PERFORMANCE THAT SEEMS

UNREAL

PRODUCT CATALOG • AUGUST 2024

Marki® microwave

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® 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.

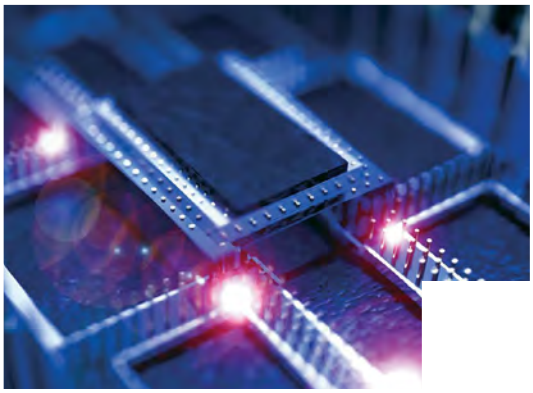
HIGH FREQUENCY OPERATION

High frequencies offer advantages of more contiguous bandwidth supporting high throughput systems, or smaller wavelength signals that enable high resolution imaging and RADAR solutions. Developing products at mmWave and sub-THz frequencies requires attention to the smallest detail and 3D simulations of the entire product, including the environment in which it will be used.

Marki Microwave not only develops MMIC die products but also offers a range of different form factors optimized for high frequency operation.

PACKAGING

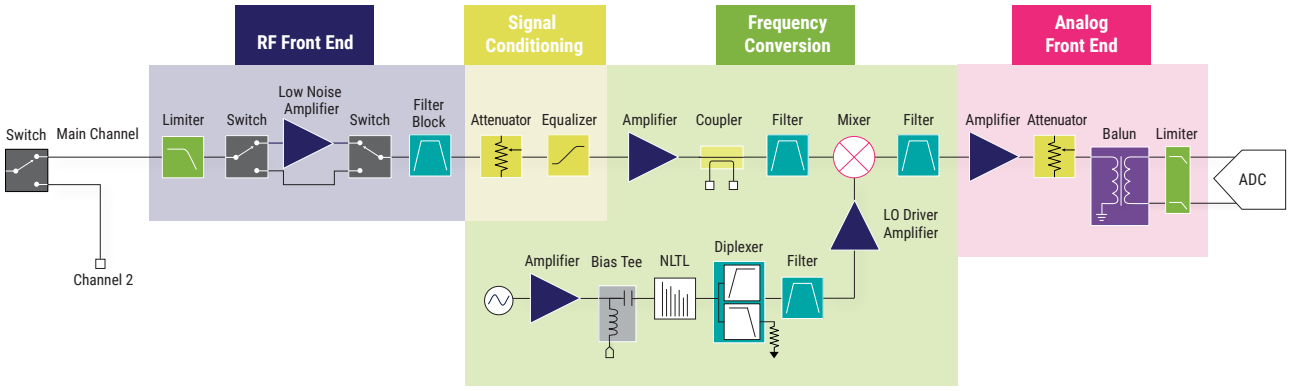
As functions become more complex it is necessary to consider how the role of packaging can affect the design-in-process. We simplify product designs with easy-to-use packages that allow the MMIC design to be realized in both surface mount and connectorized forms, as well as solutions that combine multiple 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.

SPACE & HI-REL

Since our inception over 30 years ago, Marki Microwave has developed a long and successful history in space applications. Our capabilities cover both space and Hi-Rel for military applications, supporting die, surface mount, connectorized, and waveguide products.

Most of Marki Microwave's catalog can be upscreened in-house to meet the various qualification requirements of GEO and LEO applications, including:

- Earth Observance
- Communications
- Military
- GPS
- Weather Forecasting
- Telescopes
- Remote Sensing

Our test flows support the overall MIL specification requirements for the various active and passive products Marki Microwave builds. These documents define the general requirements as well as the quality assurance and reliability requirements of such circuits used in military and other high reliability programs. Our qualification plans are designed to meet the following standards:

- MIL-PRF-38534, Class K and H
- MIL-PRF-38535, Class P, N, Y, V, and Q
- NASA PEM-INST-001 (Level 1, 2, and 3)

Marki has successfully qualified the parts below for a combination of 37 die and 6 hybrid surface mount balun requirements to date. Our space heritage demonstrates our commitment to delivering high performance RF solutions for the most demanding applications.

Part Number	Product Description	Package	Screen Level
MM1H-1044LCH-2	MMIC Mixer RF 10 - 44 GHz	Die	H
MM1H-0212HCH-2	MMIC Mixer RF 2 - 12 GHz,	Die	H
MM1H-0312HCH-2	MMIC Mixer RF 3 - 12 GHz	Die	H
MM1H-0320LCH-2	MMIC Mixer RF 3 - 20 GHz	Die	H
MM1H-0626HCH-2	MMIC Mixer RF 6 - 26.5 GHz	Die	H
MM1H-1044HCH-2	MMIC Mixer RF 9 - 44 GHz	Die	H
MM1H-1044LCH-2	MMIC Mixer RF 9 - 44 GHz	Die	H
MM1H-1140HCH-2	MMIC Mixer RF 11 - 40 GHz	Die	H
MM1H-1857LCH-2	MMIC Mixer RF 18 - 57 GHz	Die	H
MM1H-2567LCH-2	MMIC Mixer RF 25 - 67 GHz	Die	H
MM1K-0320LCH-2	MMIC Mixer RF 3 - 20 GHz	Die	K
MM1K-0626HCH-2	MMIC Mixer RF 6 - 26.5 GHz	Die	K
MM1K-0626SCH-2	MMIC Mixer RF 6 - 26.5 GHz	Die	K
MM1K-0832HCH-2	MMIC Mixer RF 8 - 32 GHz	Die	K
MM1K-1044HCH-2	MMIC Mixer RF 9 - 44 GHz	Die	K
MM1K-1044LCH-2	MMIC Mixer RF 9 - 44 GHz	Die	K
MM1K-1857HCH-2	MMIC Mixer RF 18 - 57 GHz	Die	K
MM1K-2567LCH-2	MMIC Mixer RF 25 - 67 GHz	Die	K
MM2H-0530HCH-2	MMIC Mixer RF 5-30 GHz	Die	H
MM2K-0530HCH-2	MMIC Mixer RF 5-30 GHz	Die	K
MM2K-0530LCH-2	MMIC Mixer RF 5-30 GHz	Die	K
MMDK-1030HCH	MMIC Doubler output 10 - 30 GHz	Die	K
MT3HH-0113LCH-2	MMIC Mixer RF 1.5 - 13 GHz	Die	H
BALS-0003SMG	Broadband Balun 500 kHz - 3 GHz	SMT	S
BALS-0006SMG	Broadband Balun 500 kHz - 6 GHz	SMT	S

We currently stock space qualified parts with an optional data pack. These parts ship from stock and provide our customers with shorter lead times and reduced overall program costs.

Space Part Number	COTS Part Number	Description	Package	Class	ECCN
MM1H-1140HCH-2	MM1-1140HCH-2	MMIC Mixer RF 11 - 40 GHz +15 dBm, Chip I2	Die	H	EAR99
MM1K-2567LCH	MM1-2567LCH-2	MMIC Mixer RF 25 - 67 GHz +10 dBm, Chip I2	Die	K	EAR99
MM1K-0626SCH	MM1-0626SCH-2	MMIC Mixer RF 6 - 26.5 GHz +18 dBm	Die	K	EAR99
MM2K-0530LCH-2	MM2-0530LCH-2	MMIC Mixer RF 5-30 GHz +9 to +17 dBm	Die	K	EAR99

In addition to standard qualifications, Marki Microwave can develop custom solutions for nearly any project. Please contact support@markimicrowave.com if your needs differ from our standard qualification plans. We are constantly expanding our portfolio of space qualified products to cover the complete RF signal chain.

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WAVEGUIDE

CONNECTORIZED MODULES

SURFACE MOUNT

BARE DIE

SUFFIX/GLOSSARY

WAVEGUIDE

COUPLERS

Part Number	Band (GHz)	Coupling	Directivity TYP. (dB)	Insertion Loss (dB)	Return Loss (dB)	Waveguide Band	Flange	ECCN
C10-2800WG*	26.5-40	10	40	0.5	30	WR-28	UG-599/U	EAR99
C10-2200WG*	33-50	10	40	0.6	30	WR-22	UG-383/U	EAR99
C10-1900WG*	40-60	10	40	0.7	30	WR-19	UG-383/U	EAR99
C10-1500WG*	50-75	10	40	1.2	30	WR-15	UG-385/U	EAR99
C10-1200WG*	60-90	10	40	1.1	30	WR-12	UG-387/U	EAR99
C10-1000WG*	75-110	10	40	1.25	30	WR-10	UG-387/U	EAR99

DETECTORS

Part Number	Band (GHz)	Sensitivity (V/mW)	Flatness (dB)	Operating range (dB)	Flange	ECCN
DET-28PP00WG*	26.5-40	1800	+/- 1.5	15 to -40	UG-599/U	EAR99
DET-22PP00WG*	33-50	1500	+/- 1.5	15 to -40	UG-383/U	EAR99
DET-19PP00WG*	40-60	1500	+/- 2.0	15 to -40	UG-383/U	EAR99
DET-15PP00WG*	50-75	1200	+/- 1.5	15 to -40	UG-387/U	EAR99
DET-12PP00WG*	60-90	1000	+/- 1.5	15 to -40	UG-387/U	EAR99
DET-10PP00WG*	75-110	800	+/- 1.5	15 to -40	UG-387/U	EAR99
DET-08PP00WG*	90-140	700	+/- 1.7	15 to -40	UG-387/U	EAR99

ISOLATORS

Part Number	Band (GHz)	Isolation (dB)	Insertion Loss (dB)	Return Loss	Waveguide Band	Flange	ECCN
ISO27-28F00WG*	26.5-40	27	1	17.7	WR-28	UG-599/U	EAR99
ISO27-22F00WG*	33-50	27	1.3	17.7	WR-22	UG-383/U	EAR99
ISO27-19F00WG*	40-60	27	1.5	17.7	WR-19	UG-383/U	EAR99
ISO27-15F00WG*	50-75	27	1.6	15.5	WR-15	UG-385/U	EAR99
ISO27-12F00WG*	60-90	27	1.7	15.5	WR-12	UG-387/U	EAR99
ISO27-10F00WG*	75-110	27	2	15.5	WR-10	UG-387/U	EAR99

LEVEL SET ATTENUATORS

Part Number	Band (GHz)	Attenuation Range (dB)	Return Loss (dB)	Flange	ECCN
ATN35-15LS00WG*	50-75	0-35	15	UG-385/U	EAR99
ATN35-12LS00WG*	60-90	0-35	15	UG-387/U	EAR99
ATN35-10LS00WG*	75-110	0-35	15	UG-387/U	EAR99

MULTIPLIERS

Part Number	Band (GHz)	Output Power dBm	Input Frequency (GHz)	Flange	ECCN
AQA-15F00WG*	50-75	13	12.5-18.75	UG-385/U	EAR99
ASA-12F00WG*	71-86	12	11.83-14.33	UG-387/U	EAR99
ASA-10F00WG*	75-110	10	12.5-18.3	UG-387/U	3A001.b.7.c.3

***New Release**

All electrical specifications given are typical values.

