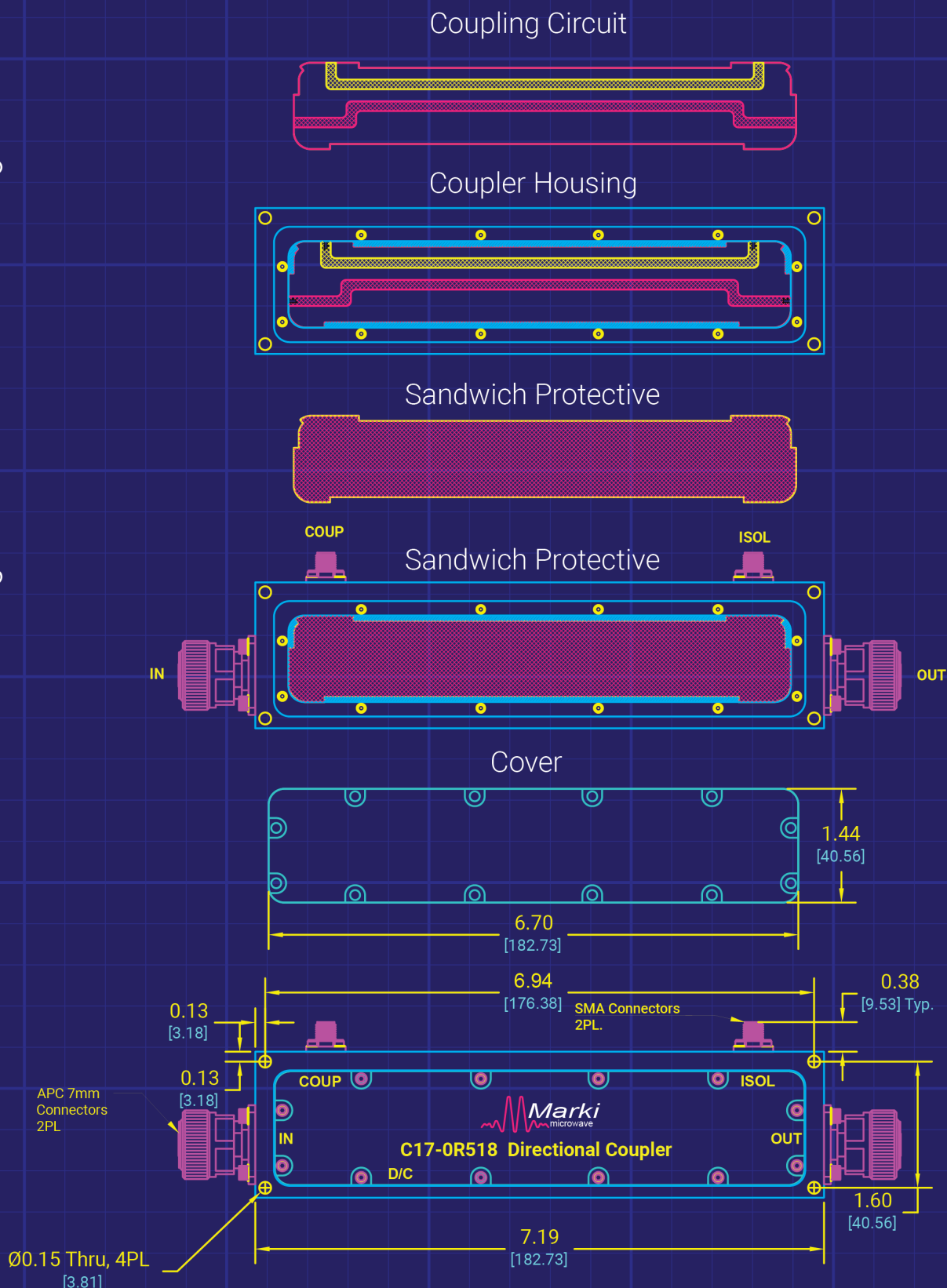


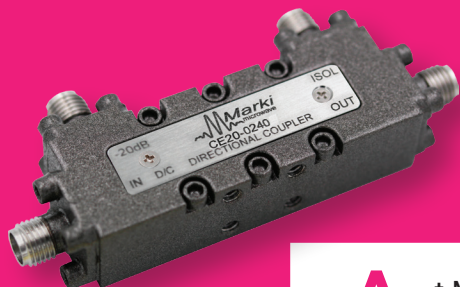


RF, Microwave & mmWave Components | Bare Die, Surface Mount & Connectorized

DC to 130GHz

PRODUCT CATALOG





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

PERFORMANCE

By combining time-honored fabrication and assembly techniques with a modern design approach, we are able to push the technological boundaries of broadband RF and microwave components like never before. With proprietary innovations such as our T3 mixer 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.



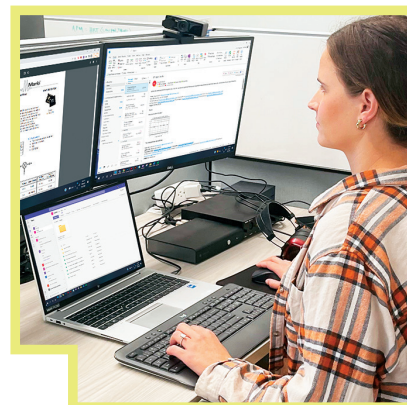
RELIABILITY

In this modern world of outsourcing and commodity pricing, Marki Microwave has prospered by retaining all design, manufacturing, and testing in its Morgan Hill, California facility. We continually invest in advanced test and manufacturing capabilities to ensure products are maintained at the highest level of performance and workmanship. We are ISO9001:2015, ITAR, and REACH compliant.



