (dB)	IIP3 (dBm)	LO Drive (dBm)	Package	ECCN
MM2-0530(L/H)SM	5-30	2-20	10/9	+19/+28	+15/+20	4mm QFN	EAR99
<a href="#">MM2D-0528SCSM<sup>1</sup></a>	5-28	DC-12	10	+31	+28	4mm QFN	EAR99
MT3-0113(L/H/S)CQG	1.5-13	0.01-7	7.5/7.5/8.5	+24/+30/+36	+15/+20/+27	CQG	EAR99
<a href="#">MT3D-0113LSM<sup>1</sup></a>	1.5-13	see plots	7.5	+27	+17	4mm QFN	EAR99
<a href="#">MT3D-0325HCSM<sup>1</sup></a>	3-25	DC-6	7.5	+25	+20	4mm QFN	EAR99
<a href="#">MT3L-0113HSM</a>	1.5-13	0.25-5	8.5	+20	+31	4mm QFN	EAR99
MT3H-0113(L/H)SM	1.5-13	0.8-8.5	8	+22/+29	+15/+20	4mm QFN	EAR99
T3-18GLCTG(-1/-2)	0.01-18	0.001-10	7.5	+30	+20	CQG	EAR99
T3H-18GLCTG(-1/-2)	0.01-18	0.01-18	9.5	+30	+20	CQG	EAR99
T3-20GLCTG(-1/-2)	0.01-20	0.001-10	7.5	+30	+20	CQG	EAR99
T3H-20GLCTG(-1/-2)	0.01-20	0.01-18	9.5	+30	+20	CQG	EAR99

<sup>1</sup>Differential IF**\*New Release**

All electrical specifications given are typical values.

**MIXERS, Integrated Drive**

Part Number	RF/LO (GHz)	IF (GHz)	Conversion Loss (dB)	IIP3 (dBm)	LO Drive (dBm)	Package	ECCN
<a href="#">MT3A-0113HCSM</a>	1.5-13	0.5-8.5	9.5	+28	+5 to +15	6mm QFN	EAR99
<a href="#">MM1A-0222HPSM</a>	2-22	DC-3.5	7.5	+17	+3 to +15	5mm QFN	EAR99
<a href="#">MM1A-0622HPSM</a>	6-22	DC-9	7.5	+21	+3 to +15	5mm QFN	EAR99
<a href="#">MM1A-0832HPSM</a>	8-32	DC-12	9	+24	-6 to +6	3x4.6mm QFN	EAR99
<a href="#">MM1A-1040HPSM</a>	10-40	DC-12	10	+23	+3 to +9	3x4.6mm QFN	EAR99
<a href="#">MM1A-1855HPSM</a>	18-55	DC-21	9	+20	+4 to +10	3x4.6mm QFN	EAR99

**PASSIVE MULTIPLIERS & NON LINEAR TRANSMISSION LINES**

Part Number	Type	Input (GHz)	Output (GHz)	1F Supp (dBc)	3F Supp (dBc)	Package	ECCN
<a href="#">MMD-0415HPSM</a>	Doubler	2-7.5	4-15	27	38	3mm QFN	EAR99
<a href="#">MMD-1030(LC/H)SM</a>	Doubler	5-15	10-30	31/34	43/46	3mm QFN	EAR99
<a href="#">MMD-2050(L/H)SM</a>	Doubler	10-25	20-50	35/33	46/40	3mm QFN	EAR99
<a href="#">NLTL-6794SM</a>	Comb Generator	0.1-1	0.1-30	—	—	6mm QFN	EAR99
<a href="#">NLTL-6796SM</a>	Comb Generator	0.5-3.5	0.5-50	—	—	6mm QFN	EAR99
<a href="#">NLTL-6273SM</a>	Comb Generator	0.7-5	0.7-24	—	—	5mm QFN	EAR99

**POWER DIVIDERS**

Part Number	Band (GHz)	Excess Loss (dB)	Amp Bal (dB)	Isolation (dB)	Type	Package	ECCN
<a href="#">PD-0030SMG</a>	DC-30	1	±0.25	6	Resistive	SMG	EAR99
<a href="#">PBR-0003SMG</a>	0.01-3	1.5	±0.8	40	High Isolation	SMG	EAR99
<a href="#">PBR-0006SMG</a>	0.01-6	1.7	±0.8	35	High Isolation	SMG	EAR99
<a href="#">PBR-0012SMG</a>	0.01-12	1.7	±1	30	High Isolation	SMG	EAR99
<a href="#">MPD-0226SM</a>	2-26.5	1.5 to 3	±0.2	20	Wilkinson	4mm QFN	EAR99
<a href="#">PD-0434SM</a>	4-34	1.5	±0.25	20	High Isolation	SM	EAR99
<a href="#">PD-0530SMG</a>	5-30	1.5	±0.1	25	Wilkinson	SMG	EAR99
<a href="#">PD-0535SM</a>	5-35	1.5	±0.25	18	Wilkinson	SM	EAR99
<a href="#">MPDR-0070CSP2</a>	DC-70	1.5	±0.25	see table	Resistive	2.5mm CSP2	EAR99