Visit markimicrowave.com for more connectorized components.

FIXED ATTENUATORS

Part Number	Band (GHz)	Attenuation (dB)	Waveguide Band	Flange	ECCN
ATN00-15FH00WG*[1]	50-75	0	WR-15	UG-385/U	EAR99
ATN00-15FL00WG*[1]	50-75	0	WR-15	UG-385/U	EAR99
ATN03-15FH00WG*[1]	50-75	3	WR-15	UG-385/U	EAR99
ATN03-15FL00WG*[1]	50-75	3	WR-15	UG-385/U	EAR99
ATN06-15FH00WG*[1]	50-75	6	WR-15	UG-385/U	EAR99
ATN06-15FL00WG*[1]	50-75	6	WR-15	UG-385/U	EAR99
ATN10-15FH00WG*[1]	50-75	10	WR-15	UG-385/U	EAR99
ATN10-15FL00WG*[1]	50-75	10	WR-15	UG-385/U	EAR99
ATN15-15FH00WG*[1]	50-75	15	WR-15	UG-385/U	EAR99
ATN15-15FL00WG*[1]	50-75	15	WR-15	UG-385/U	EAR99
ATN20-15FH00WG*[1]	50-75	20	WR-15	UG-385/U	EAR99
ATN20-15FL00WG*[1]	50-75	20	WR-15	UG-385/U	EAR99
ATN25-15FH00WG*[1]	50-75	25	WR-15	UG-385/U	EAR99
ATN25-15FL00WG*[1]	50-75	25	WR-15	UG-385/U	EAR99
ATN30-15FH00WG*[1]	50-75	30	WR-15	UG-385/U	EAR99
ATN30-15FL00WG*[1]	50-75	30	WR-15	UG-385/U	EAR99
ATN00-12FH00WG*[1]	60-90	0	WR-12	UG-387/U	EAR99
ATN00-12FL00WG*[1]	60-90	0	WR-12	UG-387/U	EAR99
ATN03-12FH00WG*[1]	60-90	3	WR-12	UG-387/U	EAR99
ATN03-12FL00WG*[1]	60-90	3	WR-12	UG-387/U	EAR99
ATN06-12FH00WG*[1]	60-90	6	WR-12	UG-387/U	EAR99
ATN06-12FL00WG*[1]	60-90	6	WR-12	UG-387/U	EAR99
ATN10-12FH00WG*[1]	60-90	10	WR-12	UG-387/U	EAR99
ATN10-12FL00WG*[1]	60-90	10	WR-12	UG-387/U	EAR99
ATN15-12FH00WG*[1]	60-90	15	WR-12	UG-387/U	EAR99
ATN15-12FL00WG*[1]	60-90	15	WR-12	UG-387/U	EAR99
ATN20-12FH00WG*[1]	60-90	20	WR-12	UG-387/U	EAR99
ATN20-12FL00WG*[1]	60-90	20	WR-12	UG-387/U	EAR99
ATN25-12FH00WG*[1]	60-90	25	WR-12	UG-387/U	EAR99
ATN25-12FL00WG*[1]	60-90	25	WR-12	UG-387/U	EAR99
ATN30-12FH00WG*[1]	60-90	30	WR-12	UG-387/U	EAR99
ATN30-12FL00WG*[1]	60-90	30	WR-12	UG-387/U	EAR99
ATN00-10FH00WG*[1]	75-110	0	WR-10	UG-387/U	EAR99
ATN00-10FL00WG*[1]	75-110	0	WR-10	UG-387/U	EAR99
ATN03-10FH00WG*[1]	75-110	3	WR-10	UG-387/U	EAR99
ATN03-10FL00WG*[1]	75-110	3	WR-10	UG-387/U	EAR99
ATN06-10FH00WG*[1]	75-110	6	WR-10	UG-387/U	EAR99
ATN06-10FL00WG*[1]	75-110	6	WR-10	UG-387/U	EAR99
ATN10-10FH00WG*[1]	75-110	10	WR-10	UG-387/U	EAR99
ATN10-10FL00WG*[1]	75-110	10	WR-10	UG-387/U	EAR99
ATN15-10FH00WG*[1]	75-110	15	WR-10	UG-387/U	EAR99
ATN15-10FL00WG*[1]	75-110	15	WR-10	UG-387/U	EAR99
ATN20-10FH00WG*[1]	75-110	20	WR-10	UG-387/U	EAR99
ATN20-10FL00WG*[1]	75-110	20	WR-10	UG-387/U	EAR99
ATN25-10FH00WG*[1]	75-110	25	WR-10	UG-387/U	EAR99
ATN25-10FL00WG*[1]	75-110	25	WR-10	UG-387/U	EAR99
ATN30-10FH00WG*[1]	75-110	30	WR-10	UG-387/U	EAR99
ATN30-10FL00WG*[1]	75-110	30	WR-10	UG-387/U	EAR99

[1]Low power handles 300 mW, high power handles 3 W with fan cooling

POWER DIVIDERS

Part Number	Band (GHz)	Insertion Loss (dB)	Isolation (dB)	VSWR Input	VSWR Outputs	Flange	ECCN
PD20-1500WG*	50-75	0.5	20	1.6:1	1.5:1	UG-385/U	EAR99
PD20-1200WG*	60-90	0.5	20	1.6:1	1.5:1	UG-387/U	EAR99
PD20-1000WG*	75-110	0.5	20	1.6:1	1.5:1	UG-387/U	EAR99

TERMINATIONS

Part Number	Band (GHz)	Return Loss (dB)	Power Handling (W)	Waveguide Band	Flange	ECCN
TW50-28H00WG*	26.5-40	30	7	WR-28	UG-599/U	EAR99
TW50-28L00WG*	26.5-40	32	5	WR-28	UG-599/U	EAR99
TW50-22H00WG*	33-50	30	5	WR-22	UG-383/U	EAR99
TW50-22L00WG*	33-50	32	4	WR-22	UG-383/U	EAR99
TW50-19H00WG*	40-60	30	3	WR-19	UG-383/U	EAR99
TW50-19L00WG*	40-60	32	2	WR-19	UG-383/U	EAR99
TW50-15H00WG*	50-75	28	2	WR-15	UG-385/U	EAR99
TW50-15L00WG*	50-75	30	1	WR-15	UG-385/U	EAR99
TW50-12H00WG*	60-90	28	1.8	WR-12	UG-387/U	EAR99
TW50-12L00WG*	60-90	30	0.9	WR-12	UG-387/U	EAR99
TW50-10H00WG*	75-110	28	1.2	WR-10	UG-387/U	EAR99
TW50-10L00WG*	75-110	30	0.6	WR-10	UG-387/U	EAR99
TW50-08H00WG*	90-140	24	contact support	WR-08	UG-387/U	EAR99
TW50-08L00WG*	90-140	26	contact support	WR-08	UG-387/U	EAR99

WAVEGUIDE TWISTS

Part Number	Band (GHz)	Twist Angle	Flange	ECCN
WT45-28L00WG*	26.5-40	45°	UG-599/U	EAR99
WT45-28R00WG*	26.5-40	45°	UG-599/U	EAR99
WT90-2800WG*	26.5-40	90°	UG-599/U	EAR99
WT45-22R00WG*	33-50	45°	UG-383/U	EAR99
WT45-22L00WG*	33-50	45°	UG-383/U	EAR99
WT90-2200WG*	33-50	90°	UG-383/U	EAR99
WT90-1900WG*	40-60	90°	UG-383/U	EAR99
WT45-19R00WG*	40-60	45°	UG-383/U	EAR99
WT45-19L00WG*	40-60	45°	UG-383/U	EAR99
WT45-15L00WG*	50-75	45°	UG-385/U	EAR99
WT90-1500WG*	50-75	90°	UG-385/U	EAR99
WT45-15R00WG*	50-75	45°	UG-385/U	EAR99
WT90-1200WG*	60-90	90°	UG-387/U	EAR99
WT45-12R00WG*	60-90	45°	UG-387/U	EAR99
WT45-12L00WG*	60-90	45°	UG-387/U	EAR99
WT45-10R00WG*	75-110	45°	UG-387/U	EAR99
WT90-1000WG*	75-110	90°	UG-387/U	EAR99
WT45-10L00WG*	75-110	45°	UG-387/U	EAR99
WT45-08L00WG*	90-140	45°	UG-387/U	EAR99
WT45-08R00WG*	90-140	45°	UG-387/U	EAR99
WT90-0800WG*	90-140	90°	UG-387/U	EAR99
WT45-06R00WG*	110-170	45°	UG-387/U	EAR99
WT45-06L00WG*	110-170	45°	UG-387/U	EAR99
WT90-0600WG*	110-170	90°	UG-387/U	EAR99

WAVEGUIDE BENDS

Part Number	Band (GHz)	Bend Angle	Flange	ECCN
WE45-2800WG*	26.5-40	45°	UG-599/U	EAR99
WE90-2800WG*	26.5-40	90°	UG-599/U	EAR99
WH45-2800WG*	26.5-40	45°	UG-599/U	EAR99
WH90-2800WG*	26.5-40	90°	UG-599/U	EAR99
WE45-2200WG*	33-50	45°	UG-383/U	EAR99
WE90-2200WG*	33-50	90°	UG-383/U	EAR99
WH45-2200WG*	33-50	45°	UG-383/U	EAR99
WH90-2200WG*	33-50	90°	UG-383/U	EAR99
WE45-1900WG*	40-60	45°	UG-383/U	EAR99
WE90-1900WG*	40-60	90°	UG-383/U	EAR99
WH45-1900WG*	40-60	45°	UG-383/U	EAR99
WH90-1900WG*	40-60	90°	UG-383/U	EAR99
WE45-1500WG*	50-75	45°	UG-385/U	EAR99
WE90-1500WG*	50-75	90°	UG-385/U	EAR99
WH45-1500WG*	50-75	45°	UG-385/U	EAR99
WH90-1500WG*	50-75	90°	UG-385/U	EAR99
WE45-1200WG*	60-90	45°	UG-387/U	EAR99
WE90-1200WG*	60-90	90°	UG-387/U	EAR99
WH45-1200WG*	60-90	45°	UG-387/U	EAR99
WH90-1200WG*	60-90	90°	UG-387/U	EAR99
WE45-1000WG*	75-110	45°	UG-387/U	EAR99
WE90-1000WG*	75-110	90°	UG-387/U	EAR99
WH45-1000WG*	75-110	45°	UG-387/U	EAR99
WH90-1000WG*	75-110	90°	UG-387/U	EAR99
WE45-0800WG*	90-140	45°	UG-387/U	EAR99
WE90-0800WG*	90-140	90°	UG-387/U	EAR99
WH45-0800WG*	90-140	45°	UG-387/U	EAR99
WH90-0800WG*	90-140	90°	UG-387/U	EAR99
WE45-0600WG*	110-170	45°	UG-387/U	EAR99
WE90-0600WG*	110-170	90°	UG-387/U	EAR99
WH45-0600WG*	110-170	45°	UG-387/U	EAR99
WH90-0600WG*	110-170	90°	UG-387/U	EAR99

***New Release**

All electrical specifications given are typical values.