SUPPORT

We pride ourselves on providing the best technical support of any company in the industry. We offer a full library of application notes, tech notes, web apps, comprehensive datasheets, and device models for ADS and Microwave Office. To further our domain expertise and empower our customers, we've invested heavily in characterizing the performance of our components and the optimization of multi-component solutions.



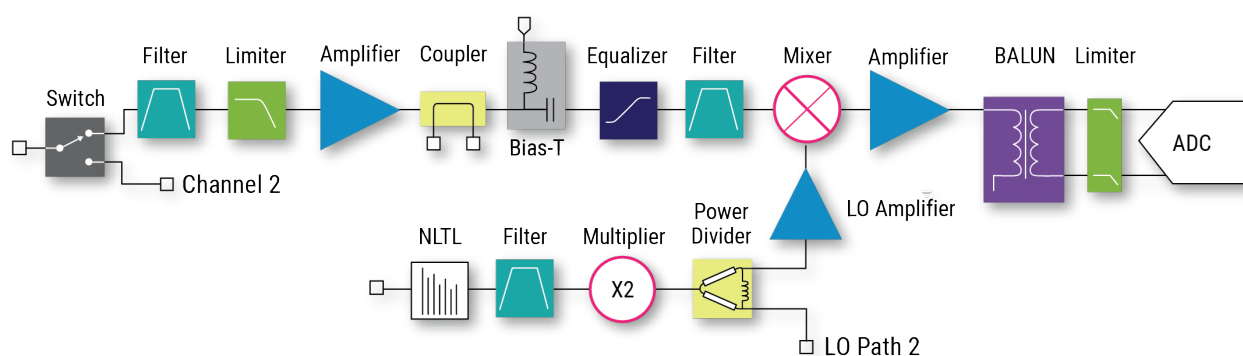
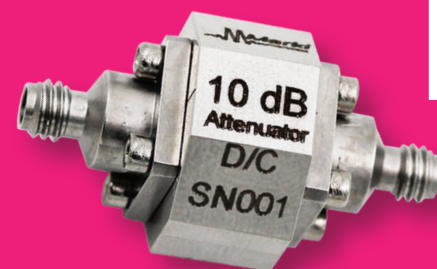
CAPABILITIES

For over 30 years, Marki Microwave has solved its customers' most complex and challenging problems by creating a robust portfolio of performance shattering RF and microwave components.

Marki Microwave is unique in its ability to develop traditional hybrid and MMIC solutions that are co-developed with the package, an integral element in any broadband, high frequency design, without sacrificing key performance parameters.

Founded in 1991 with the goal to develop the best mixers in the industry, Marki Microwave now has the highest performance portfolio of broadband mixers, spanning frequencies from 10 MHz to 130 GHz+ in die, surface mount and connectorized form factors. Leveraging this expertise, combined with continuous innovation in design and investments in infrastructure and headcount, the company has since expanded its microwave component portfolio, which includes a similarly superior family of broadband baluns.

Today, Marki Microwave is a single source for high performance, broadband microwave products, supporting multiple form factors including die, surface mount and connectorized solutions for the entire RF block diagram.



As demands from RF and microwave markets continue to evolve and the supply base consolidates, Marki Microwave remains dedicated to building beyond performance barriers, expanding its catalog and empowering the industry to build next-generation systems.

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BARE DIE

AMPLIFIERS, LO Driver

Part Number	Band (GHz)	Gain (dB)	Psat (dBm)	Voltage (V)	Current (mA)
ADM-5931CH	DC-28	11	18	+3 to +7 VD and -0.3 to 0 VG	85
ADM-5974CH	DC-35	14	22	+3 to +7 VD and -0.3 to 0 VG	160
APM-6849CH [*]	2-30	11	21	+5 VC and +5 VB	23
APM-7099CH [*]	.01-20	14	25	+5 to +8 VC and +5 to +8 VB	72
APM-7098CH [*]	0.1-22	14	23	+5 to +8 VC and +5 to +8 VB	44
AMM-7199CH	11-38	20.5	21	+3 to +4 VD and -0.6 to -0.4 VG	180
AMM-7200CH	12-46	18	21.5	+3 to +4 VD and -0.6 to -0.4 VG	180
AMM-6702CH	20-55	28	22	+3 to +4 VD and -0.6 to -0.4 VG	200
AMM-7210CH	22-57	14.5	20.5	+3 to +4 VD and -0.6 to -0.4 VG	180
AMM-7203CH	30-60	11.5	16	+1.5 to +3 VD and -0.6 to -0.4 VG	80

^{*}Low Phase Noise

AMPLIFIERS, Gain Block

Part Number	Band (GHz)	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Voltage (V)	Current (mA)
AKA-1300D	DC-14	13	5	+14	+28	+3.8 VD	50
AKA-1310D	DC-14	13	5	+14	+28	+4.6 VD	50
AKA-1400D	DC-14	17	4	+15	+28	+3.8 VD	50
AKA-1500D	DC-14	19	4	+16	+28	+4.2 VD	50

BALUNS

Part Number	Band (GHz)	Amp Bal (dB)	Phase Bal (°)	Isolation (dB)	Impedance Ratio	Total Insertion Loss as a Mode Converter (dB)
MBAL-1440CH	14-40	0.2	1.1	13	1:2	3

EQUALIZERS, Positive Gain Slope

Part Number	Band (GHz)	Low Freq Attenuation (dB)	Typ Return Loss (dB)
MEQX-7ACH	DC-7	3, 6, 10 & 12.5	29, 29, 27, 27
MEQX-14ACH	DC-14	3, 6 & 10	23, 22, 24
MEQX-20ACH	DC-20	3, 5, 6, 7.5, 10 & 11	21, 22, 21, 23, 25, 23
MEQX-30ACH	DC-30	3, 6 & 10	20
MEQX-60ACH	DC-60	3, 6 & 10	15

*New Release

All electrical specifications given are typical values.