**\*New Release**

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## CONNECTORIZED MODULES

### AMPLIFIERS

Part Number	Band (GHz)	Gain (dB)	Psat (dBm)	OIP3 (dBm)	Voltage (V)	Current (mA)	ECCN
<a href="#">ADM3-00001PD</a>	0.0003-18	37	+23	+31	See Datasheet	120, 120, 100	EAR99
<a href="#">ADM1-0026PA</a>	0.005-26.5	12	+20	+25	+3 to +7 VD and -0.3 to 0 VG	165	EAR99
<a href="#">ADM3-0022PA</a>	0.01-22	35	+30	+31	See Datasheet	115, 115, 450	EAR99
<a href="#">APM-7099PA</a>	0.1-20	14	+25	+24	+8 VC and +7 VB	72	EAR99
<a href="#">APM-7098PA</a>	0.1-22	14	+23	+24	+8 VC and +7 VB	44	EAR99
<a href="#">ADM2-0035PA</a>	0.1-35	23	+23	+30	+3 to +7 VD and -0.3 to 0 VG	320	EAR99
<a href="#">AMM-7473PC</a>	0.4-26.5	16	+25	+34	+5 to +7 VD and -0.7 to -0.6 VG	150	EAR99
<a href="#">APM-7516PA</a>	1-22	12.5	+23	+33	+5 VC and +5 VB	106	EAR99
<a href="#">APM-6849PA</a>	2-30	11	+21	+21	+7 VC and +7 VB	21	EAR99
<a href="#">ADM1-8007PC</a>	2-40	22	+22	+30	+3 to +6 VD and +3 to +6VG	213	EAR99
<a href="#">AMM-7199UC</a>	11-38	20.5	+21	+31	+3 to +4 VD and -0.6 to -0.4 VG	180	EAR99
<a href="#">AMM-7200UC</a>	12-46	18	+21.5	+29	+3 to +4 VD and -0.6 to -0.4 VG	180	EAR99
<a href="#">AMM-6702(UC/UC5)</a>	20-55	24	+21	+27	+3 to +4 VD and -0.6 to -0.4 VG	180/230	EAR99
<a href="#">AMM-8211UC5</a>	22-57	13	+21	+27	+3.5 to +5.5 VB	175	EAR99
<a href="#">AMM-7203UC</a>	30-60	11.5	+16	+21	+1.5 to +3 VD and -0.6 to -0.4 VG	80	EAR99
<a href="#">A-3567UC</a>	35-67	18	+20	+26	+3 to +4 VD and -0.6 to -0.4 VG	300	EAR99
<a href="#">AMM-0001M</a>	45-95	11	+18	-	+1.5 to 4V VD and -1.5V to 0V VG	350	3A001.b.4.e.2

### AMPLIFIERS, Gain Block & Low Noise

Part Number	Band (GHz)	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Voltage (V)	Current (mA)	ECCN
<a href="#">ADM-8344PC</a>	DC-18	18	1.4	+18	+27	+5 VD	103	EAR99
<a href="#">ADM-8558PC</a>	DC-20	15	2.2	+14	+23	+6 VD	50	EAR99
<a href="#">ADM-8622PC</a>	0.0003-10	15	2.1	+13	+27	+3.3 VD	42	EAR99
<a href="#">ADM1-8096PC</a>	0.09-6	22.5	1.5	+23	+35	+5 VD	84	EAR99
<a href="#">ADM1-8095PC</a>	0.09-10	18	1.6	+18.5	+32	+5 VD	57	EAR99
<a href="#">ADM-8624PC</a>	0.2-20	10.5	3	+13.5	+26	+5 VD	40	EAR99
<a href="#">ADM-8556PC</a>	6-20	23	1.7	+17	+26	+3 VD	67	EAR99

#### \*New Release

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**BALUNS**

Part Number	Band (GHz)	Amp Bal (dB)	Phase Bal (°)	Isolation (dB)	Turns Ratio	Total Insertion Loss as a Mode Converter (dB)	ECCN
<a href="#">BAL-0003</a>	0.0002-3	0.05	1	8	1:2	4	EAR99
<a href="#">BALH-0003</a>	0.0002-3	0.1	1	7	1:1	1.5	EAR99
<a href="#">BAL-0006</a>	0.0002-6	0.05	1	9	1:2	4.5	EAR99
<a href="#">BALH-0006</a>	0.0002-6	0.1	1	8	1:1	2.5	EAR99
<a href="#">BAL-0010</a>	0.0002-10	0.2	2	9	1:2	5	EAR99
<a href="#">BALH-0010</a>	0.0002-10	0.2	2	8	1:1	2.5	EAR99
<a href="#">BAL-0106</a>	1.2-6	0.1	2	6	1:2	0.6	EAR99
<a href="#">BAL-0212</a>	2.6-12	0.1	2	6	1:2	1	EAR99
<a href="#">BAL-0520</a>	5-20	0.2	3	6	1:2	1.5	EAR99
<a href="#">EBAL-0026</a>	0.01-26	1.0	1	3	1:2	3	EAR99
<a href="#">BAL-0026</a>	0.0003-26.5	0.5	3	24	1:2	2.5	EAR99
<a href="#">BAL-0036</a>	0.0003-36	0.5	3	24	1:2	3	EAR99
<a href="#">EBAL-0040</a>	0.01-40	0.1	2	5	1:2	3	EAR99
<a href="#">BAL-0050</a>	0.0003-50	0.7	4	25	1:2	7	EAR99
<a href="#">EBAL-0050</a>	0.01-50	0.2	3	5	1:2	4	EAR99
<a href="#">BAL-0067</a>	0.0003-67	0.7	4	25	1:2	8.5	EAR99
<a href="#">EBAL-0067</a>	0.01-67	0.2	2	5	1:2	4	EAR99