Visit markimicrowave.com for more connectorized components.

WAVEGUIDE STRAIGHTS

Part Number	Band (GHz)	Length (inch)	Flange	ECCN
WS-2800100WG*	26.5-40	1	UG-599/U	EAR99
WS-2800200WG*	26.5-40	2	UG-599/U	EAR99
WS-2800300WG*	26.5-40	3	UG-599/U	EAR99
WS-2800600WG*	26.5-40	6	UG-599/U	EAR99
WS-2200100WG*	33-50	1	UG-383/U	EAR99
WS-220010SWG*	33-50	1	UG-599/U	EAR99
WS-2200200WG*	33-50	2	UG-383/U	EAR99
WS-220020SWG*	33-50	2	UG-599/U	EAR99
WS-2200300WG*	33-50	3	UG-383/U	EAR99
WS-220030SWG*	33-50	3	UG-599/U	EAR99
WS-2200600WG*	33-50	6	UG-383/U	EAR99
WS-220060SWG*	33-50	6	UG-599/U	EAR99
WS-1900100WG*	40-60	1	UG-383/U	EAR99
WS-190010SWG*	40-60	1	UG-599/U	EAR99
WS-1900200WG*	40-60	2	UG-383/U	EAR99
WS-190020SWG*	40-60	2	UG-599/U	EAR99
WS-1900300WG*	40-60	3	UG-383/U	EAR99
WS-190030SWG*	40-60	3	UG-599/U	EAR99
WS-1900600WG*	40-60	6	UG-383/U	EAR99
WS-190060SWG*	40-60	6	UG-599/U	EAR99
WS-1500100WG*	50-75	1	UG-385/U	EAR99
WS-1500200WG*	50-75	2	UG-385/U	EAR99
WS-1500300WG*	50-75	3	UG-385/U	EAR99
WS-1500600WG*	50-75	6	UG-385/U	EAR99
WS-1200100WG*	60-90	1	UG-387/U	EAR99
WS-1200200WG*	60-90	2	UG-387/U	EAR99
WS-1200300WG*	60-90	3	UG-387/U	EAR99
WS-1200400WG*	60-90	4	UG-387/U	EAR99
WS-1000100WG*	75-110	1	UG-387/U	EAR99
WS-1000200WG*	75-110	2	UG-387/U	EAR99
WS-1000300WG*	75-110	3	UG-387/U	EAR99
WS-1000400WG*	75-110	4	UG-387/U	EAR99
WS-0800100WG*	90-140	1	UG-387/U	EAR99
WS-0800200WG*	90-140	2	UG-387/U	EAR99
WS-0800300WG*	90-140	3	UG-387/U	EAR99
WS-0800600WG*	90-140	6	UG-387/U	EAR99
WS-0600100WG*	110-170	1	UG-387/U	EAR99
WS-0600200WG*	110-170	2	UG-387/U	EAR99
WS-0600300WG*	110-170	3	UG-387/U	EAR99
WS-0600600WG*	110-170	6	UG-387/U	EAR99
WS-0500100WG*	140-220	1	UG-387/U	EAR99
WS-0500200WG*	140-220	2	UG-387/U	EAR99
WS-0500300WG*	140-220	3	UG-387/U	EAR99
WS-0500600WG*	140-220	6	UG-387/U	EAR99

CONNECTORIZED MODULES

AMPLIFIERS

Part Number	Band (GHz)	Gain (dB)	Psat (dBm)	OIP3 (dBm)	Voltage (V)	Current (mA)	ECCN
ADM3-00001PD	0.0003-18	37	+23	+31	See Datasheet	120, 120, 100	EAR99
ADM1-0026PA	0.005-26.5	12	+20	+25	+3 to +7 VD and -0.3 to 0 VG	165	EAR99
ADM3-0022PA	0.01-22	35	+30	+31	See Datasheet	115, 115, 450	EAR99
APM-7099PA	0.1-20	14	+25	+24	+8 VC and +7 VB	72	EAR99
APM-7098PA	0.1-22	14	+23	+24	+8 VC and +7 VB	44	EAR99
ADM2-0035PA	0.1-35	23	+23	+30	+3 to +7 VD and -0.3 to 0 VG	320	EAR99
AMM-7473PC	0.4-26.5	16	+25	+34	+5 to +7 VD and -0.7 to -0.6 VG	150	EAR99
APM-7516PA	1-22	12.5	+23	+33	+5 VC and +5 VB	106	EAR99
APM-6849PA	2-29	11	+21	+21	+7 VC and +7 VB	21	EAR99
ADM1-8007PC	2-40	22	+22	+30	+3 to +6 VD and +3 to +6VG	213	EAR99
AMM-7199UC	11-38	20.5	+21	+31	+3 to +4 VD and -0.6 to -0.4 VG	180	EAR99
AMM-7200UC	12-46	18	+21.5	+29	+3 to +4 VD and -0.6 to -0.4 VG	180	EAR99
AMM-6702(UC/UC5)	20-55	24	+21	+27	+3 to +4 VD and -0.6 to -0.4 VG	180/230	EAR99
AMM-8211UC5	22-57	13	+21	+27	+3.5 to +5.5 VB	175	EAR99
AMM-7203UC	30-60	11.5	+16	+21	+1.5 to +3 VD and -0.6 to -0.4 VG	80	EAR99
A-3567UC	35-67	19	+20	+26	+3 to +4 VD and -0.6 to -0.4 VG	300	EAR99
AMM-0001M	45-95	11	+19	-	+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
ADM-8344PC	DC-18	18	1.4	+18	+27	+5 VD	103	EAR99
ADM-8558PC	0.005-20	15	2.2	+14	+23	+6 VD	50	EAR99
ADM-8622PC	0.0003-10	15	2.1	+13	+27	+3.3 VD	42	EAR99
ADM1-8096PC	0.09-6	22.5	1.5	+23	+35	+5 VD	84	EAR99
ADM1-8095PC	0.09-10	18	1.6	+18.5	+32	+5 VD	57	EAR99
ADM-8624PC	0.2-20	10.5	3	+13.5	+26	+5 VD	40	EAR99
ADM-8556PC	6-20	23	1.7	+15	+26	+3 VD	67	EAR99

BALUNS

Part Number	Band (GHz)	Amp Bal (dB)	Phase Bal (°)	Isolation (dB)	Turns Ratio	Total Insertion Loss as a Mode Converter (dB)	ECCN
BAL-0003	0.0002-3	0.05	1	8	1:2	4	EAR99
BALH-0003	0.0002-3	0.1	1	7	1:1	1.5	EAR99
BAL-0006	0.0002-6	0.05	1	9	1:2	4.5	EAR99
BALH-0006	0.0002-6	0.1	1	8	1:1	2.5	EAR99
BAL-0010	0.0002-10	0.2	2	9	1:2	5	EAR99
BALH-0010	0.0002-10	0.2	2	8	1:1	2.5	EAR99
BAL-0106	1.2-6	0.1	2	6	1:2	0.6	EAR99
BAL-0212	2.6-12	0.1	2	6	1:2	1	EAR99
BAL-0520	5-20	0.2	3	6	1:2	1.5	EAR99
EBAL-0026	0.01-26	1.0	1	3	1:2	3	EAR99
BAL-0026	0.0003-26.5	0.5	3	24	1:2	2.5	EAR99
BAL-0036	0.0003-36	0.5	3	24	1:2	3	EAR99
EBAL-0040	0.01-40	0.1	2	5	1:2	3	EAR99
BAL-0050	0.0003-50	0.7	4	25	1:2	7	EAR99
EBAL-0050	0.01-50	0.2	3	5	1:2	4	EAR99
BAL-0067	0.0003-67	0.7	4	25	1:2	8.5	EAR99
EBAL-0067	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
INV-0026	0.0001-26.5	2	13	EAR99
INV-0040	0.0001-40	2.5	13	EAR99
INV-0065	0.0001-65	5	12	EAR99

BIAS TEES

Part Number	Band (GHz)	DC Voltage (V)	DC Current (A)	Insertion Loss (dB)	ECCN
BT-0018	0.00004-18	30	0.5	0.6	EAR99
BTN1-0018	0.0005-18	50	1	0.7	EAR99
BTN2-0018	0.003-18	50	2	0.7	EAR99
BT-0025	0.00004-25	30	0.5	0.8	EAR99
BT-0026	0.01-26.5	30	0.5	0.8	EAR99
BT1-0026	0.0002-26.5	50	1	1	EAR99
BT2-0026	0.0002-26.5	50	2	1	EAR99
BTN1-0026	0.0005-26.5	50	1	1	EAR99
BTN2-0026	0.003-26.5	50	2	1	EAR99
BT-0040	0.000004-40	30	0.5	1.5	EAR99
BTN-0040	0.00004-40	30	0.5	1.5	EAR99
BT1-0040	0.0002-40	50	1	1.5	EAR99
BT2-0040	0.0002-40	50	2	1.5	EAR99
BTN1-0040	0.0005-40	50	1	1.5	EAR99
BTN2-0040	0.003-40	50	2	1.5	EAR99
BT-0050	0.0002-50	30	0.5	1.8	EAR99
BTN-0050	0.0002-50	30	0.5	1.8	EAR99
BT1-0050	0.0002-50	50	1	1.5	EAR99
BT2-0050	0.0002-50	50	2	1.5	EAR99
BTN1-0050	0.0005-50	50	1	1.5	EAR99
BTN2-0050	0.003-50	50	2	1.5	EAR99
BT-0065	0.000004-65	30	0.5	1.8	EAR99
BTN-0065	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
CE10-0R620T	0.6-20	10	27	±0.2	1.07	EAR99
CE10-0R640(T)	0.6-40	10	24/22	±0.2	1.07/1.08	EAR99
CE10-1R520(T)	1.5-20	10	32	±0.25	1.07	EAR99
CE10-1R540(T)	1.5-40	10	26/22	±0.25	1.07	EAR99
CE13-0220T	2-20	13	30	±0.15	1.07	EAR99
CE13-0240(T)	2-40	13	29/27	±0.15	1.07/1.08	EAR99
CE16-0220T	2-20	16	32	±0.1	1.07	EAR99
CE16-0240(T)	2-40	16	30/29	±0.1	1.07	EAR99
CE20-0R620T	0.6-20	20	26	±0.15	1.07	EAR99
CE20-1R640(T)	0.6-40	20	27/24	±0.15	1.07	EAR99
CE20-0220T	2-20	20	30	±0.1	1.07	EAR99
CE20-0R240(T)	2-40	20	33/28	±0.1	1.05/1.07	EAR99