FILTERS

Part Number	Type	Center Freq (GHz)	1dB Passband (GHz)	Insertion Loss in Passband (dB)
MFB-1100CH	Bandpass	11	9.5-12.5	2.0
MFB-1600CH	Bandpass	16	12.6-18.6	1.5
MFB-2025CH	Bandpass	20.25	16.75-24.4	1.5
MFB-2400CH	Bandpass	24	21-27	1.5
MFB-2500CH	Bandpass	25	18-32	1.5
MFB-2625CH	Bandpass	26.25	21.5-30	1.5
MFB-3175CH	Bandpass	31.75	26.6-36.7	1.5
MFB-3300CH	Bandpass	33	26-40	1.5
MFB-3325CH	Bandpass	33.25	32-34.3	2.5
MFB-3450CH	Bandpass	35	24-45	1.5
MFB-3475CH	Bandpass	34.75	29.95-40	2.0
MFB-5350CH	Bandpass	53.5	40-67	1.2

DIPLEXERS

Part Number	Passband Low (GHz)	Passband High (GHz)	Isolation (dB)
MDPX-0305CH*	DC-3	5-26.5	40
MDPX-0407CH*	DC-4	7-26.5	38
MDPX-0609CH*	DC-6	9-26.5	51
MDPX-2330CH	DC-23	30-60	20
MDPX-2734CH	DC-27	34-60	20

HYBRIDS, 90° Quadrature

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

IQ MIXERS

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

*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)
MM1-0212(L/H/S)CH	2-12	DC-3	8/8.5/8.5	+13/+23/+26	+9/+15/+20
MM1-0222(L/H)CH	2-22	DC-3.5	8.5	+12/+20	+9/+15
MM1-0312(H/S)CH	3-12	DC-4.5	7.5	+19/+24	+15/+20
MM1-0320(L/H)CH	3-20	DC-4	8	+10/+20	+7/+15
MM1-0330TCH*	3-30	DC-5	9	+32	+23
MM1-0424SCH	4.5-24	DC-4	8	+25	+20
MM1-0626(H/S)CH	6-26.5	DC-9	7.5/8	+21/+25	+15/+20
MM1-0832(L/H)CH	8-32	DC-12	8/7.5	+14/+23	+9/+15
MM1-1044(L/H)CH	10-44	DC-14	7.5	+13/+22	+9/+15
MM1-1140HCH	11-40	DC-12	8	+21	+15
MM1-1240SCH	12-40	DC-12	8	+25	+20
MM1-1467(L/H)CH	14-67	DC-21	7	+12/+18	+13/+15
MM1-1850(H/S)CH	18-50	DC-20	8/8.5	+21/+25	+15/+20
MM1-1857(L/H)CH	18-57	DC-21	8/7.5	+13/+20	+9/+13
MM1-2567LCH	25-67	DC-30	9	+9	+13
MM1-30100LCH*	30-100	DC-20	8.5	see datasheet	+14
MM1-35130HCH*	35-130	DC-50	8	see datasheet	+12

MIXERS, Triple Balanced

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

¹Integrated low phase noise driver amplifier

PASSIVE MULTIPLIERS

Part Number	Type	Input (GHz)	Output (GHz)	1F Supp (dBc)	3F Supp (dBc)
MMD-1030HCH	Doubler	5-15	10-30	41	47
MMD-1250HCH	Doubler	6-25	12-50	32	40
MMD-1648LCH	Doubler	8-24	16-48	44	69
MMD-2060(L/H)CH	Doubler	10-30	20-60	37	40
MMD-3580LCH	Doubler	17.5-40	35-80	38	44
MMD-20100HCH	Doubler	10-50	20-100	24.5	33
MMQ-40125HCH	Quadrupler	10-31.25	40-125	19	12
NLTL-6273CH	Comb Generator	0.7-5	0.7-40	—	—
NLTL-6275CH	Comb Generator	3-15	3-85	—	—

POWER DIVIDERS, 1:2

Part Number	Band (GHz)	Amplitude Balance (dB)	Phase Balance (dB)	Isolation (dB)
MPD-0226CH*	2-26.5	±0.2	±2	20

LIMITERS

Part Number	Band (GHz)	Loss (dB)	Flat Leakage (dB)	Peak Power CW (W)	Peak Power Pulsed (W)	P1dB (dBm)
HLM-40CH	DC-40	0.4@18GHz	18	4	20	15