**PULSE INVERTERS, Broadband, Fast Rise Time**

Part Number	Band (GHz)	Loss (dB)	Rise/Fall Time (ps)	ECCN
<a href="#">INV-0026</a>	0.0001-26.5	2	13	EAR99
<a href="#">INV-0040</a>	0.0001-40	2.5	13	EAR99
<a href="#">INV-0065</a>	0.0001-65	5	12	EAR99

**\*New Release**

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## BIAS TEES

Part Number	Band (GHz)	DC Voltage (V)	DC Current (A)	Insertion Loss (dB)	ECCN
<a href="#">BT-0018</a>	0.00004-18	30	0.5	0.6	EAR99
<a href="#">BTN1-0018</a>	0.0005-18	50	1	0.7	EAR99
<a href="#">BTN2-0018</a>	0.003-18	50	2	0.7	EAR99
<a href="#">BT-0025</a>	0.00004-25	30	0.5	0.8	EAR99
<a href="#">BT-0026</a>	0.01-26.5	30	0.5	0.8	EAR99
<a href="#">BT1-0026</a>	0.0002-26.5	50	1	1	EAR99
<a href="#">BT2-0026</a>	0.0002-26.5	50	2	1	EAR99
<a href="#">BTN1-0026</a>	0.0005-26.5	50	1	1	EAR99
<a href="#">BTN2-0026</a>	0.003-26.5	50	2	1	EAR99
<a href="#">BT-0040</a>	0.000004-40	30	0.5	1.5	EAR99
<a href="#">BTN-0040</a>	0.00004-40	30	0.5	1.5	EAR99
<a href="#">BT1-0040</a>	0.0002-40	50	1	1.5	EAR99
<a href="#">BT2-0040</a>	0.0002-40	50	2	1.5	EAR99
<a href="#">BTN1-0040</a>	0.0005-40	50	1	1.5	EAR99
<a href="#">BTN2-0040</a>	0.003-40	50	2	1.5	EAR99
<a href="#">BT-0050</a>	0.0002-50	30	0.5	1.8	EAR99
<a href="#">BTN-0050</a>	0.0002-50	30	0.5	1.8	EAR99
<a href="#">BT1-0050</a>	0.0002-50	50	1	1.5	EAR99
<a href="#">BT2-0050</a>	0.0002-50	50	2	1.5	EAR99
<a href="#">BTN1-0050</a>	0.0005-50	50	1	1.5	EAR99
<a href="#">BTN2-0050</a>	0.003-50	50	2	1.5	EAR99
<a href="#">BT-0065</a>	0.000004-65	30	0.5	1.8	EAR99
<a href="#">BTN-0065</a>	0.00004-65	30	0.5	2.0	EAR99

## COUPLERS, Elite Stripline Directional

Part Number	Band (GHz)	Coupling (dB)	IL Corrected Directivity (dB)	Flatness (dB)	VSWR	ECCN
<a href="#">CE10-0R620T</a>	0.6-20	10	27	±0.2	1.07	EAR99
<a href="#">CE10-0R640(T)</a>	0.6-40	10	24/22	±0.2	1.07/1.08	EAR99
<a href="#">CE10-1R520(T)</a>	1.5-20	10	32	±0.25	1.07	EAR99
<a href="#">CE10-1R540(T)</a>	1.5-40	10	26/22	±0.25	1.07	EAR99
<a href="#">CE13-0220T</a>	2-20	13	30	±0.15	1.07	EAR99
<a href="#">CE13-0240(T)</a>	2-40	13	29/27	±0.15	1.07/1.08	EAR99
<a href="#">CE16-0220T</a>	2-20	16	32	±0.1	1.07	EAR99
<a href="#">CE16-0240(T)</a>	2-40	16	30/29	±0.1	1.07	EAR99
<a href="#">CE20-0R620T</a>	0.6-20	20	26	±0.15	1.07	EAR99
<a href="#">CE20-1R640(T)</a>	0.6-40	20	27/24	±0.15	1.07	EAR99
<a href="#">CE20-0220T</a>	2-20	20	30	±0.1	1.07	EAR99
<a href="#">CE20-0R240(T)</a>	2-40	20	33/28	±0.1	1.05/1.07	EAR99

**\*New Release**

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**COUPLERS, High Directivity Bridge**

Part Number	Band (GHz)	Coupling (dB)	Directivity (dB)	VSWR	ECCN
<a href="#">CBR16-0003</a>	0.0002-3	16	40	1.1	EAR99
<a href="#">CBR16-0006</a>	0.0002-6	16	38	1.15	EAR99
<a href="#">CBR16-0012</a>	0.0002-12	16	32	1.25	EAR99
<a href="#">CBR17-0026</a>	0.0002-26	17	23	1.22	EAR99