COUPLERS, High Directivity Bridge

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

COUPLERS, Stripline Directional

Part Number	Band (GHz)	Coupling (dB)	Directivity (dB)	Flatness (dB)	VSWR	ECCN
C09-0R412	0.45-12	9	22	±0.7	1.15	EAR99
C09-0R418	0.45-18	9	22	±0.7	1.15	EAR99
C09-0R426	0.45-26.5	9	22	±0.7	1.15	EAR99
C09-0R430	0.45-30	9	20	±0.7	1.15	EAR99
C20-0R612	0.6-12	20	22	±0.6	1.2	EAR99
C10-0116	1-16	10	20	±0.5	1.15	EAR99
C20-0116	1-16	20	20	±0.6	1.15	EAR99
C20-0R518	0.5-18	20	22	±0.75	1.2	EAR99
C20-0R520	0.5-20	20	22	±0.75	1.2	EAR99
C13-0126	1-26.5	13	20	±0.6	1.15	EAR99
C16-1R718	1.7-18	16	20	±0.3	1.15	EAR99
C16-1R726	1.7-26.5	16	20	±0.4	1.15	EAR99
C10-0226	2-26.5	10	22	±0.6	1.15	EAR99
C20-0226	2-26.5	20	22	±0.75	1.25	EAR99
C13-0140	1-40	13	16	±0.1	1.2	EAR99
C20-0240	2-40	20	17	±0.75	1.3	EAR99
C13-0150	1-50	13	16	±0.75	1.2	EAR99
C10-0450	4-50	10	15	±0.5	1.35	EAR99
C10-0667	6-67	10	17	±0.8	1.2	EAR99
C16-0667	6-67	16	17	±0.9	1.25	EAR99
C20-0667	6-67	20	17	±0.8	1.25	EAR99
MC10-25110M2	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
C17-0R506	0.5-6	17	20	0.4	120	EAR99
C17-0R512	0.5-12	17	20	0.65	80	EAR99
C17-0R518	0.5-18	17	20	1	60	EAR99
CA-18	DC-18	> 30	22	0.35	200	EAR99
CA-26	DC-26.5	> 27	24	0.35	50	EAR99
CA-40	DC-40	> 27	24	0.5	20	EAR99
CA-50	DC-50	> 27	24	0.5	15	EAR99
C-0250	2-50	12	15	0.7	10	EAR99
C-0265	2-65	12	15	0.7	10	EAR99

***New Release**

All electrical specifications given are typical values.

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COUPLERS, Dual Directional

Part Number	Band (GHz)	Coupling (dB)	Directivity (dB)	Flatness (dB)	VSWR	ECCN
CD10-0106	0.7-6.3	10	25	±0.6	1.14	EAR99
CD10-0114	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
PT-0020	DC-20	16	2	EAR99
PT-0030(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
QH-0R518	0.5-18	±0.5	±3	1.5	20	EAR99
QH-0R71R3	0.65-1.3	±0.3	±3	0.5	16	EAR99
QH-0R714	0.7-14.5	±0.2	±2	1.2	22	EAR99
MQS-0209UB	2-9	±0.5	±3	2	16	EAR99
MQS-0218UA	2-18	±1	±3	1.4	17	EAR99
QH-0226	2-26.5	±0.25	±2	2	22	EAR99
MQH-2R58R5UB	2.5-8.5	±0.4	±3	2	23	EAR99
MQH-3R510UB	3.5-10	±0.4	±1.5	1.8	25	EAR99
MQS-0418UA	4-18	±0.4	±0.5	1.5	20	EAR99
QH-0440	4-40	±0.4	±5	2	18	EAR99
MQH-0517UB	5-17	±0.5	±6	1.6	23	EAR99
QH-0550	5-50	±0.6	±5	1	22	EAR99
QH-0867	8-67	±0.6	±6	1.2	18	EAR99
MQH-40110M2	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	3, 6	21, 15	EAR99
EQX-40	DC-40	3, 6	18	EAR99
MEQX-26AS	DC-26.5	3, 6, 10	18, 20, 20	EAR99
MEQ10-50AU	DC-50	10	15	EAR99

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FIXED FILTERS: Lowpass, Highpass, Bandpass

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)	ECCN
FLP-0490	4.9	0.6	30	9.3	EAR99
FLP-2650	26.5	1.5	15	36.5	EAR99
FLP-5000	50	2	15	62	EAR99

HIGHPASS

Part Number	Cutoff (GHz)	30dB Rejection Freq (GHz)	50dB Rejection Freq (GHz)	80dB Rejection Freq (GHz)	ECCN
FH-1700	17	14	11.5	6	EAR99
FH-2600	26	21.5	18	11	EAR99
FH-5500	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
FB-0905	9.05	8.45	9.65	3.00	EAR99
MFB-3475U	34.75	28.90	39.40	2.80	EAR99
FB-4000	40.00	34.40	45.60	3.00	EAR99
MFBC-00017M	42.00	34.50	49.50	2.00	EAR99
MFBC-00008M	44.50	36.70	51.10	2.15	EAR99
MFBC-00018M	53.75	44.50	62.50	2.15	EAR99
MFBC-00009M	55.60	46.50	63.50	2.25	EAR99
MFBC-00019M	70.00	58.30	77.70	2.85	EAR99
MFBC-00020M	93.50	77.35	107.80	3.60	EAR99

DIPLEXERS

Part Number	Passband Low (GHz)	Passband High (GHz)	Isolation (dB)	ECCN
MDPX-0305	DC-3	5-26.5	47	EAR99
MDPX-0407	DC-4	7-26.5	38	EAR99
MDPX-0609	DC-6	9-26.5	58	EAR99

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IQ MIXERS

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

[1]Differential IF IQ Mixer

MIXERS, Double Balanced

Part Number	RF/LO (GHz)	IF (GHz)	Conversion Loss (dB)	IIP3 (dBm)	LO Drive (dBm)	ECCN
MM1-0115HS	1-15	DC-2.5	7.5	+24	+17	EAR99
MM1-0212(L/H/S)S	2-12	DC-3	8/8.5/8.5	+14/+23/+26	+9/+15/+20	EAR99
MM1-0222(L/H)S	2-22	DC-3.5	7	+13/+23	+9/+15	EAR99
MM1-0312(H/S)S	3-12	DC-4.5	7.5	+23/+26	+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
MM1-0424SS	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
MM1-1140HS	11-40	DC-12	8	+21	+15	EAR99
MM1-1240SS	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
MM1-2567LS	25-67	DC-30	9	+9	+13	EAR99
MM1-30100LM	30-100	DC-20	8.5	see datasheet	+14	EAR99
MMH-35120HM[1]	35-120, 12-40	DC-14	18	+7	+15	3A001.b.7.c.1

[1]Harmonic Mixer

***New Release**

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MIXERS, Triple Balanced

Part Number	RF/LO (GHz)	IF (GHz)	Conversion Loss (dB)	IIP3 (dBm)	LO Drive (dBm)	ECCN
MT3A-0113HPA[1]	1-13	0.5-8.5	9.5	+28	+12	EAR99
MT3L-0113HS	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
T3-18GLS	0.01-18	0.001-10	7.5	+25	+20	EAR99
T3H-18GLS	0.01-18	0.01-18	9.5	+30	+20	EAR99
T3-20GLS	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
T3-0838GLN	8-38	0.01-10	8	+30	+20	EAR99
T3-1040GLN	10-40	1-18	8	+25	+20	EAR99
MM2-0530(L/H)S	5-30	2-20	10/9	+15/+21	+15/+20	EAR99

[1]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
MMD-0415HS	Doubler	2-7.5	4-15	27	36	EAR99
MMD-1030(L/H)S	Doubler	5-15	10-30	38/41	46/51	EAR99
MMD-1250HU	Doubler	6-25	12-50	32	40	EAR99
MMD-1648LS	Doubler	8-24	16-48	44	69	EAR99
MMD-2060(L/H)U	Doubler	10-30	20-60	37/38	41/40	EAR99
MMD-20100HM	Doubler	10-50	20-100	24.5	33	3A001.b.7.b.1
MMD-3567LU	Doubler	17.5-33.5	35-67	38	44	EAR99
MMD-3580LU-KW	Doubler	17.5-40	35-80	38	44	EAR99
MMD-40120HM	Doubler	20-60	40-120	30	40	3A001.b.7.b.1
MMQ-40125HM	Quadrupler	10-31.25	40-125	19	12	3A001.b.7.b.1
NLTL-6273S	Comb Generator	0.7-5	0.7-40	–	–	EAR99
NLTL-6275U/USW	Comb Generator	3-15	3-85	–	–	EAR99

ACTIVE MULTIPLIERS

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

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POWER DIVIDERS, High Isolation