*New Release

All electrical specifications given are typical values

SURFACE MOUNTS

AMPLIFIERS, LO Driver

Part Number	Band (GHz)	Gain (dB)	Psat (dBm)	Bias Voltage (V)	Bias Current (mA)	Package
ADM-0012-5931SM	DC-12	11	18	+3 to +7 VD and -0.3 to 0 VG	85	3mm QFN
ADM-0026-5929SM	DC-26.5	13	20	+3 to +7 VD and -0.3 to 0 VG	165	4mm QFN
APM-6849SM ¹	2-30	11	21	+5 VC and +5 VB	23	3mm QFN
APM-7099SM ¹	.01-20	14	25	+5 to +8 VC and +5 to +8 VB	72	4mm QFN
APM-7516PSM*	1.5-20	11	22	+5 VC and +5 VB	106	4mm QFN
APM-7098SM ¹	0.1-22	14	23	+5 to +8 VC and +5 to +8 VB	44	4mm QFN
AMM-7199SM	11-38	19	21	+3 to +4 VD and -0.6 to -0.4 VG	180	3mm QFN
AMM-7200SM	12-46	16	21	+3 to +4 VD and -0.6 to -0.4 VG	180	3mm QFN
AMM-6702SM	20-50	28	22	+3 to +4 VD and -0.6 to -0.4 VG	200	4mm KFN
AMM-7210SM	22-57	13	21	+3 to +4 VD and -0.6 to -0.4 VG	180	3mm QFN

¹Low Phase Noise

BALUNS

Part Number	Band (GHz)	Amp Bal (dB)	Phase Bal (°)	Isolation (dB)	Impedance Ratio	Total Insertion Loss as a Mode Converter (dB)	Package
BAL-0003SMG	.0005-3	0.3	3	9	1:2	3.8	SMG
BALH-0003SMG	.0005-3	0.2	2	7	1:1	2	SMG
BAL-0006SMG	.0005-6	0.4	3	8	1:2	4	SMG
BALH-0006SMG	.0005-6	0.2	3	8	1:1	2	SMG
BAL-0009SMG	.0005-9	0.6	5	8	1:2	4.5	SMG
BALH-0009SMG	.0005-9	0.8	5	6	1:1	2.5	SMG
MBAL-0104SM	1-4	0.2	2	8	1:2	2.5	4mm QFN
BAL-0208SMG	2-8	0.3	1	17	1:2	2.5	SMG
BAL-0416SMG	4-16	0.4	1	15	1:2	3.3	SMG
BAL-0012SSG	.01-12	0.6	5	8	1:2	5	SSG
BALH-0012SSG	.01-12	0.6	5	5.5	1:1	2	SSG
BAL-0020SLG	.01-20	0.4	5	12	1:2	4.5	SLG
MBAL-0220SM	2-20	0.25	3	10	1:2	6	4mm QFN
BAL-0620SMG	6-20	0.2	1	14	1:2	2.6	SMG
BAL-0032SSG*	.01-32	0.5	5	8	1:2	5	SSG
MBAL-1445SM	14-45	0.2	2	18	1:2	4.5	4mm QFN

BIAS TEES

Part Number	Band (GHz)	Insertion Loss (dB)	DC Current (A)	DC Port Isolation (dB)	DC Voltage (V)	Package
BT-0010SMG	.02-10	0.5	0.5	40	30	SMG
BTL-0012SMG	.0005-12	0.5	0.5	35	30	SMG
BT-0026SMG	.02-26	1	0.5	40	35	SMG
BTL-0026SMG	.0005-26	1	0.5	35	30	SMG
BT-0035SMG	.02-35	1	0.5	35	30	SMG
BTL-0035SMG	.0005-35	1	0.5	35	30	SMG

*New Release

All electrical specifications given are typical values.

COUPLER, Directional

Part Number	Band (GHz)	VSWR	Mean Coupling (dB)	Directivity (dB)	Package
MC16-0222SM	2-22	1.22	16	19	4mm QFN

EQUALIZERS, Positive Gain Slope

Part Number	Band (GHz)	Low Freq Attenuation (dB)	Typ Return Loss (dB)	Package
MEQX-7ASM	DC-7	3, 6, 10 & 12.5	29, 29, 27, 27	3mm QFN
MEQX-14ASM	DC-14	3, 6 & 10	23, 28, 29	3mm QFN
MEQX-20ASM	DC-20	3, 5, 6, 7.5, 10 & 11	19, 22, 23, 26, 20, 27	3mm QFN
MEQ6-26CSP1*	DC-26	6	23	1.5mm CSP
MEQ10-45CSP1*	DC-45	10	13	1.5mm CSP

FILTERS

Part Number	Type	Center Freq (GHz)	1dB Passband (GHz)	Insertion Loss in Passband (dB)	Package
FB-0785SMG	Bandpass	7.85	7.25-8.45	2.2	SMG
FB-0850SM	Bandpass	8.5	7.85-9.2	2	SM
FB-0900SM	Bandpass	9.0	8.4-9.6	2.2	SM
FB-0955SM	Bandpass	9.55	8.9-10.2	2	SM
FB-1050SM	Bandpass	10.5	9.6-11.4	2	SM
FB-1140SM	Bandpass	11.4	10.45-12.35	2	SM
FB-1215SM	Bandpass	12.15	11.35-12.95	2	SM
FB-1300SMG	Bandpass	13.0	12.0-14.0	2	SMG
FB-1445SM	Bandpass	14.45	13.2-15.7	2	SM
MFB-1445SM	Bandpass	14.45	13.6-15.1	3.8	3mm QFN
FB-1575SMG	Bandpass	15.75	14.6-16.9	2	SMG

DIPLEXERS

Part Number	Passband Low (GHz)	Passband High (GHz)	Isolation (dB)	Package
DPX-M50	DC-.035	.07-10	24	SM
DPX-0R5	DC-.36	.7-8	24	SM
DPX-1	DC-.85	1.4-5	24	SM
DPX-2	DC-1.5	2.7-7	25	SM
DPX-3	DC-2.3	4.2-8	25	SM
DPX-4	DC-2.8	5.5-12	30	SM

