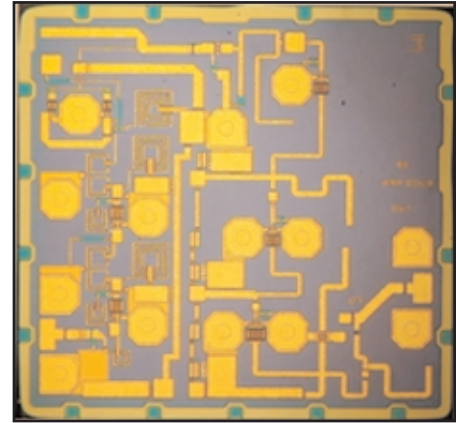


FEATURES

- Integrated Monolithic Doubler
- High Harmonic Rejection
- Single Supply Voltage
- High Reliability

DESCRIPTION

The FMM5118X is a doubler, consisting of an X2 multiplier followed by a buffer amplifier for applications with an output frequency of 20 to 32 GHz. This doubler is uniquely suited for point-to-point radios, local multi-point distribution systems (LMDS) and satellite communications, as it offers a high dynamic range over a large bandwidth.



ABSOLUTE MAXIMUM RATINGS (Ambient Temperature Ta=25°C)

Parameter	Symbol	Rating	Unit
DC Supply Voltage	V _{DD1,2}	8	V
Input Power	P _{in}	10	dBm
Storage Temperature	T _{stg}	-65 to +175	°C

RECOMMENDED OPERATING CONDITIONS

Item	Symbol	Recommend			Unit
		Min.	Typ.	Max.	
DC Supply Voltage	V _{DD1,2}	3.0	-	6.0	V
Input Drive Power	P _{in}	0.0	3.0	5.0	dBm
Operating Backside Temperature	T _{bs}	-45	25	110	°C

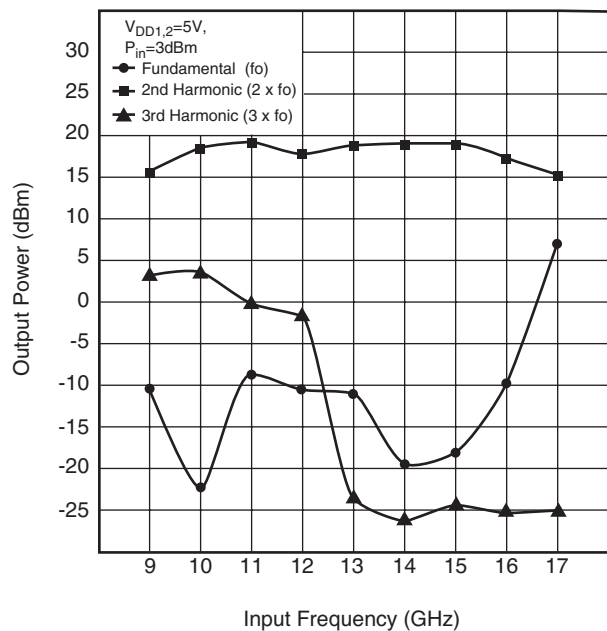
Note 1: This product should be hermetically packaged.

ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta=25°C)