**COUPLERS, Stripline Directional**

Part Number	Band (GHz)	Coupling (dB)	Directivity (dB)	Flatness (dB)	VSWR	ECCN
<a href="#">C09-0R412</a>	0.45-12	9	22	±0.7	1.15	EAR99
<a href="#">C09-0R418</a>	0.45-18	9	22	±0.7	1.15	EAR99
<a href="#">C09-0R426</a>	0.45-26.5	9	22	±0.7	1.15	EAR99
<a href="#">C09-0R430</a>	0.45-30	9	20	±0.7	1.15	EAR99
<a href="#">C20-0R612</a>	0.6-12	20	22	±0.6	1.2	EAR99
<a href="#">C10-0116</a>	1-16	10	20	±0.5	1.15	EAR99
<a href="#">C20-0116</a>	1-16	20	20	±0.6	1.15	EAR99
<a href="#">C20-0R518</a>	0.5-18	20	22	±0.75	1.2	EAR99
<a href="#">C20-0R520</a>	0.5-20	20	22	±0.75	1.2	EAR99
<a href="#">C13-0126</a>	1-26.5	13	20	±0.6	1.15	EAR99
<a href="#">C16-1R718</a>	1.7-18	16	20	±0.3	1.15	EAR99
<a href="#">C16-1R726</a>	1.7-26.5	16	20	±0.4	1.15	EAR99
<a href="#">C10-0226</a>	2-26.5	10	22	±0.6	1.15	EAR99
<a href="#">C20-0226</a>	2-26.5	20	22	±0.75	1.25	EAR99
<a href="#">C13-0140</a>	1-40	13	16	±0.1	1.2	EAR99
<a href="#">C20-0240</a>	2-40	20	17	±0.75	1.3	EAR99
<a href="#">C13-0150</a>	1-50	13	16	±0.75	1.2	EAR99
<a href="#">C10-0450</a>	4-50	10	15	±0.5	1.35	EAR99
<a href="#">C10-0667</a>	6-67	10	17	±0.8	1.2	EAR99
<a href="#">C16-0667</a>	6-67	16	17	±0.9	1.25	EAR99
<a href="#">C20-0667</a>	6-67	20	17	±0.8	1.25	EAR99
<a href="#">MC10-25110M2</a>	25-110	10	19.5	+0.2	1.43	EAR99

**COUPLERS, Low Loss High Power**

Part Number	Band (GHz)	Coupling (dB)	Directivity (dB)	Loss (dB)	Average Power Handling (W)	ECCN
<a href="#">C17-0R506</a>	0.5-6	17	20	0.4	120	EAR99
<a href="#">C17-0R512</a>	0.5-12	17	20	0.65	80	EAR99
<a href="#">C17-0R518</a>	0.5-18	17	20	1	60	EAR99
<a href="#">CA-18</a>	DC-18	> 30	22	0.35	200	EAR99
<a href="#">CA-26</a>	DC-26.5	> 27	24	0.35	50	EAR99
<a href="#">CA-40</a>	DC-40	> 27	24	0.5	20	EAR99
<a href="#">CA-50</a>	DC-50	> 27	24	0.5	15	EAR99
<a href="#">C-0250</a>	2-50	12	15	0.7	10	EAR99
<a href="#">C-0265</a>	2-65	12	15	0.7	10	EAR99

**COUPLERS, Dual Directional**

Part Number	Band (GHz)	Coupling (dB)	Directivity (dB)	Flatness (dB)	VSWR	ECCN
<a href="#">CD10-0106</a>	0.7-6.3	10	25	±0.6	1.14	EAR99
<a href="#">CD10-0114</a>	0.7-14.7	10	23	±0.6	1.17	EAR99

**COUPLERS, Pick-Off Tees**

Part Number	Band (GHz)	Pick-Off Loss (dB)	Insertion Loss (dB)	ECCN
<a href="#">PT-0020</a>	DC-20	16	2	EAR99
<a href="#">PT-0030(A)</a>	DC-30	16	2	EAR99

**COUPLERS, 90° Quadrature Hybrids**

Part Number	Band (GHz)	Amp Bal (dB)	Phase Bal (°)	Excess Loss (dB)	Isolation (dB)	ECCN
<a href="#">QH-0R518</a>	0.5-18	±0.5	±3	1.5	20	EAR99
<a href="#">QH-0R71R3</a>	0.65-1.3	±0.3	±3	0.5	16	EAR99
<a href="#">QH-0R714</a>	0.7-14.5	±0.2	±2	1.2	22	EAR99
<a href="#">MQS-0209UB</a>	2-9	±0.5	±3	2	16	EAR99
<a href="#">MQS-0218UA</a>	2-18	±1	±3	1.4	17	EAR99
<a href="#">QH-0226</a>	2-26.5	±0.25	±2	2	22	EAR99
<a href="#">MQH-2R58R5UB</a>	2.5-8.5	±0.4	±3	2	23	EAR99
<a href="#">MQH-3R510UB</a>	3.5-10	±0.4	±1.5	1.8	25	EAR99
<a href="#">MQS-0418UA</a>	4-18	±0.4	±0.5	1.5	20	EAR99
<a href="#">QH-0440</a>	4-40	±0.4	±5	2	18	EAR99
<a href="#">MQH-0517UB</a>	5-17	±0.5	±6	1.6	23	EAR99
<a href="#">QH-0550</a>	5-50	±0.6	±5	1	22	EAR99
<a href="#">QH-0867</a>	8-67	±0.6	±6	1.2	18	EAR99
<a href="#">MQH-40110M2</a>	40-110	1	5	2.5	18	EAR99

**EQUALIZERS, Positive-Slope**

Part Number	Band (GHz)	Loss at DC (dB)	Typ Return Loss (dB)	ECCN
EQX-26	DC-26	<a href="#">3, 6</a>	21, 15	EAR99
EQX-40	DC-40	<a href="#">3, 6</a>	18	EAR99
MEQX-26AS	DC-26.5	<a href="#">3, 6, 10</a>	18, 20, 20	EAR99
MEQ10-50AU	DC-50	<a href="#">10</a>	15	EAR99
Additional MMIC Equalizer modules available upon request.				EAR99

**FIXED FILTERS: Lowpass, Highpass, Bandpass, Diplexer**

The filters below are a small sample of Marki Microwave's extensive portfolio. Visit [markimicrowave.com](http://markimicrowave.com) for the full catalog of filters.