Part Number	Band (GHz)	Loss (dB)	Amplitude Balance (dB)	Isolation (dB)	ECCN
PBR-0003	.0003-3	1.25	±0.4	45	EAR99
PBR-0006	.0003-6	1.5	±0.5	40	EAR99
PBR-0012	.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
PD-0R413	0.4-13.2	1	±0.05	±1	24	EAR99
PD-0R426	0.4-26	2	±0.05	±2	24	EAR99
PD-0R510	0.5-10	0.9	±0.1	±1	22	EAR99
PD-0R618	0.6-18	1	±0.05	±1	22	EAR99
PD-0R636	0.6-36	2	±0.1	±3	22	EAR99
PD-0109	1-9	0.75	±0.1	±1	22	EAR99
PD-0126	1-26	1	±0.1	±3	20	EAR99
PD-0140	1-40	1.5	±0.2	±2	20	EAR99
PD-0150	1-50	2	±0.25	±3	20	EAR99
PD-0165	1-65	5	±0.25	±3	20	EAR99
PD-0218	2-18	1	±0.2	±2	22	EAR99
PD-0220	2-20	1	±0.2	±2	22	EAR99
PD-0426	4-26.5	0.8	±0.2	±2	18	EAR99
PD-0440	4-40	1	±0.2	±3	18	EAR99
PD-0450	4-50	1.2	±0.5	±5	18	EAR99
PD-0465	4-65	2	±0.5	±5	18	EAR99
MPDW-10110M2	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
PD3-0R412	0.4-12	1.5	±0.1	±2	23	EAR99
PD3-0R616	0.6-16	1.5	±0.1	±2	24	EAR99
PD3-0126	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
PD4-0R518	0.5-18	1.5	±0.25	±3	20	EAR99
PD4-0R526	0.5-26.5	2.5	±0.25	±3	19	EAR99
PD4-0R532	0.5-32	2.5	±0.3	±4	19	EAR99
PD4-0120	1-20	1.5	±0.25	±3	20	EAR99
PD4-0126	1-26.5	1.5	±0.3	±3	20	EAR99
PD4-0140	1-40	2.5	±0.4	±4	19	EAR99
PD4-0150	1-50	4	±0.5	±5	20	EAR99
PD4-0218	2-18	1.2	±0.2	±2	20	EAR99

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POWER DIVIDERS, Resistive 1:2

Part Number	Band (GHz)	Loss (dB)	Amplitude Balance (dB)	Phase Balance (°)	ECCN
PD-0010	DC-10	0.25	±0.1	±1	EAR99
PD-0020	DC-20	0.5	±0.2	±2	EAR99
PD-0030	DC-30	0.5	±0.25	±2	EAR99
PD-0040	DC-40	0.75	±0.25	±2	EAR99
MPDR-00110M2	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
ATN06-0067(-2HV/-3HV)	DC-67	6.4	see datasheet	23	EAR99
ATN10-0067(-2HV/-3HV)	DC-67	10.5	see datasheet	22	EAR99
ATN06-00110(-2W/-3W)	DC-110	6.5	see datasheet	20	EAR99
ATN10-00110(-2W/-3W)	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
HLM-8011U[1]	DC-30	0.8	+7@30GHz	1	4.5	+10	EAR99
HLM-40U[1]	DC-40	1	+16@20GHz	4	20	15	EAR99

[1]Power ratings are dependent on frequency, temperature, and pulse conditions

TERMINATIONS

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

THUMBWHEEL

Part Number	Description	ECCN
TW-1	quick, secure, wrenchless connection for SMA, 2.92mm and 2.4mm	EAR99

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SURFACE MOUNTS

AMPLIFIERS, Driver

Part Number	Band (GHz)	Gain (dB)	Psat (dBm)	OIP3 (dBm)	Bias Voltage (V)	Bias Current (mA)	Package	ECCN
ADM-0012-5931SM	DC-12	11	+18	+26	+3 to +7 VD and -0.3 to 0 VG	85	3mm QFN	EAR99
ADM-0026-5929SM	DC-26.5	13	+20	+26	+3 to +7 VD and -0.3 to 0 VG	165	4mm QFN	EAR99
APM-7099SM[1]	0.01-20	14	+25	+27	+5 to +8 VC and +5 to +8 VB	72	4mm QFN	EAR99
APM-7098SM[1]	0.1-22	15	+23	+22	+5 to +8 VC and +5 to +8 VB	44	4mm QFN	EAR99
AMM-7473PSM	0.4-27	17	+25	+34	+5 to +7 VD and -0.7 to -0.6 VG	150	4mm QFN	EAR99
APM-7516PSM	1.5-20	11	+22	+33	+5 VC and +5 VB	106	4mm QFN	EAR99
ADM-8006PSM	2-30	23	23	30	+3V to +6V VG and VD	218	4mm QFN	EAR99
APM-6849SM[1]	2-30	11	+21	+20	+5 VC and +5 VB	23	3mm QFN	EAR99
ADM-8007PSM	2-40	23	+24	+30	+3 to +6 VD and +3 to +6 VG	218	4mm QFN	3A001.b.2.d
AMM-7199SM	11-38	21	+21	+29	+3 to +4 VD and -0.6 to -0.4 VG	180	3mm QFN	3A001.b.2.d
AMM-7200SM	12-46	18	+22	+29	+3 to +4 VD and -0.6 to -0.4 VG	180	3mm QFN	3A001.b.2.d
AMM-6702SM	20-50	28	+22	+27	+3 to +4 VD and -0.6 to -0.4 VG	200	4mm KFN	3A001.b.2.d

[1]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
ADM-8622PSM	DC-10	15.5	2	+13.5	+26	+3.3 VD	40	1.3x2mm DFN	EAR99
AKA-1300PSM	DC-14	13	5	+14	+28	+3.8 VD	50	1.3x2mm DFN	EAR99
AKA-1310PSM	DC-14	13	5	+14	+28	+4.6 VD	50	1.3x2mm DFN	EAR99
AKA-1400PSM	DC-14	17	4	+15	+28	+3.8 VD	50	1.3x2mm DFN	EAR99
AKA-1500PSM	DC-14	19	4	+16	+28	+4.2 VD	50	1.3x2mm DFN	EAR99
ADM-9028PSM*	DC-20	17	2.5	+14	+23	+6 V	50	4mm QFN	EAR99
ADM-8350PSM	0.09-6	22	1.8	+22	+39.5	+5 VD	84	1.3x2mm DFN	EAR99
ADM-8096PSM	0.09-6	22	1.5	+21	+33	+5 VD	58	1.3x2mm DFN	EAR99
ADM-8095PSM	0.09-10	18	1.2	+18	+30	+5 VD	39	1.3x2mm DFN	EAR99
ADM-8624PSM	0.2-20	11.5	2.8	+13.5	+25	+5 VD	40	1.3x2mm DFN	EAR99
ADM-8475PSM	0.5-18	13	2	+16	+27	+5 VD	40	1.3x2mm DFN	EAR99
ADM-8625PSM	0.75-8	18	1.5	+17	+26	+5 VD	49	3mm QFN	EAR99
ADM-8536PSM	2-20	10	2.5	+13	+25	+5 VD	41	1.3x2mm DFN	EAR99
ADM-9027PSM*	2-24	17	1.8	+16	+25	+6 V	60	4mm QFN	EAR99

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ATTENUATORS

Part Number	Band (GHz)	Attenuation (dB)	Return Loss (dB)	Package	ECCN
ATN00-0040PSM	DC-40	0	27	1.3x2mm DFN	EAR99
ATN01-0040PSM	DC-40	1	27	1.3x2mm DFN	EAR99
ATN02-0040PSM	DC-40	2	26	1.3x2mm DFN	EAR99
ATN03-0040PSM	DC-40	3	25	1.3x2mm DFN	EAR99
ATN04-0040PSM	DC-40	4	21	1.3x2mm DFN	EAR99
ATN05-0040PSM	DC-40	5	20	1.3x2mm DFN	EAR99
ATN06-0040PSM	DC-40	6	22	1.3x2mm DFN	EAR99
ATN07-0040PSM	DC-40	7	21	1.3x2mm DFN	EAR99
ATN08-0040PSM	DC-40	8	21	1.3x2mm DFN	EAR99
ATN09-0040PSM	DC-40	9	20	1.3x2mm DFN	EAR99
ATN10-0040PSM	DC-40	10	25	1.3x2mm DFN	EAR99
ATN15-0040PSM	DC-40	15	22	1.3x2mm DFN	EAR99
ATN20-0040PSM	DC-40	20	22	1.3x2mm DFN	EAR99
ATN03-0050CSP1	DC-50	3	20	1.5mm CSP	EAR99
ATN06-0050CSP1	DC-50	6	20	1.5mm CSP	EAR99
ATN10-0050CSP1	DC-50	10	24	1.5mm CSP	EAR99

BALUNS

Part Number	Band (GHz)	Amp Bal (dB)	Phase Bal (°)	Isolation (dB)	Impedance Ratio	Total Insertion Loss as a Mode Converter (dB)	Package	ECCN
BAL-0003SMG	0.0005-3	0.3	3	9	1:2	3.8	SMG	EAR99
BALH-0003SMG	0.0005-3	0.2	2	7	1:1	2	SMG	EAR99
BALE-0003SMG	0.01-3	0.2	1	9	1:2	4	SMG	EAR99
BALHE-0003SMG	0.01-3	0.2	2	7	1:1	2	SMG	EAR99
BAL-0006SMG	0.0005-6	0.4	3	8	1:2	4	SMG	EAR99
BALH-0006SMG	0.0005-6	0.2	3	6	1:1	2	SMG	EAR99
BALE-0006SMG	0.01-6	0.4	1	9	1:2	4	SMG	EAR99
BALHE-0006SMG	0.01-6	0.2	3	6	1:1	3	SMG	EAR99
BAL-0009SMG	0.0005-9	0.6	5	8	1:2	4.5	SMG	EAR99
BALH-0009SMG	0.0005-9	0.8	5	6	1:1	2.5	SMG	EAR99
BALE-0009SMG	0.01-9	0.5	4	9	1:2	4.5	SMG	EAR99
BALHE-0009SMG	0.01-9	0.5	5	9	1:1	4.5	SMG	EAR99
MBAL-0104SM	1-4	0.2	2	8	1:2	2.5	4mm QFN	EAR99
BAL-0208SMG	2-8	0.3	1	17	1:2	2.5	SMG	EAR99
BAL-0416SMG	4-16	0.4	1	15	1:2	3.3	SMG	EAR99
BAL-0012SSG	0.01-12	0.6	5	8	1:2	5	SSG	EAR99
BALH-0012SSG	0.01-12	0.6	5	5.5	1:1	2	SSG	EAR99
BAL-0020SLG	0.01-20	0.4	5	12	1:2	4.5	SLG	EAR99
MBAL-0220CSP2	2-20	0.3	3	5.3	1:2	1.9	2.5mm CSP2	EAR99
MBAL-0220SM	2-20	0.25	3	10	1:2	6	4mm QFN	EAR99
BAL-0620SMG	6-20	0.2	1	14	1:2	2.6	SMG	EAR99
BAL-0032SSG	0.01-32	0.5	5	8	1:2	5	SSG	EAR99
MBAL-1445SM	14-45	0.2	2	18	1:2	4.5	4mm QFN	EAR99