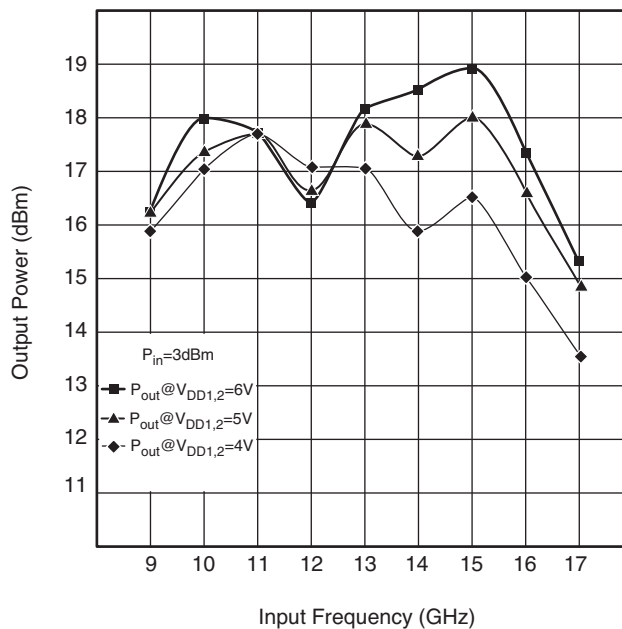
Item	Symbol	Conditions	Limits			Unit
			Min.	Typ.	Max.	
Input Frequency Range	f _{in}	V _{DD1,2} =5V, P _{in} =3dBm	10	-	16	GHz
Output Frequency Range	f _{out}		20	-	32	GHz
Output Power	P _{out}		14	18	20	dBm
Conversion Gain	G _c		11	14	17	dB
Conversion Gain Flatness	ΔG		-	2.5	-	dB
Input Return Loss	RL _{in}		-	15	-	dB
Fundamental Rejection	RJ _{1st}		-	25	-	dB
3rd Harmonic Rejection	RJ _{3rd}		-	30	-	dB
DC Current Consumption	I _{DC}		-	100	150	mA
RF Current Consumption	I _{RF}		-	140	200	mA

Note 1: The electrical characteristics are measured on a sample basis at 10pcs./wafer. Criteria: (accept/reject)=(0/1)