HYBRIDS, 90° Quadrature

Part Number	Band (GHz)	Amplitude Balance (dB)	Phase Balance (°)	Isolation (dB)	Package
MQS-0218SM	2-18	±1	±3	15	4mm QFN
MQS-0518SM	5-18	±0.5	±2.5	17	4mm QFN

***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)	Package
MMIQ-0205HSM	1.75-5	DC-2	8	32	61	5mm QFN
MMIQ-0218(L/H)SM	2-18	DC-3	8	27/35	58/53	6mm QFN
MMIQ-0416(L/H)SM	4-16	DC-6	9/8.5	35/31	51	4mm QFN
MMIQ-0520(L/H)SM	5-20	DC-6	9	35	46	4mm QFN
MMIQ-0626(L/H)SM	6-26	DC-6	9	35	39/43	4mm QFN
MMIQ-1040(L/H)SM	10-40	DC-10	9	35	50/40	4mm QFN
MMIQ-1867(L/H)SM	18-67	DC-23	9	32/29	48.5/44	4mm QFN

MIXERS, Double Balanced

Part Number	RF/LO (GHz)	IF (GHz)	Conversion Loss (dB)	IIP3 (dBm)	LO Drive (dBm)	Package
MM1-0212(L/H/S)SM	2-12	DC-3	8.5/8.5/9	+13/+23/+26	+9/+15/+20	4mm QFN
MM1-0222(L/H)SM	2-22	DC-3.5	7/7.5	+11.5/+20	+9/+15	3mm QFN
MM1-0312(H/S)SM	3-12	DC-4.5	7	+19/+24	+15/+20	3mm QFN
MM1-0320HSM	3-20	DC-4	8	+20	+15	3mm QFN
MM1-0424SSM	4.5-24	DC-4	8	+25	+20	3mm QFN
MM1-0626(H/S)SM	6-26.5	DC-9	7.5/8	+21/+24.5	+15/+20	3mm QFN
MM1-0726HSM	7-26.5	DC-9	7.5	+17	+20	3mm QFN
MM1-0832(L/H)SM	8-32	DC-12	8.5/8	+11/+20.5	+9/+15	3mm QFN
MM1-0832HPSM	8-32	DC-12	8	+23	+15	3mm QFN
MM1-1040HPSM	10-40	DC-12	9	+20	+15	3mm QFN
MM1-1130HSM	11-30	DC-12	7	+21	+15	3mm QFN
MM1-1453(L/H)SM	14-53	DC-22	8/7.6	+13/+17	+13/+15	4mm QFN
MM1-1850(H/S)SM	18-50	DC-21	8.7/9.7	+17/+28	+15/+20	4mm KFN
MM1-2567LSM	25-67	DC-30	11	+9	+9	3mm QFN

MIXERS, Triple Balanced

Part Number	RF/LO (GHz)	IF (GHz)	Conversion Loss (dB)	IIP3 (dBm)	LO Drive (dBm)	Package
MM2-0530(L/H)SM	5-30	2-20	10/9	+15/+21	+15/+20	4mm QFN
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
MT3D-0113LSM ¹	1.5-13	see plots	7.5	+27	+17	4mm QFN
MT3L-0113HSM	1.5-13	0.25-5	8.5	+20	+30	4mm QFN
MT3A-0113HCSM^{*2}	1.5-13	0.5-8.5	9.5	+28	+20	6mm QFN
MT3H-0113(L/H)SM	1.5-13	0.8-8.5	8	+22/+29	+15/+20	4mm QFN
T3-18GLCTG	.01-18	.001-10	7.5	+30	+20	CQG
T3H-18GLCTG	.01-18	.01-18	9.5	+30	+20	CQG
T3-20GLCTG	.01-20	.001-10	7.5	+30	+20	CQG
T3H-20GLCTG	.01-20	.01-18	9.5	+30	+20	CQG

¹Differential IF²Integrated low phase noise driver amplifier***New Release**

All electrical specifications given are typical values.

PASSIVE MULTIPLIERS

Part Number	Type	Input (GHz)	Output (GHz)	1F Supp (dBc)	3F Supp (dBc)	Package
MMD-1030HSM	Doubler	5-15	10-30	34	46	3mm QFN
MMD-2050(L/H)SM	Doubler	10-25	20-50	35/33	46/40	3mm QFN
NLTL-6794SM	Comb Generator	0.1-1	0.1-30	—	—	6mm QFN
NLTL-6796SM	Comb Generator	0.5-3.5	0.5-50	—	—	6mm QFN
NLTL-6273SM	Comb Generator	0.7-5	0.7-24	—	—	5mm QFN

POWER DIVIDERS, 1:2

Part Number	Band (GHz)	Excess Loss (dB)	Amp Bal (dB)	Isolation (dB)	Type	Package
PD-0030SMG	DC-30	1	±0.25	6	Resistive	SMG
PBR-0003SMG	0.01-3	1.5	±0.8	40	High Isolation	SMG
PBR-0006SMG	0.01-6	1.7	±0.8	35	High Isolation	SMG
PBR-0012SMG	0.01-12	1.7	±1	30	High Isolation	SMG
MPD-0226SM	2-26.5	1.5 to 3	±0.2	20	Wilkinson	4mm QFN
PD-0434SM	4-34	1.5	±0.25	20	High Isolation	SM
PD-0530SMG	5-30	1.5	±0.1	25	Wilkinson	SMG
PD-0535SM	5-35	1.5	±0.25	18	Wilkinson	SM