***New Release**

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BIAS TEES

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

COUPLER, Directional

Part Number	Band (GHz)	VSWR	Mean Coupling (dB)	Directivity (dB)	Package	ECCN
MC16-0222SM	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
MQS-0218SM	2-18	±1	±3	15	4mm QFN	EAR99
MQS-0518SM	5-18	±0.5	±2.5	17	4mm QFN	EAR99

EQUALIZERS, Positive Gain Slope

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

DIPLEXERS & QUADPLEXERS

Part Number	Passband (GHz)	Isolation (dB)	Isolation (dB)	Package	ECCN
DPX-M50(-1/-2)	DC-0.035 / 0.07-10	24	Diplexer	SM	EAR99
DPX-0R5(-1/-2)	DC-0.36 / 0.7-8	24	Diplexer	SM	EAR99
DPX-1(-1/-2)	DC-0.85 / 1.4-5	24	Diplexer	SM	EAR99
DPX-2(-1/-2)	DC-1.5 / 2.7-7	25	Diplexer	SM	EAR99
DPX-3(-1/-2)	DC-2.3 / 4.2-8	25	Diplexer	SM	EAR99
DPX-4(-1/-2)	DC-2.8 / 5.5-12	30	Diplexer	SM	EAR99
MDPX-0305PSM	DC-3 / 5-26.5	37	Diplexer	3mm QFN	EAR99
MDPX-0407PSM	DC-4 / 7-26.5	38	Diplexer	3mm QFN	EAR99
MMPX-00001PSM*	2-4 / 6-8 / 10-12 / 14-16	see datasheet	Quadplexer	6mm QFN	EAR99
MMPX-00002PSM*	4-6 / 8-10 / 12-14 / 16-18	see datasheet	Quadplexer	6mm QFN	EAR99

***New Release**

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FIXED FILTERS, Lowpass

Part Number	3dB Cutoff (GHz)	Passband Insertion Loss (dB)	Passband Return Loss (dB)	Stopband Frequency (GHz)	Stopband Suppression (dB)	Package	ECCN
MFLP-00001PSM	6.10	0.80	21	7.50-40.00	57	4mm QFN	EAR99
MFLP-00002PSM	9.40	0.70	23	12.00-40.00	52	4mm QFN	EAR99
MFLP-00003PSM	12.30	0.50	21	16.00-40.00	52	4mm QFN	EAR99
MFLP-00004PSM	15.40	0.60	21	20.00-40.00	49	4mm QFN	EAR99
MFLP-00005PSM	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
MFHP-00001PSM	2.00	0.40	19	DC-1.00	79	4mm QFN	EAR99
MFHP-00004PSM	6.00	0.40	20	DC-3.30	60	4mm QFN	EAR99
MFHP-00005PSM	8.00	0.50	21	DC-4.80	65	4mm QFN	EAR99
MFHP-00002PSM	9.80	0.40	17	DC-7.50	53	4mm QFN	EAR99
MFHP-00006PSM	12.00	0.50	21	DC-8.30	55	4mm QFN	EAR99
MFHP-00007CSP1	14.32	0.52	20	DC-11.40	62	1.5mm CSP1	EAR99
MFHP-00003PSM	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
MFQH-00001PSM	19.80	18.50-21.20	3.20	24	13	5mm QFN	EAR99

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
MFBT-00001PSM	3.50-9.50	3.00-10.00	6.50	15	35	33	4mm QFN	3A001.b.5.a
MFBT-00002PSM	5.50-15.50	4.50-16.50	6.50	15	35	33	4mm QFN	3A001.b.5.a
MFBT-00003PSM	10.00-26.00	8.00-30.00	7.50	10	35	35	4mm QFN	3A001.b.5.a

***New Release**

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FIXED FILTERS, Bandpass

Part Number	Center Freq (GHz)	1dBc Passband (GHz)	Insertion Loss in Passband (dB)	Package	ECCN
MFBP-00010PSM	3.45	2.20-5.90	1.50	5mm QFN	EAR99
MFBP-00011PSM	4.00	2.30-8.05	1.24	5mm QFN	EAR99
MFBP-00001PSM	5.40	4.70-6.20	1.30	4mm QFN	EAR99
MFBP-00002PSM	6.60	5.90-7.50	1.50	4mm QFN	EAR99
MFBP-00004PSM	7.75	6.05-10.30	1.85	5mm QFN	EAR99
FB-0785SMG	7.85	7.25-8.45	2.20	SMG	EAR99
FB-0850SM	8.50	7.85-9.20	2.00	SM	EAR99
MFBC-00001PSM	8.70	7.40-9.90	2.00	5mm QFN	EAR99
MFBP-00059PSM*	8.80	7.0-11.0	1.25	5mm QFN	EAR99
FB-0900SM	9.00	8.40-9.60	2.20	SM	EAR99
FB-0955SM	9.55	8.90-10.20	2.00	SM	EAR99
MFBA-00004PSM	10.00	8.40-12.25	1.90	5mm QFN	EAR99
MFBP-00006PSM	10.20	8.20-13.50	1.83	5mm QFN	EAR99
MFBP-00005PSM	10.40	6.25-18.05	1.10	5mm QFN	EAR99
FB-1050SM	10.50	9.60-11.40	2.00	SM	EAR99
MFBC-00002PSM	11.00	9.13-12.40	1.80	5mm QFN	EAR99
FB-1140SM	11.40	10.45-12.35	2.00	SM	EAR99
MFBP-00008PSM	11.85	10.40-13.85	1.73	5mm QFN	EAR99
MFBA-00003PSM	12.00	10.10-14.10	2.10	5mm QFN	EAR99
FB-1215SM	12.15	11.35-12.95	2.00	SM	EAR99
FB-1300SMG	13.00	12.00-14.00	2.00	SMG	EAR99
MFBP-00029PSM	13.07	12.24-13.95	2.65	5mm QFN	EAR99
MFBP-00007PSM	13.40	10.25-18.25	1.80	5mm QFN	EAR99
MFBC-00003PSM	14.15	11.85-15.90	1.70	5mm QFN	EAR99
FB-1445SM	14.45	13.20-15.70	2.00	SM	EAR99
MFB-1445SM	14.45	13.60-15.10	3.80	3mm QFN	EAR99
FB-1575SMG	15.75	14.60-16.90	2.00	SMG	EAR99
MFBP-00009PSM	15.85	14.10-17.85	1.86	5mm QFN	EAR99
MFBA-00001PSM	16.00	14.10-17.90	2.40	5mm QFN	EAR99
MFBC-00010PSM	16.50	14.60-18.90	1.70	5mm QFN	EAR99
MFBP-00030PSM	16.94	16.19-17.72	3.16	5mm QFN	EAR99
MFBC-00004PSM	17.50	14.90-19.90	1.60	5mm QFN	EAR99
MFBP-00060PSM*	17.60	13.8-22.5	0.95	5mm QFN	EAR99
MFBC-00011PSM	18.50	16.15-20.70	1.70	5mm QFN	EAR99
MFBP-00034PSM*	19.61	18.05-21.3	2.25	5mm QFN	EAR99
MFBC-00012PSM	20.30	17.20-23.40	1.55	5mm QFN	EAR99
MFBP-00036PSM*	20.56	17.55-24.09	1.55	5mm QFN	EAR99
MFBC-00005PSM	22.00	18.60-25.10	1.40	5mm QFN	EAR99
MFBA-00002PSM	22.20	18.10-26.00	1.80	5mm QFN	EAR99
MFBP-00035PSM*	22.47	20.56-24.55	2.21	5mm QFN	EAR99
MFBC-00013PSM	22.50	19.50-26.20	1.50	5mm QFN	EAR99
MFBP-00037PSM*	25.70	22.45-29.43	1.58	5mm QFN	EAR99

***New Release**

All electrical specifications given are typical values.

FIXED FILTERS, Bandpass (cont.)

Part Number	Center Freq (GHz)	1dBc Passband (GHz)	Insertion Loss in Passband (dB)	Package	ECCN
MFBC-00014PSM	25.75	22.20-29.90	1.75	5mm QFN	EAR99
MFBC-00006PSM	28.00	23.60-32.20	1.6	5mm QFN	EAR99
MFBC-00015PSM	30.00	25.40-34.70	1.39	5mm QFN	EAR99
MFBP-00038PSM*	30.71	27.69-34.06	2.05	5mm QFN	EAR99
MFBP-00058PSM*	30.90	29.9-32.0	2.74	5mm QFN	EAR99
MFBP-00028PSM	31.52	30.82-32.24	3.25	5mm QFN	EAR99
MFBP-00031PSM	32.58	32.14-33.03	4.31	5mm QFN	EAR99
MFBP-00033PSM	32.63	31.95-33.33	3.35	5mm QFN	EAR99
MFBC-00007PSM	35.00	30.10-39.30	1.5	5mm QFN	EAR99
MFBP-00027PSM	35.13	34.15-36.13	3.1	5mm QFN	EAR99
MFBP-00039PSM*	35.63	33.08-38.38	2.46	5mm QFN	EAR99
MFBC-00016PSM	36.00	30.60-41.00	1.21	5mm QFN	EAR99
MFBP-00032PSM	36.04	35.2-36.89	3.45	5mm QFN	EAR99

LIMITERS

Part Number	Band (GHz)	Loss (dB)	Flat Leakage (dBm)	Average Power Handling (W)	Peak Power Handling (W)	P1dB (dBm)	Package	ECCN
DLM-10SM[1]	DC-10	0.75	Adjustable	0.5	—	+10	3mm QFN	EAR99
HLM-100001PSM[1]	DC-10	0.9	+8.5@10GHz	10	—	+11	3mm QFN	EAR99
HLM-20PSM[1]	DC-20	0.5	+13@20GHz	5	50	+15	4mm QFN	EAR99
HLM-40PSM[1]	DC-40	0.5	+15@20GHz	2.5	9.5	+14	4mm QFN	EAR99
HLM-8010CSP1[1]	DC-40	0.5	+11@20GHz	1.9	3.2	+11	1.5mm CSP1	EAR99
HLM-70CSP2*[1]	DC - 70	0.5	+13@40GHz	1	—	+15	2.5mm CSP2	EAR99

[1]Power ratings are dependent on frequency, temperature, and pulse conditions

IQ MIXERS

Part Number	RF/LO (GHz)	IF (GHz)	Conversion Loss (dB)	Image Rej (dBc)	L-R Isolation (dB)	Package	ECCN
MMIQ-0106HCSM	1.5-5.5	DC-3	8	33	62	5mm QFN	EAR99
MMIQ-0205HSM	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

***New Release**

All electrical specifications given are typical values.