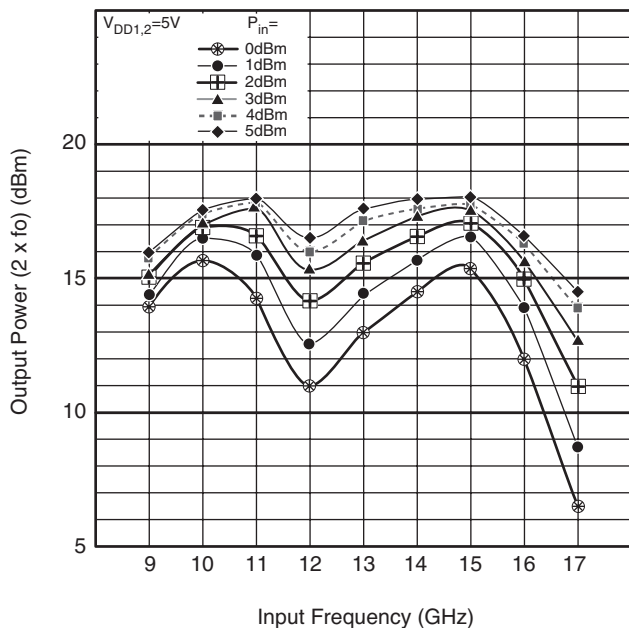
OUTPUT POWER vs. FREQUENCY



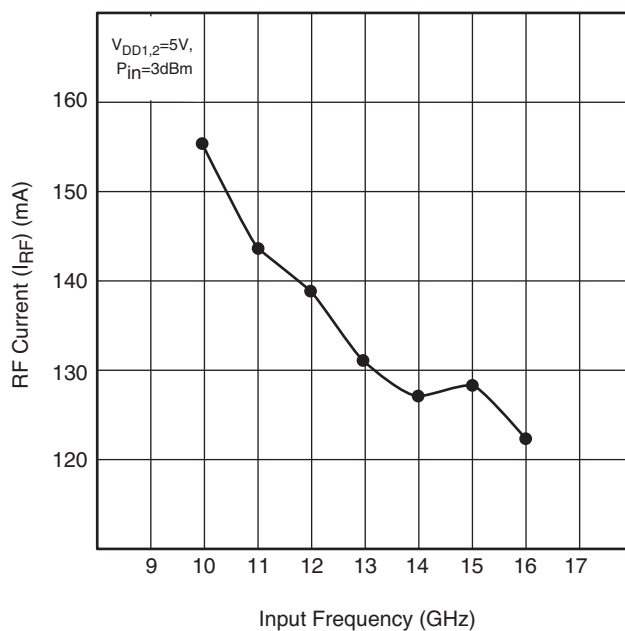
V_{DD}-Output Power Dependency



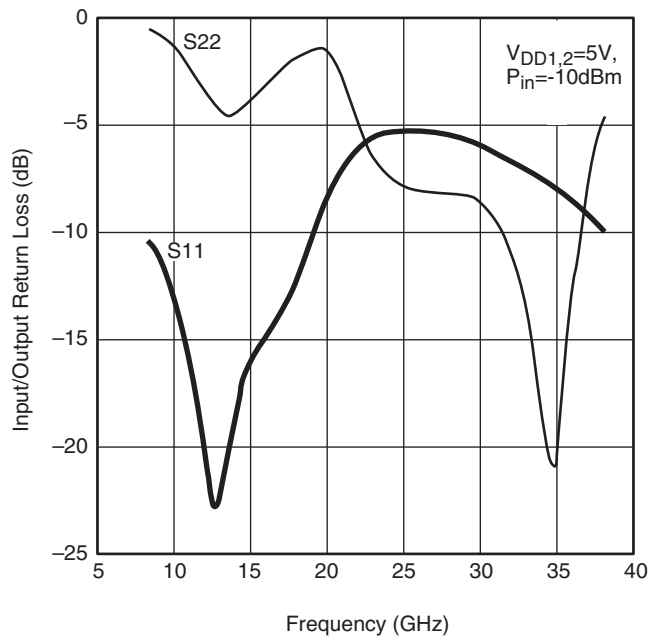
OUTPUT POWER vs. FREQUENCY



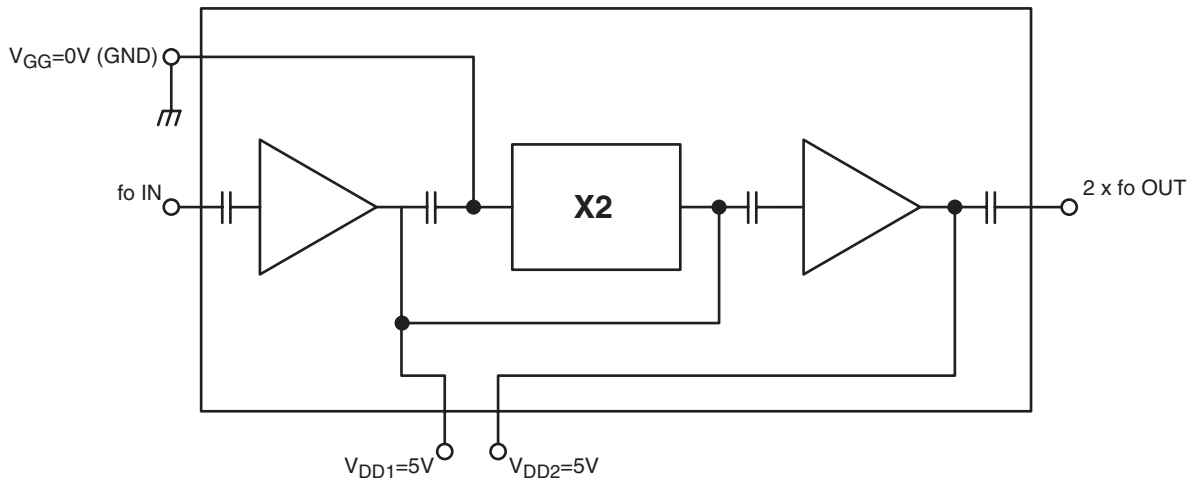
RF CURRENT vs. FREQUENCY



SMALL SIGNAL RETURN LOSS vs. FREQUENCY



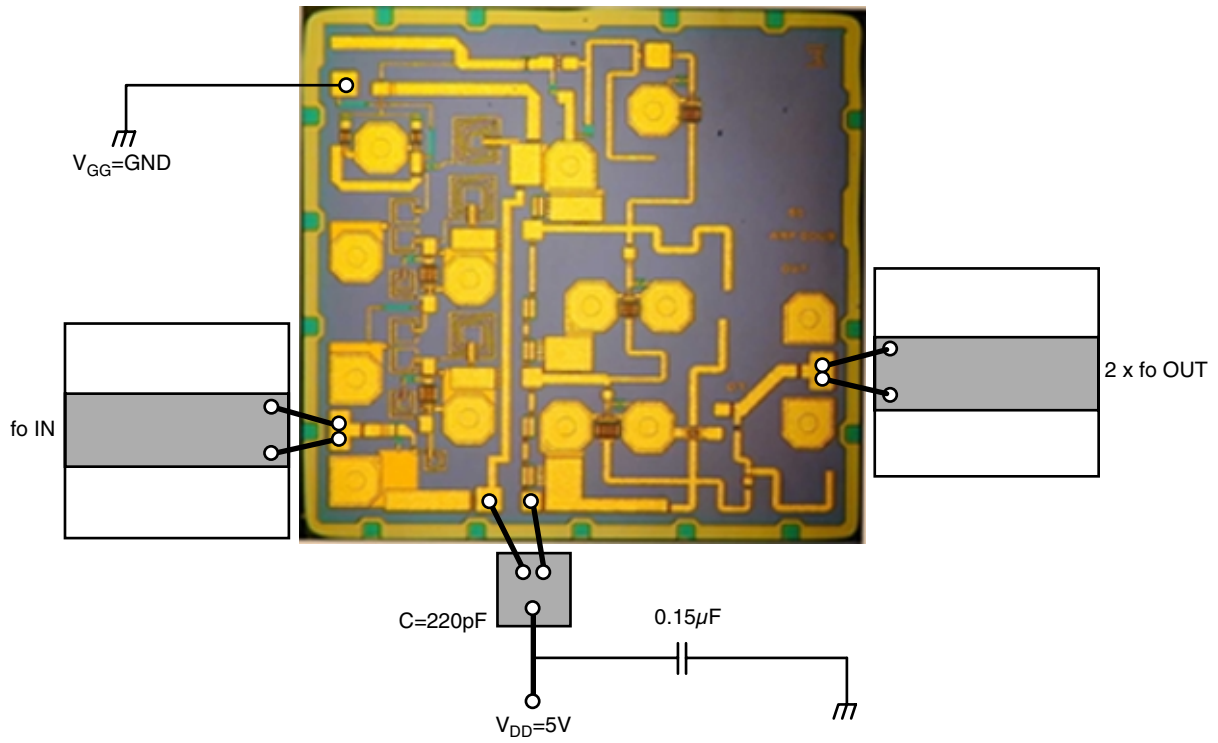
Block Diagram



FMM5118X

20-32GHz Doubler MMIC

Bonding Diagram



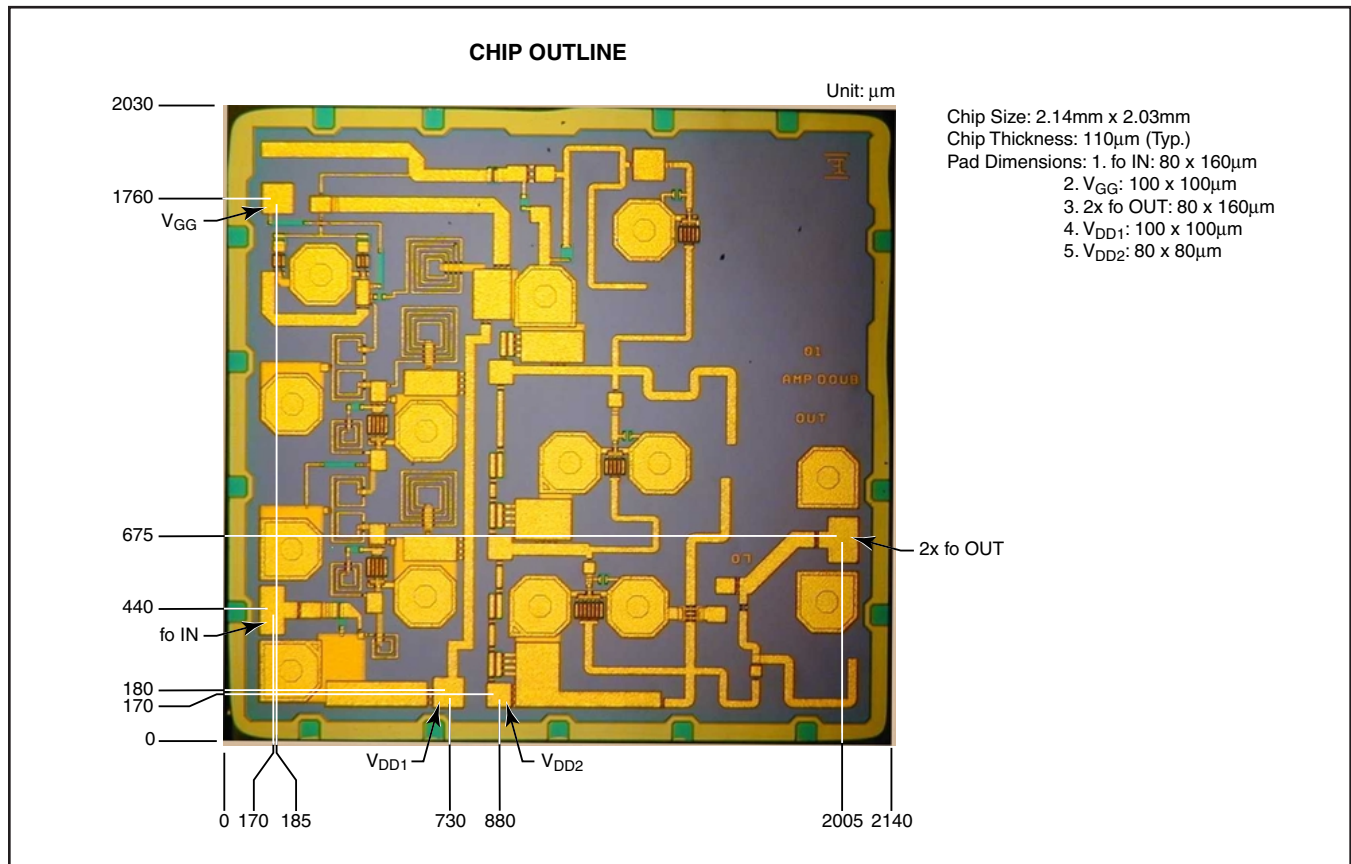
FMM5118X
20-32GHz Doubler MMIC

Notes:



FMM5118X

20-32GHz Doubler MMIC



For further information please contact:

FUJITSU COMPOUND SEMICONDUCTOR, INC.

2355 Zanker Rd.
San Jose, CA 95131-1138, U.S.A.
Phone: (408) 232-9500
FAX: (408) 428-9111
www.fcsi.fujitsu.com

FUJITSU QUANTUM DEVICES EUROPE LTD.

Network House
Norreys Drive
Maidenhead, Berkshire SL6 4FJ
United Kingdom
TEL: +44 (0) 1628 504800
FAX: +44 (0) 1628 504888

FUJITSU QUANTUM DEVICES SINGAPORE PTE LTD.

Hong Kong Branch
Rm. 1101, Ocean Centre, 5 Canton Rd. Tsim Sha Tsui,
Kowloon, Hong Kong
TEL: +852-23770226
FAX: +852-23763269

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- Do not alter the form of this product into a gas, powder, or liquid through burning, crushing, or chemical processing as these by-products are dangerous to the human body if inhaled, ingested, or swallowed.
- Observe government laws and company regulations when discarding this product. This product must be discarded in accordance with methods specified by applicable hazardous waste procedures.

FUJITSU QUANTUM DEVICES LIMITED

Business Development Division
11th Floor, Hachioji Daiichi-Seimei Bldg.
3-20-6 Myojin-cho
Hachioji-city, Tokyo 192-0046, Japan
TEL: +81-426-43-5885
FAX: +81-426-43-5582

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Printed in U.S.A. FCSI0502M200