**LOWPASS**

Part Number	3dB Cutoff (GHz)	Passband Insertion Loss (dB)	Passband Return Loss (dB)	Frequency @ 50 dB Supp (GHz)	ECCN
<a href="#">FLP-0490</a>	4.9	0.6	30	9.3	EAR99
<a href="#">FLP-2650</a>	26.5	1.5	15	36.5	EAR99
<a href="#">FLP-5000</a>	50	2	15	62	EAR99

**\*New Release**

All electrical specifications given are typical values.

Visit [markimicrowave.com](http://markimicrowave.com) for more connectorized components.

## HIGHPASS

Part Number	Cutoff (GHz)	30dB Rejection Freq (GHz)	50dB Rejection Freq (GHz)	80dB Rejection Freq (GHz)	ECCN
<a href="#">FH-1700</a>	17	14	11.5	6	EAR99
<a href="#">FH-2600</a>	26	21.5	18	11	EAR99
<a href="#">FH-5500</a>	55	51	45	35	EAR99

## BANDPASS

Part Number	Center Freq (GHz)	Low Freq 1dB Cutoff (GHz)	High Freq 1dB Cutoff (GHz)	Insertion Loss @ Center Freq (GHz)	ECCN
<a href="#">FB-0905</a>	9.05	8.45	9.65	3.00	EAR99
<a href="#">MFB-3475U</a>	34.75	28.90	39.40	2.80	EAR99
<a href="#">FB-4000</a>	40.00	34.40	45.60	3.00	EAR99
<a href="#">MFBC-00017M</a>	42.00	34.50	49.50	2.00	EAR99
<a href="#">MFBC-00008M</a>	44.50	36.70	51.10	2.15	EAR99
<a href="#">MFBC-00018M</a>	53.75	44.50	62.50	2.15	EAR99
<a href="#">MFBC-00009M</a>	55.60	46.50	63.50	2.25	EAR99
<a href="#">MFBC-00019M</a>	70.00	58.30	77.70	2.85	EAR99
<a href="#">MFBC-00020M</a>	93.50	77.35	107.80	3.60	EAR99

## DIPLEXERS

Part Number	Passband Low (GHz)	Passband High (GHz)	Isolation (dB)	ECCN
<a href="#">MDPX-0305</a>	DC-3	5-26.5	47	EAR99
<a href="#">MDPX-0407</a>	DC-4	7-26.5	38	EAR99
<a href="#">MDPX-0609</a>	DC-6	9-26.5	58	EAR99

## IQ MIXERS

Part Number	RF/LO (GHz)	IF (GHz)	Conversion Loss (dB)	Image Rej (dBc)	L-R Isolation (dB)	ECCN
<a href="#">MMIQ-0205HXA</a>	1.75-5	DC-2	8	32	61	EAR99
<a href="#">MMIQ-0218(L/H)XPC</a>	2-18	DC-3	8/7.5	27/35	58/53	EAR99
<a href="#">MMIQ-0416(L/H)S</a>	4-16	DC-6	9	28/29	58/59	EAR99
<a href="#">MMIQ-0520(L/H)S</a>	5-20	DC-6	9	35	46	EAR99
<a href="#">MMIQ-0626(L/H)S</a>	6-26	DC-6	9	35	41	EAR99
<a href="#">MMIQ-1037H</a>	10-37	DC-12	9	25	47	EAR99
<a href="#">MMIQ-1040(L/S)S</a>	10-40	DC-12	9	25	47/44	EAR99
<a href="#">MMIQ-1865(L/H/S)UB</a>	18-65	DC-23	9	35	49/48/50	EAR99
<a href="#">MMIQ-4067LU</a>	40-67	DC-20	9	35	33	EAR99
<a href="#">MMIQ-40100(L/H)M</a>	40-100	DC-20	10	30	see datasheet	EAR99
<a href="#">MMIQ-30120HM<sup>1</sup></a>	30-120	DC-30	8.5	27	40	EAR99

<sup>1</sup>Differential IF IQ Mixer

### \*New Release

All electrical specifications given are typical values.  
Visit [markimicrowave.com](http://markimicrowave.com) for more connectorized components.