IQ MIXERS, Integrated Drive

Part Number	RF/LO (GHz)	IF (GHz)	Conversion Loss (dB)	Image Rej (dBc)	LO Drive (dBm)	Package	ECCN
MMIQA-0218HPSM	2-18	DC-3	7.5	28	contact support	7mm QFN	EAR99
MMIQA-0626HPSM	6-26	DC-6	9	30	-2 to +8	7mm QFN	EAR99
MMIQA-1040HPSM	10-40	DC-10	9	29	contact support	7mm QFN	EAR99

MIXERS, Double Balanced

Part Number	RF/LO (GHz)	IF (GHz)	Conversion Loss (dB)	IIP3 (dBm)	LO Drive (dBm)	Package	ECCN
MM1-0115HPSM	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
MM1-0320HSM	3-20	DC-4	8	+20	+15	3mm QFN	EAR99
MM1-0424SSM	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
MM1-0726HSM	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
MM1-0832HPSM	8-32	DC-12	8	+23	+15	3mm QFN	EAR99
MM1-1040HPSM	10-40	DC-12	9	+20	+15	3mm QFN	EAR99
MM1-1130HSM	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
MM1-2567LSM	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
MM2D-0528SCSM[1]	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
MT3D-0113LSM[1]	1.5-13	see plots	7.5	+27	+17	4mm QFN	EAR99
MT3D-0325HCSM[1]	3-25	DC-6	7.5	+25	+20	4mm QFN	EAR99
MT3L-0113HSM	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

[1]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
MT3A-0113HCSM	1.5-13	0.5-8.5	9.5	+28	+5 to +15	6mm QFN	EAR99
MM1A-0222HPSM	2-22	DC-3.5	7.5	+17	+3 to +15	5mm QFN	EAR99
MM1A-0622HPSM	6-22	DC-9	7.5	+21	+3 to +15	5mm QFN	EAR99
MM2A-0530HPSM*	5-30	2-22	8	+25	-3 to +3	7mm QFN	EAR99
MM1A-0832HPSM	8-32	DC-12	9	+24	-6 to +6	3x4.6mm QFN	EAR99
MM1A-1040HPSM	10-40	DC-12	10	+23	+3 to +9	3x4.6mm QFN	EAR99
MM1A-1855HPSM	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
MMD-0415HPSM	Doubler	2-7.5	4-15	27	38	3mm QFN	EAR99
MMD-1030(LC/H)SM	Doubler	5-15	10-30	31/34	43/46	3mm QFN	EAR99
MMD-2050(L/H)SM	Doubler	10-25	20-50	35/33	46/40	3mm QFN	EAR99
NLTL-6794SM	Comb Generator	0.1-1	0.1-30	—	—	6mm QFN	EAR99
NLTL-6796SM	Comb Generator	0.5-3.5	0.5-50	—	—	6mm QFN	EAR99
NLTL-6273SM	Comb Generator	0.7-5	0.7-24	—	—	5mm QFN	EAR99

POWER DIVIDERS 1:2

Part Number	Band (GHz)	Excess Loss (dB)	Amp Bal (dB)	Isolation (dB)	Type	Package	ECCN
PD-0030SMG	DC-30	1	±0.25	6	Resistive	SMG	EAR99
PBR-0003SMG	0.01-3	1.5	±0.8	40	High Isolation	SMG	EAR99
PBR-0006SMG	0.01-6	1.7	±0.8	35	High Isolation	SMG	EAR99
PBR-0012SMG	0.01-12	1.7	±1	30	High Isolation	SMG	EAR99
MPD2-00001PSM*	0.4-4	0.9	±0.02	16	High Isolation	1.3x2mm DFN	EAR99
MPD-0226SM	2-26.5	1.5 to 3	±0.2	20	Wilkinson	4mm QFN	EAR99
PD-0434SM	4-34	1.5	±0.25	20	High Isolation	SM	EAR99
PD-0530SMG	5-30	1.5	±0.1	25	Wilkinson	SMG	EAR99
PD-0535SM	5-35	1.5	±0.25	18	Wilkinson	SM	EAR99
MPDR-0070CSP2	DC-70	1.5	±0.25	see table	Resistive	2.5mm CSP2	EAR99
MPDW-0670CSP2	6-70	1	±0.1	24	Wilkinson	2.5mm CSP2	EAR99

SWITCHES

Part Number	Band (GHz)	Insertion Loss (dB)	Isolation dB)	IIP3 (dB)	Package	ECCN
MSW2-1001ELGA	0.1-40	1.2	38	50	2.25mm LGA	EAR99

***New Release**

All electrical specifications given are typical values.

BARE DIE

AMPLIFIERS, Driver

Part Number	Band (GHz)	Gain (dB)	Psat (dBm)	OIP3 (dBm)	Voltage (V)	Current (mA)	ECCN
ADM-5931CH	DC-28	11	+18	+27	+3 to +7 VD and -0.3 to 0 VG	85	EAR99
ADM-5974CH	DC-35	14	+22	+27	+3 to +7 VD and -0.3 to 0 VG	160	3A001.b.2.d
AMM-9024CH	DC-70	11.5	+12.5	-	+5 VD and -0.25 VG	45	3A001.b.2.d
APM-7099CH[1]	0.01-20	14	+25	+24	+5 to +8 VC and +5 to +8 VB	72	EAR99
AMM-9025CH*	0.0001-65	14	-	+26	+6V	98	3A001.b.2.d
APM-7098CH[1]	0.1-22	14	+23	+24	+5 to +8 VC and +5 to +8 VB	44	EAR99
APM-6849CH[1]	2-30	11	+21	+21	+5 VC and +5 VB	23	EAR99
AMM-7199CH	11-38	20.5	+21	+31	+3 to +4 VD and -0.6 to -0.4 VG	180	3A001.b.2.d
AMM-7200CH	12-46	18	+21.5	+29	+3 to +4 VD and -0.6 to -0.4 VG	180	3A001.b.2.d
AMM-6702CH	20-55	24	+21	+27	+3 to +4 VD and -0.6 to -0.4 VG	200	3A001.b.2.d
AMM-7203CH	30-60	11.5	+16	+21	+1.5 to +3 VD and -0.6 to -0.4 VG	80	3A001.b.2.d

[1]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
AKA-1300D	DC-14	13	5	+14	+28	+3.8 VD	50	EAR99
AKA-1310D	DC-14	13	5	+14	+28	+4.6 VD	50	EAR99
AKA-1400D	DC-14	17	4	+15	+28	+3.8 VD	50	EAR99
AKA-1500D	DC-14	19	4	+16	+28	+4.2 VD	50	EAR99
ADM-8558CH	DC-20	16	1.8	+14	+23	+6 VD	50	EAR99
ADM-8096CH	0.09-6	22	1.9	+21	+33	+5 VD	58	EAR99
ADM-8095CH	0.09-10	18	1.5	+18	+30	+5 VD	39	EAR99
ADM-8556CH	6-20	24	1.3	+16	+27	+3 VD	67	EAR99

***New Release**

All electrical specifications given are typical values.

ATTENUATORS

Part Number	Band (GHz)	Attenuation (dB)	Return Loss (dB)	ECCN
ATN00-0067CH	DC-67	0	32	EAR99
ATN01-0067CH	DC-67	1	33	EAR99
ATN02-0067CH	DC-67	2	35	EAR99
ATN03-0067CH	DC-67	3	37	EAR99
ATN04-0067CH	DC-67	4	36	EAR99
ATN05-0067CH	DC-67	5	36	EAR99
ATN06-0067CH	DC-67	6	37	EAR99
ATN07-0067CH	DC-67	7	33	EAR99
ATN08-0067CH	DC-67	8	38	EAR99
ATN09-0067CH	DC-67	9	38	EAR99
ATN10-0067CH	DC-67	10	38	EAR99
ATN13-0067CH*	DC-67	13	32	EAR99
ATN15-0067CH*	DC-67	15	34	EAR99
ATN17-0067CH*	DC-67	17	30	EAR99
ATN20-0067CH*	DC-67	20	35	EAR99
ATN00-00110CH	DC-110	0	21	EAR99
ATN01-00110CH	DC-110	1	20	EAR99
ATN02-00110CH	DC-110	2	23	EAR99
ATN03-00110CH	DC-110	3	22	EAR99
ATN04-00110CH	DC-110	4	22	EAR99
ATN05-00110CH	DC-110	5	25	EAR99
ATN06-00110CH	DC-110	6	26	EAR99
ATN07-00110CH	DC-110	7	27	EAR99
ATN08-00110CH	DC-110	8	26	EAR99
ATN09-00110CH	DC-110	9	26	EAR99
ATN10-00110CH	DC-110	10	25	EAR99
ATN13-00110CH*	DC-110	13	25	EAR99
ATN15-00110CH*	DC-110	15	26	EAR99
ATN17-00110CH*	DC-110	17	29	EAR99
ATN20-00110CH*	DC-110	20	23	EAR99

BALUNS

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

***New Release**

All electrical specifications given are typical values.

DIPLEXERS

Part Number	Passband Low (GHz)	Passband High (GHz)	Isolation (dB)	ECCN
MDPX-0305CH	DC-3	5-26.5	40	EAR99
MDPX-0407CH	DC-4	7-26.5	38	EAR99
MDPX-0609CH	DC-6	9-26.5	51	EAR99
MDPX-0710CH	DC-7	7-26.5	45	EAR99
MDPX-2330CH	DC-23	30-60	20	EAR99
MDPX-2734CH	DC-27	34-60	20	EAR99
MDPX-00002CH	DC-35	43.3-59.9	41	EAR99
MDPX-00001CH[1]	13.2-15.4	17.4-20.3	59	EAR99
				[1]Duplexer

EQUALIZERS, Positive Gain Slope

Part Number	Band (GHz)	Low Freq Attenuation (dB)	Typ Return Loss (dB)	ECCN
MEQX-7ACH	DC-7	3, 6, 10 & 12.5	29, 29, 27, 27	EAR99
MEQX-14ACH	DC-14	3, 6 & 10	23, 22, 24	EAR99
MEQX-20ACH	DC-20	3, 5, 6, 7.5, 10 & 11	21, 22, 21, 23, 25, 23	EAR99
MEQX-30ACH	DC-30	3, 6 & 10	20	EAR99
MEQX-60ACH	DC-60	3, 6 & 10	15	EAR99
MEQX-70ACH	DC-70	**4*, 6*, 8* & 10***	31, 29, 33, 25	EAR99