ATTENUATORS

Part Number	Band (GHz)	Attenuation (dB)	Accuracy (dB)	Return Loss (dB)	Package
ATN10-0050CSP1*	DC-50	10	see datasheet	24	1.5mm CSP

LIMITERS

Part Number	Band (GHz)	Loss (dB)	Flat Leakage (dB)	Average Power Handling (W)	Peak Power Handling (W)	P1dB (dBm)	Package
DLM-10SM	DC-10	0.75	Adjustable	0.5	—	10	3mm QFN
HLM-20SM	DC-20	0.7@10GHz	15	5	50	15	4mm QFN
HLM-40SM	DC-40	0.7@20GHz	15	2.5	9.5	14	4mm QFN

SWITCHES

Part Number	Band (GHz)	Insertion Loss (dB)	Return Loss (dB)	Isolation (dB)	IIP3 (dBm)	Package
MSW2-1001ELGA*	0.1-40	1.0	22	52	50	2.25mm LGA

*New Release

All electrical specifications given are typical values.

CONNECTORIZED MODULES

AMPLIFIERS

Part Number	Band (GHz)	Gain (dB)	Psat (dBm)	Voltage (V)	Current (mA)
A-3567UC	35-67	18	20	+3 to +4 VD and -0.6 to -0.4 VG	300
ADM1-0026PA	.005-26.5	12	20	+3 to +7 VD and -0.3 to 0 VG	165
ADM2-0035PA	0.1-35	23	23	+3 to +7 VD and -0.3 to 0 VG	330
ADM3-0022PA	0.01-22	35	30	See Datasheet	495
AMM-7199UC	11-38	20.5	21	+3 to +4 VD and -0.6 to -0.4 VG	180
AMM-7200UC	12-46	18	21.5	+3 to +4 VD and -0.6 to -0.4 VG	180
AMM-6702UC/UC5	20-55	28	22	+3 to +4 VD and -0.6 to -0.4 VG	200
AMM-7210UC	22-57	14.5	20.5	+3 to +4 VD and -0.6 to -0.4 VG	180
AMM-7203UC	30-60	11.5	16	+1.5 to +3 VD and -0.6 to -0.4 VG	80
APM-7099PA	0.1-20	14	23	+8 VC and +7 VB	44
APM-7098PA	0.1-22	14	23	+8 VC and +7 VB	72
APM-7516PA*	1-22	12.5	23	+5 VC and +5 VB	106

BALUNS, Single Ended to Differential

Part Number	Band (GHz)	Amp Bal (dB)	Phase Bal (°)	Isolation (dB)	Turns Ratio	Total Insertion Loss as a Mode Converter (dB)
BAL-0003	.0002-3	0.05	1	8	1:2	5
BALH-0003	.0002-3	0.1	1	7	1:1	2
BAL-0006	.0002-6	0.05	1	9	1:2	5.5
BALH-0006	.0002-6	0.1	1	8	1:1	4
BAL-0010	.0002-10	0.2	2	6	1:2	5.65
BALH-0010	.0002-10	0.2	2	9	1:1	4
BAL-0106	1.2-6	0.1	2	8	1:2	2.5
BAL-0212	2.6-12	0.1	2	6	1:2	3
BAL-0520	5-20	0.2	3	6	1:2	3
BAL-0026	.0003-26.5	0.5	3	24	1:2	4
BAL-0036	.0003-36	0.5	3	24	1:2	4.5
BAL-0050	.0003-50	0.7	4	25	1:2	4.5
BAL-0067	.0003-67	0.7	4	25	1:2	4.5

PULSE INVERTERS, Broadband, Fast Rise Time

Part Number	Band (GHz)	Loss (dB)	Rise/Fall Time (ps)
INV-0026	.0001-26.5	2	13
INV-0040	.0001-40	2.5	13
INV-0065	.0001-65	5	12

*New Release

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BIAS TEES

Part Number	Band (GHz)	DC Voltage (V)	DC Current (A)	Insertion Loss (dB)
BT-0018	.00004-18	30	0.5	0.6
BTN1-0018	.0005-18	50	1	0.7
BTN2-0018	.003-18	50	2	0.7
BT-0025	.00004-25	30	0.5	0.8
BT-0026	.01-26.5	30	0.5	0.8
BT1-0026	.00005-26.5	50	1	1
BT2-0026	.00001-26.5	50	2	1
BTN1-0026	.0005-26.5	50	1	1
BTN2-0026	.003-26.5	50	2	1
BT-0040	.000004-40	30	0.5	1.5
BTN-0040	.00004-40	30	0.5	1.5
BT1-0040	.00005-40	50	1	1.5
BT2-0040	.0001-40	50	2	1.5
BTN1-0040	.0005-40	50	1	1.5
BTN2-0040	.003-40	50	2	1.5
BT-0050	.000004-50	30	0.5	1.8
BTN-0050	.00004-50	30	0.5	1.8
BT1-0050	.00005-50	50	1	1.5
BT2-0050	.0001-50	50	2	1.5
BTN1-0050	.0005-50	50	1	1.5
BTN2-0050	.003-50	50	2	1.5
BT-0065	.000004-65	30	0.5	1.8
BTN-0065	.00004-65	30	0.5	2.0