## MIXERS, Double Balanced

Part Number	RF/LO (GHz)	IF (GHz)	Conversion Loss (dB)	IIP3 (dBm)	LO Drive (dBm)	ECCN
<a href="#">MM1-0115HS</a>	1-15	DC-2.5	7.5	+21	+17	EAR99
MM1-0212(L/H/S)S	2-12	DC-3	8/8.5/8.5	+13/+23/+26	+9/+15/+20	EAR99
MM1-0222(L/H)S	2-22	DC-3.5	8.5	+11.5/+20	+9/+15	EAR99
MM1-0312(H/S)S	3-12	DC-4.5	7.5	+19/+24	+15/+20	EAR99
MM1-0320(L/H)S	3-20	DC-4	8	+10/+20	+7/+15	EAR99
MM1-0330(H/T)S	3-30	DC-5	7/9	+21/+32	+19/+23	EAR99
<a href="#">MM1-0424SS</a>	4.5-24	DC-4	8	+25	+20	EAR99
MM1-0626(H/S)S	6-26.5	DC-9	7.5/8	+21/+25	+15/+20	EAR99
MM1-0832(L/H)S	8-32	DC-12	8/7.6	+14/+23	+9/+15	EAR99
MM1-1044(L/H)S	10-44	DC-14	7.6	+13/+22	+9/+15	EAR99
<a href="#">MM1-1140HS</a>	11-40	DC-12	8	+21	+15	EAR99
<a href="#">MM1-1240SS</a>	12-40	DC-12	8	+25	+20	EAR99
MM1-1467(L/H)S	14-67	DC-21	7	+12/+17.5	+11/+15	EAR99
MM1-1850(H/S)S	18-50	DC-20	8/8.5	+21/+25	+15/+20	EAR99
MM1-1857(L/H)S	18-57	DC-21	8/7.5	+13/+20	+9/+13	EAR99
<a href="#">MM1-2567LS</a>	25-67	DC-30	9	+9	+13	EAR99
<a href="#">MM1-30100LM</a>	30-100	DC-20	8.5	see datasheet	+14	EAR99
<a href="#">MMH-35120HM</a> <sup>1</sup>	35-120, 12-40	DC-14	18	+7	+15	3A001.b.7.c.1

<sup>1</sup>Harmonic Mixer

## MIXERS, Triple Balanced

Part Number	RF/LO (GHz)	IF (GHz)	Conversion Loss (dB)	IIP3 (dBm)	LO Drive (dBm)	ECCN
<a href="#">MT3A-0113HPA</a> <sup>1</sup>	1-13	0.5-8.5	9.5	+28	+12	EAR99
<a href="#">MT3L-0113HS</a>	1.5-13	0.25-5	8.5	+31	+20	EAR99
MT3H-0113(L/H)S	1.5-13	0.8-8.5	8/8.5	+20/+28	+15/+20	EAR99
<a href="#">T3-18GLS</a>	0.01-18	0.001-10	7.5	+25	+20	EAR99
<a href="#">T3H-18GLS</a>	0.01-18	0.01-18	9.5	+30	+20	EAR99
<a href="#">T3-20GLS</a>	0.01-20	0.001-10	7.5	+30	+20	EAR99
T3H-20G(L/I)S	0.01-20	0.01-20	9.5	+30	+20	EAR99
<a href="#">T3-0838GLN</a>	8-38	0.01-10	8	+30	+20	EAR99
<a href="#">T3-1040GLN</a>	10-40	1-18	8	+25	+20	EAR99
MM2-0530(L/H)S	5-30	2-20	10/9	+15/+21	+15/+20	EAR99

<sup>1</sup>Integrated low phase noise driver amplifier

## PASSIVE MULTIPLIERS & NON LINEAR TRANSMISSION LINES

Part Number	Type	Input (GHz)	Output (GHz)	1F Suppression (dBc)	3F Suppression (dBc)	ECCN
<a href="#">MMD-0415HS</a>	Doubler	2-7.5	4-15	27	36	EAR99
MMMD-1030(L/H)S	Doubler	5-15	10-30	38/41	46/51	EAR99
<a href="#">MMD-1250HU</a>	Doubler	6-25	12-50	32	40	EAR99
<a href="#">MMD-1648LS</a>	Doubler	8-24	16-48	44	69	EAR99
MMMD-2060(L/H)U	Doubler	10-30	20-60	37/38	41/40	EAR99
<a href="#">MMD-20100HM</a>	Doubler	10-50	20-100	24.5	33	3A001.b.7.b.1
<a href="#">MMD-3567LU</a>	Doubler	17.5-33.5	35-67	38	44	EAR99
<a href="#">MMD-3580LU-KW</a>	Doubler	17.5-40	35-80	38	44	EAR99
<a href="#">MMD-40120HM</a>	Doubler	20-60	40-120	30	40	3A001.b.7.b.1
<a href="#">MMQ-40125HM</a>	Quadrupler	10-31.25	40-125	19	12	3A001.b.7.b.1
<a href="#">NLTL-6273S</a>	Comb Generator	0.7-5	0.7-40	-	-	EAR99
<a href="#">NLTL-6275U/USW</a>	Comb Generator	3-15	3-85	-	-	EAR99

**ACTIVE MULTIPLIERS**

Part Number	Input (GHz)	Output (GHz)	Input (dBm)	Output (dBm)	ECCN
<a href="#">ADA-0416</a>	2-8	4-16	0 to +6	+16	EAR99
<a href="#">ADA-1030</a>	5-15	10-30	0 to +6	+16	EAR99
<a href="#">AQA-2156</a>	5.25-14	21-56	-2 to +6	+20	EAR99
<a href="#">ADA-2052</a>	10-26	20-52	-6 to +2	+16	EAR99

**POWER DIVIDERS, High Isolation**

Part Number	Band (GHz)	Loss (dB)	Amplitude Balance (dB)	Isolation (dB)	ECCN
<a href="#">PBR-0003</a>	.0003-3	1.25	±0.4	45	EAR99
<a href="#">PBR-0006</a>	.0003-6	1.5	±0.5	40	EAR99
<a href="#">PBR-0012</a>	.0003-12	1.5	±0.6	35	EAR99