FIXED FILTERS, Lowpass

Part Number	3dB Cutoff (GHz)	Passband Insertion Loss (dB)	Passband Return Loss (dB)	Stopband Frequency (GHz)	Stopband Suppression (dB)	ECCN
MFLP-00001CH	6.15	0.50	20	7.50-40.00	45	EAR99
MFLP-00002CH	9.30	0.50	24	12.00-40.00	52	EAR99
MFLP-00003CH	12.20	0.50	20	16.00-40.00	46	EAR99
MFLP-00006CH	12.94	0.50	24	15.80-50.00	48	EAR99
MFLP-00004CH	15.20	0.50	21	20.00-40.00	44	EAR99
MFLP-00005CH	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
MFHP-00001CH	2.00	0.40	20	DC-1.00	79	EAR99
MFHP-00002CH	10.00	0.90	13	DC-7.50	53	EAR99
MFHP-00003CH	15.50	1.30	11	DC-12.70	48	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
MFQH-00001CH	19.90	18.50-21.30	3.40	25	12	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
MFBP-00040CH	3.31	1.62-6.78	1.01	EAR99
MFBP-00001CH	5.40	4.70-6.10	1.30	EAR99
MFBP-00002CH	6.60	5.90-7.40	1.53	EAR99
MFBA-00004CH	10.00	8.40-12.50	1.90	EAR99
MFBP-00041CH	10.10	5.30-19.24	1.05	EAR99
MFB-1100CH	11.00	9.50-12.50	2.00	EAR99
MFBA-00003CH	12.00	10.10-14.10	2.10	EAR99
MFBP-00026CH	12.50	10.00-14.75	1.20	EAR99
MFBP-00054CH	13.70	11.10-17.00	1.43	EAR99
MFBP-00043CH	14.85	12.14-18.16	1.37	EAR99
MFBB-00001CH	15.10	14.60-15.65	2.57	EAR99
MFB-1600CH	16.00	12.60-18.60	1.50	EAR99
MFBA-00001CH	16.00	14.10-17.90	2.40	EAR99
MFBP-00048CH	16.18	15.15-17.29	2.04	EAR99
MFBP-00025CH	16.50	13.15-19.45	1.20	EAR99
MFBP-00052CH	18.60	14.70-23.60	1.39	EAR99
MFBP-00053CH	18.90	15.80-22.70	1.40	EAR99
MFB-2025CH	20.25	16.75-24.40	1.50	EAR99
MFBP-00044CH	20.92	17.83-24.46	1.52	EAR99
MFBB-00002CH	21.75	20.25-23.25	1.60	EAR99
MFBP-00024CH	22.00	18.65-25.80	1.43	EAR99
MFBA-00002CH	22.20	18.10-26.00	1.80	EAR99
MFB-2400CH	24.00	21.00-27.00	1.50	EAR99
MFB-2500CH	25.00	18.00-32.00	1.50	EAR99
MFBP-00042CH	26.25	17.70-38.93	1.82	EAR99
MFB-2625CH	26.25	21.50-30.00	1.50	EAR99
MFBP-00045CH	26.27	23.99-28.75	2.01	EAR99
MFBP-00056CH	27.00	21.80-33.40	1.33	EAR99
MFBP-00055CH	27.20	22.30-33.20	1.29	EAR99
MFBP-00023CH	28.50	25.00-33.30	1.70	EAR99
MFBP-00046CH	31.66	28.28-35.45	1.72	EAR99
MFB-3175CH	31.75	26.60-36.70	1.50	EAR99
MFB-3300CH	33.00	26.00-40.00	1.50	EAR99
MFB-3325CH	33.25	32.00-34.30	2.50	EAR99
MFB-3475CH	34.75	29.95-40.00	2.00	EAR99
MFBP-00050CH	34.80	33.80-35.90	2.93	EAR99
MFB-3450CH	35.00	24.00-45.00	1.50	EAR99
MFBP-00022CH	36.00	31.00-41.20	1.70	EAR99
MFBP-00047CH	37.25	34.44-40.20	2.04	EAR99
MFBP-00057CH	37.50	30.50-46.20	1.50	EAR99
MFBP-00051CH	38.40	36.80-40.00	2.49	EAR99
MFBC-00017CH	42.00	34.50-49.50	1.50	EAR99
MFBC-00008CH	44.50	36.70-51.10	1.50	EAR99
MFB-5350CH	53.50	40.00-67.00	1.20	EAR99
MFBC-00018CH	53.75	44.50-62.50	2.00	EAR99
MFBC-00009CH	55.60	46.50-63.50	1.60	EAR99
MFBC-00019CH	70.00	58.30-77.70	2.85	EAR99
MFBC-00020CH	93.50	77.35-107.80	3.60	EAR99

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
MMIQ-1037HCH	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
MMIQ-30120HCH[1]	30-120	DC-30	8.5	27	40	EAR99

[1]Differential IF IQ Mixer

MIXERS, Double Balanced

Part Number	RF/LO (GHz)	IF (GHz)	Conversion Loss (dB)	IIP3 (dBm)	LO Drive (dBm)	ECCN
MM1-0115HCH	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
MM1-0424SCH	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
MM1-1140HCH	11-40	DC-12	8	+21	+15	EAR99
MM1-1240SCH	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
MM1-2567LCH	25-67	DC-30	9	+9	+13	EAR99
MM1-30100LCH	30-100	DC-20	8.5	see datasheet	+14	EAR99
MM1-35130HCH	35-130	DC-50	8	see datasheet	+12	EAR99
MMH-35120HCH[1]	35-120, 12-40	DC-14	18	+7	+15	3A001.b.7.c.1

[1]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
MT3A-0113HCH[1]	1-13	0.5-8.5	8.5	+28	+8	EAR99
MT3L-0113HCH	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

[1]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
MQS-0209CH	2-9	±0.5	±3	16	EAR99
MQS-0218CH	2-18	±1	±3	17	EAR99
MQH-2R58R5CH	2.5-8.5	±0.4	±3	23	EAR99
MQH-3R510CH	3.5-10	±0.4	±1.5	25	EAR99
MQS-0418CH	4-18	±0.4	±0.5	20	EAR99
MQH-0517CH	5-17	±0.5	±6	23	EAR99
MQH-0920CH	9-20	±0.55	±2	21.5	EAR99
MQH-1434CH	14-34	±0.7	±4.5	17	EAR99
MQH-1842CH	18-42	±1.5	±4	15	EAR99

LIMITERS

Part Number	Band (GHz)	Loss (dB)	Flat Leakage (dBm)	Average Power Handling (W)	Peak Power Handling (W)	P1dB (dBm)	ECCN
HLM-100001CH*[1]	DC-10	0.8	+8.5@10GHz	10	—	+11	EAR99
HLM-8011CH[1]	DC-30	0.4	+7@30GHz	1	4.5	+10	EAR99
HLM-40CH[1]	DC-40	0.5	+16@20GHz	4	20	+15	EAR99
HLM-70CH[1]	DC-70	0.8	+9@40GHz	4	20	+9	EAR99

[1]Power ratings are dependent on frequency, temperature, and pulse conditions

ACTIVE DOUBLER

Part Number	Input (GHz)	Output (GHz)	1F Supp (dBc)	3F Supp (dBc)	Bias (V & mA)	ECCN
IADA-2050CH*	10-25	20-50	24	21	5V @ 130mA	EAR99

PASSIVE MULTIPLIERS & NON LINEAR TRANSMISSION LINES

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

POWER DIVIDERS, 1:2

Part Number	Band (GHz)	Amplitude Balance (dB)	Phase Balance (dB)	Isolation (dB)	ECCN
MPD-0226CH	2-26.5	±0.2	±2	20	EAR99

***New Release**

All electrical specifications given are typical values.

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: **M**BAL, **M**M1, **M**T3)

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), **CSP1, CSP2, CSP3** (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

WAVEGUIDE DECODER

Prefix: ADA = Active Doubler, AQA = Active Quadrupler, ASA = Active times Six
ADA-xxX00WG:
Identifier: xx 2-digit string identifying the frequency band of operation (ex: 10 = WR-10)
Identifier: X 1-digit string identifying : F = Full band N= Narrow band

Prefix: ATN identifies Attenuator product family
ATNXX-xxFX00WG:
XX is a 2-digit string identifying the attenuation value
Identifier: xx 2-digit string identifying the frequency band of operation. (ex: 10 = WR-10)
FX identifies Fixed Attenuator, X = L for Low and H for High power; LS identifies Level Set Attenuator

Prefix: C identifies Coupler product family
CXX-xx00WG:
XX identifier is coupling value (ex: 10, 20, 30 or 40 dB)
Identifier: xx 2-digit string identifying the frequency band of operation (ex: 10 = WR-10)

Prefix: DET identifies Detector product family
DET-xxPP00WG:
Identifier: xx 2-digit string identifying the frequency band of operation (ex: 10 = WR-10)
Output: SMA Female
PP Identifier is Polarity: Positive

Prefix: ISO identifies Isolator product family
ISO27-xxF00WG:
XX identifies isolation value (ex: 27 dB)
Identifier: xx 2-digit string identifying the frequency band of operation (ex: 10 = WR-10)

Prefix: PD identifies Power Divider product family
PD20-xx00WG:
XX = Output to Output isolation value. (ex: 20 dB)
Identifier: xx 2-digit string identifying the frequency band of operation (ex: 10 = WR-10)

Prefix: TW identifies Termination product family
TW50-xxX00WG:
Identifier: xx 2-digit string identifying the frequency band of operation (ex: 10 = WR-10)
Identifier X = H for high Power, L for Low Power
Connector options: UG-387, UG-385, UG-383 and UG-599

Prefix: WE identifies Waveguide E plane bend product family
WEXX-xx00WG:
Identifier: XX 2-digit string identifying bend degree (45 or 90 Degrees)
Identifier: xx 2-digit string identifying the frequency band of operation (ex: 10 = WR-10)

Prefix: WH identifies Waveguide H plane bend product family
WHXX-xx00WG:
Identifier: XX 2-digit string identifying bend degree (45 or 90 Degrees)
Identifier: xx 2-digit string identifying the frequency band of operation (ex: 10 = WR-10)

Prefix: WS identifies Waveguide Straight product family
WS-xx00XXXWG:
Identifier: xx 2-digit string identifying the frequency band of operation (ex: 10 = WR-10)
Identifier: XXX 3-digit string identifying length in inches (ex: 3 inches=300)
Identifier: XXX the last X in string will identify if the flange is Square (S) or Round (R)

Prefix: WT identifies Waveguide Twist product family
WTXX-xxX00WG:
Identifier: XX 2-digit string identifying bend degree (45 or 90 Degrees)
Identifier: xx 2-digit string identifying the frequency band of operation (ex: 10 = WR-10)
Identifier: X 1-digit string identifying L for left and R for right hand twist

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