COUPLERS, Elite Stripline Directional

Part Number	Band (GHz)	Coupling (dB)	IL Corrected Directivity (dB)	Flatness (dB)	VSWR
CE10-0R620T*	.6-20	10	27	±0.2	1.07
CE10-0R640(T)*	.6-40	10	24/22	±0.2	1.07/1.08
CE10-1R520T*	1.5-20	10	32	±0.25	1.07
CE10-1R540(T)*	1.5-40	10	26/22	±0.25	1.07
CE13-0220T*	2-20	13	30	±0.15	1.07
CE13-0240(T)*	2-40	13	29/27	±0.15	1.07/1.08
CE16-0220T*	2-20	16	32	±0.1	1.07
CE16-0240(T)*	2-40	16	30/29	±0.1	1.07
CE20-0R620T*	.6-20	20	26	±0.15	1.07
CE20-0R640(T)*	.6-40	20	27/24	±0.15	1.07
CE20-0220T*	2-20	20	30	±0.1	1.07
CE20-0240(T)*	2-40	20	33/28	±0.1	1.05/1.07

COUPLERS, High Directivity Bridge

Part Number	Band (GHz)	Coupling (dB)	Directivity (dB)	VSWR
CBR16-0003	.0002-3	16	40	1.1
CBR16-0006	.0002-6	16	38	1.15
CBR16-0012	.0002-12	16	32	1.25
CBR17-0026	.0002-26	17	23	1.22

COUPLERS, Stripline Directional

Part Number	Band (GHz)	Coupling (dB)	Directivity (dB)	Flatness (dB)	VSWR
C09-0R412	0.45-12	9	22	±0.7	1.15
C09-0R418	0.45-18	9	22	±0.7	1.15
C09-0R426	0.45-26.5	9	22	±0.7	1.15
C09-0R430	0.45-30	9	20	±0.7	1.15
C20-0R612	0.6-12	20	22	±0.6	1.2
C10-0116	1-16	10	20	±0.5	1.15
C20-0116	1-16	20	20	±0.6	1.15
C20-0R518	0.5-18	20	22	±0.75	1.2
C20-0R520	0.5-20	20	22	±0.75	1.2
C13-0126	1-26.5	13	20	±0.6	1.15
C16-1R718	1.7-18	16	20	±0.3	1.15
C16-1R726	1.7-26.5	16	20	±0.4	1.15
C10-0226	2-26.5	10	22	±0.6	1.15
C20-0226	2-26.5	20	22	±0.75	1.25
C13-0140	1-40	13	16	±0.1	1.2
C20-0240	2-40	20	17	±0.75	1.3
C13-0150	1-50	13	16	±0.75	1.2
C10-0450	4-50	10	15	±0.5	1.35
C10-0667	6-67	10	17	±0.8	1.2
C16-0667	6-67	16	17	±0.9	1.25
C20-0667	6-67	20	17	±0.8	1.25

COUPLERS, Low Loss High Power

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

COUPLERS, Dual Directional

Part Number	Band (GHz)	Coupling (dB)	Directivity (dB)	Flatness (dB)	VSWR
CD10-0106	0.7-6.3	10	25	±0.6	1.14
CD10-0114	0.7-14.7	10	23	±0.6	1.17

COUPLERS, Pick-Off Tees

Part Number	Band (GHz)	Pick-Off Loss (dB)	Insertion Loss (dB)
PT-0020	DC-20	16	2
PT-0030	DC-30	16	2

***New Release**

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COUPLERS, 90° Quadrature Hybrids

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

EQUALIZERS, Positive-Slope

Part Number	Band (GHz)	Loss at DC (dB)	Typ Return Loss (dB)
EQX-26	DC-26	3, 6	21, 15
EQX-40	DC-40	3, 6	18
MEQX-26AS	DC-26.5	3, 6, 10	18, 20, 20
MEQ10-50AU	DC-50	10	15
Additional MMIC Equalizer modules available upon request.			

FILTERS: Lowpass, Highpass, Bandpass, Diplexer

The filters below are a small sample of Marki Microwave's extensive portfolio. Visit 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)
FLP-0490	4.9	0.6	30	9.3
FLP-2650	26.5	1.5	15	36.5
FLP-5000	50	2	15	62

HIGHPASS

Part Number	Cutoff (GHz)	30dB Rejection Freq (GHz)	50dB Rejection Freq (GHz)	80dB Rejection Freq (GHz)
FH-1700	17	14	11.5	6
FH-2600	26	21.5	18	11
FH-5500	55	51	45	35

BANDPASS

Part Number	Center Freq (GHz)	Low Freq 1dB Cutoff (GHz)	High Freq 1dB Cutoff (GHz)
FB-0905	9.05	8.45	9.65
FB-2400	24	22.4	25.6
FB-4000	40	34.4	45.6

DIPLEXERS

Part Number	Passband Low (GHz)	Passband High (GHz)	Isolation (dB)
MDPX-0305	DC-3	5-26.5	47
MDPX-0407	DC-4	7-26.5	38
MDPX-0609	DC-6	9-26.5	58