**POWER DIVIDERS, Wilkinson 1:2**

Part Number	Band (GHz)	Loss (dB)	Amplitude Balance (dB)	Phase Balance (°)	Isolation (dB)	ECCN
<a href="#">PD-0R413</a>	0.4-13.2	1	±0.05	±1	24	EAR99
<a href="#">PD-0R426</a>	0.4-26	2	±0.05	±2	24	EAR99
<a href="#">PD-0R510</a>	0.5-10	0.9	±0.1	±1	22	EAR99
<a href="#">PD-0R618</a>	0.6-18	1	±0.05	±1	22	EAR99
<a href="#">PD-0R636</a>	0.6-36	2	±0.1	±3	22	EAR99
<a href="#">PD-0109</a>	1-9	0.75	±0.1	±1	22	EAR99
<a href="#">PD-0126</a>	1-26	1	±0.1	±3	20	EAR99
<a href="#">PD-0140</a>	1-40	1.5	±0.2	±2	20	EAR99
<a href="#">PD-0150</a>	1-50	2	±0.25	±3	20	EAR99
<a href="#">PD-0165</a>	1-65	5	±0.25	±3	20	EAR99
<a href="#">PD-0218</a>	2-18	1	±0.2	±2	22	EAR99
<a href="#">PD-0220</a>	2-20	1	±0.2	±2	22	EAR99
<a href="#">PD-0426</a>	4-26.5	0.8	±0.2	±2	18	EAR99
<a href="#">PD-0440</a>	4-40	1	±0.2	±3	18	EAR99
<a href="#">PD-0450</a>	4-50	1.2	±0.5	±5	18	EAR99
<a href="#">PD-0465</a>	4-65	2	±0.5	±5	18	EAR99
<a href="#">MPDW-10110M2</a>	10-110	3	±0.25	±3	22	EAR99

**POWER DIVIDERS, Wilkinson 1:3**

Part Number	Band (GHz)	Loss (dB)	Amplitude Balance (dB)	Phase Balance (°)	Isolation (dB)	ECCN
<a href="#">PD3-0R412</a>	0.4-12	1.5	±0.1	±2	23	EAR99
<a href="#">PD3-0R616</a>	0.6-16	1.5	±0.1	±2	24	EAR99
<a href="#">PD3-0126</a>	1.5-26.5	1.5	±0.3	±4	24	EAR99

**POWER DIVIDERS, Wilkinson 1:4**

Part Number	Band (GHz)	Loss (dB)	Amplitude Balance (dB)	Phase Balance (°)	Isolation (dB)	ECCN
<a href="#">PD4-0R518</a>	0.5-18	1.5	±0.25	±3	20	EAR99
<a href="#">PD4-0R526</a>	0.5-26.5	2.5	±0.25	±3	19	EAR99
<a href="#">PD4-0R532</a>	0.5-32	2.5	±0.3	±4	19	EAR99
<a href="#">PD4-0120</a>	1-20	1.5	±0.25	±3	20	EAR99
<a href="#">PD4-0126</a>	1-26.5	1.5	±0.3	±3	20	EAR99
<a href="#">PD4-0140</a>	1-40	2.5	±0.4	±4	19	EAR99
<a href="#">PD4-0150</a>	1-50	4	±0.5	±5	20	EAR99
<a href="#">PD4-0218</a>	2-18	1.2	±0.2	±2	20	EAR99

## POWER DIVIDERS, Resistive 1:2

Part Number	Band (GHz)	Loss (dB)	Amplitude Balance (dB)	Phase Balance (°)	ECCN
<a href="#">PD-0010</a>	DC-10	0.25	±0.1	±1	EAR99
<a href="#">PD-0020</a>	DC-20	0.5	±0.2	±2	EAR99
<a href="#">PD-0030</a>	DC-30	0.5	±0.25	±2	EAR99
<a href="#">PD-0040</a>	DC-40	0.75	±0.25	±2	EAR99
<a href="#">MPDR-00110M2</a>	DC-110	1.5	±0.25	±7.5	EAR99

## ADAPTERS, High Performance

Part Number	Band (GHz)	Loss (dB)	VSWR	Description	ECCN
ADP-2429	DC-40	0.3	1.2	2.4(M/F) to 2.92(M/F)	EAR99
ADP-29	DC-40	0.3	1.2	2.92(M/F) to 2.92(M/F)	EAR99
ADP-24	DC-50	0.5	1.3	2.4(M/F) to 2.4(M/F)	EAR99
RA40	DC-40	0.3	1.4	2.92M to 2.92F	EAR99
RA50	DC-50	0.3	1.4	2.92M to 2.92F	EAR99

## ATTENUATORS, Precision-Grade

Part Number	Band (GHz)	Attenuation (dB)	Accuracy (dB)	Return Loss (dB)	ECCN
<a href="#">ATN06-0067(-2HV/-3HV)</a>	DC-67	6.4	see datasheet	23	EAR99
<a href="#">ATN10-0067(-2HV/-3HV)</a>	DC-67	10.5	see datasheet	22	EAR99
<a href="#">ATN06-00110(-2W/-3W)</a>	DC-110	6.5	see datasheet	20	EAR99
<a href="#">ATN10-00110(-2W/-3W)</a>	DC-110	10.5	see datasheet	20	EAR99

## DC BLOCKS, Broadband

Part Number	Band (GHz)	Loss (dB)	DC Voltage (V)	Rise Time (ps)	Group Delay (ps)	ECCN
DCZ(M-F)29(M-F)29	.000004-40	0.7	16	6	75	EAR99
DCZ(M-F)24(M-F)24	.000004-50	0.7	16	6	75	EAR99

## LIMITERS

Part Number	Band (GHz)	Loss (dB)	Flat Leakage (dBm)	Peak Power CW (W)	Peak Power Pulsed (W)	P1dB (dBm)	ECCN
<a href="#">HLM-8011U</a>	DC-30	0.8	+7@30GHz	1	4.5	+10	EAR99
<a href="#">HLM-40U</a>	DC-40	1	+16@20GHz	4	20	15	EAR99

## TERMINATIONS

Part Number	Band (GHz)	Impedance (Ω)	Return Loss (dB)	ECCN
T(M/E)50-110M	DC-110	50	15	EAR99

## THUMBWHEEL

Part Number	Description	ECCN
<a href="#">TW-1</a>	quick, secure, wrenchless connection for SMA, 2.92mm and 2.4mm	EAR99

### \*New Release

All electrical specifications given are typical values.  
Visit [markimicrowave.com](http://markimicrowave.com) for more connectorized components.

## MARKI MICROWAVE PART NUMBER DECODER RING

Example: MT3H-0113LCQG-2

Prefix=MT3H, Identifier=0113, Diode=L, Package=CQG, Suffix=-2

### PREFIX

1 to 4 letters to identify the product category (**BAL**=balun, **PD**=power divider, etc)

- MMICs: M prefix (ex: **MBAL**, **MM1**, **MT3**)
- Modifiers: ex: MT3**A** Integrated LO Driver Amplifier
- EVAL, EVB: evaluation boards of SMT components (ex: **EVAL**-MM1-0212H)

### IDENTIFIER

Most part numbers include a 4-digit string that identifies start/stop frequencies

(ex: **0416** = 4 to 16 GHz), with a few exceptions:

- Exceptions: amplifiers and NLTs have the chip number instead of frequency band

### DIODE

Found on mixers, IQ mixers and multipliers. LO Drive is given at typical value.

- **L** diode: Vf=0.25V, LO Drive +5 to +15 dBm
- **H** diode: Vf=0.75V, LO Drive +11 to +20 dBm
- **S** diode: Vf=1.4V, LO Drive +17 to +23 dBm
- **T** diode: Vf=2V, LO Drive +20 to +27 dBm

### PACKAGES

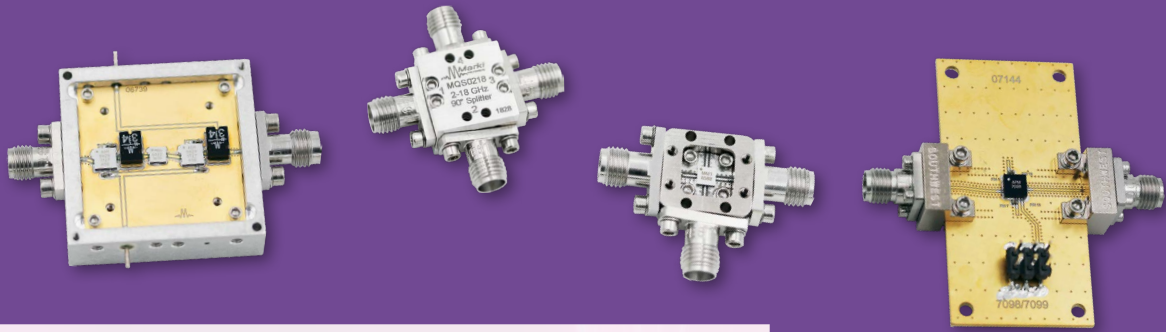
- MMIC SMTs: **SM** (surface mount), **PSM** (plastic substrate), **CSM** (ceramic substrate), **CSP1** (chip scale package), **LGA** (land grid array) or **CH** (chip/bare die)
- Hybrid surface mounts: **CTG**, **CQG**, **SM**, **SMG**, **SLG**, **SSG**, etc
- Connectorized
  - Sub-30GHz MMIC: typically **S**
  - mmWave modules: **M**, **M2**, **U**, **UA**, **UB**, **UC**, etc
- Evaluation boards: **EVAL**, **EVB**

### LAYOUT CONFIGURATION

- Mixers are generally offered in **-2** layout, but some are offered in a mirrored layout **-1** (ex: MM1-1467LCH-**1** and MM1-1467LCH-**2**)

**CONNECTOR OPTIONS:** swaps are available upon request

- SMA
- 2.92 mm
- 2.4 mm
- 1.85 mm
- 1 mm



# MARKI MICROWAVE

is proud to provide world-class support including direct access to engineers, downloadable non-linear models for ADS and Microwave Office, and evaluation modules for our MMIC bare die and surface mount products.

## Online Tech Support:

- Extensive Knowledge Base with Tech Notes
- Application Notes
- Detailed Technical Primers
- Spur Calculator, Return Loss Calculator & RF Design Tools
- Email us at [support@markimicrowave.com](mailto:support@markimicrowave.com)

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