IQ MIXERS

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

MIXERS, Double Balanced

Part Number	RF/LO (GHz)	IF (GHz)	Conversion Loss (dB)	IIP3 (dBm)	LO Drive (dBm)
MM1-0212(L/H/S)S	2-12	DC-3	8/8.5/8.5	+13/+23/+26	+9/+15/+20
MM1-0222(L/H)S	2-22	DC-3.5	8.5	+11.5/+20	+9/+15
MM1-0312(H/S)S	3-12	DC-4.5	7.5	+19/+24	+15/+20
MM1-0320(L/H)S	3-20	DC-4	8	+10/+20	+7/+15
MM1-0330TS*	3-30	DC-5	9	+32	+23
MM1-0424SS	4.5-24	DC-4	8	+25	+20
MM1-0626(H/S)S	6-26.5	DC-9	7.5/8	+21/+25	+15/+20
MM1-0832(L/H)S	8-32	DC-12	8/7.6	+14/+23	+9/+15
MM1-1044(L/H)S	10-44	DC-14	7.6	+13/+22	+9/+15
MM1-1140HS	11-40	DC-12	8	+21	+15
MM1-1240SS	12-40	DC-12	8	+25	+20
MM1-1467(L/H)S	14-67	DC-21	7	+12/+17.5	+11/+15
MM1-1850(H/S)S	18-50	DC-20	8/8.5	+21/+25	+15/+20
MM1-1857(L/H)S	18-57	DC-21	8/7.5	+13/+20	+9/+13
MM1-2567LS	25-67	DC-30	9	+9	+13
MM1-30100LM*	30-100	DC-20	8.5	see datasheet	+14

MIXERS, Triple Balanced

Part Number	RF/LO (GHz)	IF (GHz)	Conversion Loss (dB)	IIP3 (dBm)	LO Drive (dBm)
MT3A-0113HPA ¹	1-13	0.5-8.5	9.5	+28	+12
MT3L-0113HS	1.5-13	0.25-5	8.5	+31	+20
MT3H-0113(L/H)S	1.5-13	0.8-8.5	8/8.5	+20/+28	+15/+20
T3-18GLS	0.01-18	.001-10	7.5	+25	+20
T3H-18GLS	0.01-18	0.01-18	9.5	+30	+20
T3-20GLS	0.01-20	.001-10	7.5	+30	+20
T3H-20G(L/I)S	0.01-20	0.01-20	9.5	+30	+20
T3-0838GLN	8-38	0.01-10	8	+30	+20
T3-1040GLN	10-40	1-18	8	+25	+20
MM2-0530(L/H)S	5-30	2-20	10/9	+15/+21	+15/+20

¹Integrated low phase noise driver amplifier***New Release**

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PASSIVE MULTIPLIERS & COMB GENERATORS

Part Number	Type	Input (GHz)	Output (GHz)	1F Suppression (dBc)	3F Suppression (dBc)
MMD-1030HS	Doubler	5-15	10-30	41	47
MMD-1250HU*	Doubler	6-25	12-50	32	40
MMD-1648LS	Doubler	8-24	16-48	44	69
MMD-2060(L/H)U	Doubler	10-30	20-60	37	40
MMD-20100HM	Doubler	10-50	20-100	24.5	33
MMD-3567LU	Doubler	17.5-33.5	35-67	38	44
MMD-3580LU-KW	Doubler	17.5-40	35-80	38	44
MMQ-40125HM	Quadrupler	10-31.25	40-125	19	12
NLTL-6273S	Comb Generator	0.7-5	0.7-40	–	–
NLTL-6275U/U-SW	Comb Generator	3-15	3-85	–	–

ACTIVE MULTIPLIERS

Part Number	Input (GHz)	Output (GHz)	Input (dBm)	Output (dBm)
ADA-0416	2-8	4-16	0 to +6	+16
ADA-1030	5-15	10-30	0 to +6	+16
AQA-2156	5.25-14	21-56	-2 to +6	+20
ADA-2052	10-26	20-52	-6 to +2	+16

POWER DIVIDERS, High Isolation

Part Number	Band (GHz)	Loss (dB)	Amplitude Balance (dB)	Isolation (dB)
PBR-0003	.0003-3	1.25	±0.4	45
PBR-0006	.0003-6	1.5	±0.5	40
PBR-0012	.0003-12	1.5	±0.6	35

POWER DIVIDERS, Wilkinson 1:2

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

POWER DIVIDERS, Wilkinson 1:3

Part Number	Band (GHz)	Loss (dB)	Amplitude Balance (dB)	Phase Balance (°)	Isolation (dB)
PD3-0R412	0.4-12	1.5	±0.1	±2	23
PD3-0R616	0.6-16	1.5	±0.1	±2	24
PD3-0126	1.5-26.5	1.5	±0.3	±4	24

POWER DIVIDERS, Wilkinson 1:4

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

POWER DIVIDERS, Resistive 1:2

Part Number	Band (GHz)	Loss (dB)	Amplitude Balance (dB)	Phase Balance (°)
PD-0010	DC-10	0.25	±0.1	±1
PD-0020	DC-20	0.5	±0.2	±2
PD-0030	DC-30	0.5	±0.25	±2
PD-0040	DC-40	0.75	±0.25	±2

ADAPTERS, High Performance

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

ATTENUATORS, Precision-Grade

Part Number	Band (GHz)	Attenuation (dB)	Accuracy (dB)	Return Loss (dB)
ATN06-0067	DC-67	6.4	see datasheet	23
ATN10-0067	DC-67	10.5	see datasheet	22
ATN06-00110	DC-110	6.5	see datasheet	20
ATN10-00110	DC-110	10.5	see datasheet	20

DC BLOCKS, Broadband

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

LIMITERS

Part Number	Band (GHz)	Loss (dB)	Flat Leakage (dB)	Peak Power CW (W)	Peak Power Pulsed (W)	P1dB (dBm)
HLM-40U	DC-40	0.5	18	4	20	15

THUMBWHEEL

Part Number	Description
TW-1	quick, secure, wrenchless connection for SMA, 2.92mm and 2.4mm

***New Release**

All electrical specifications given are typical values.

Visit 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 NLTLs 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), **CSP** (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**, **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 QFN products.

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