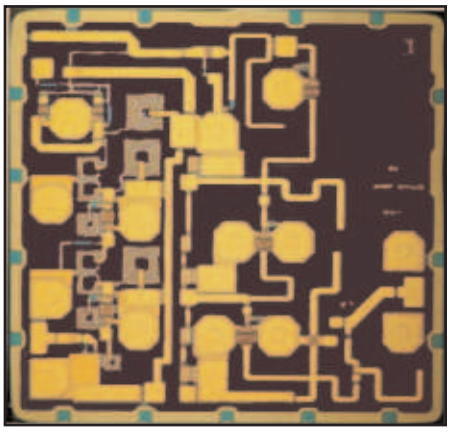
FEATURES

- 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.

Eudyna's stringent Quality Assurance Program assures the highest reliability and consistent performance.

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	Tbs	-45	25	110	°C

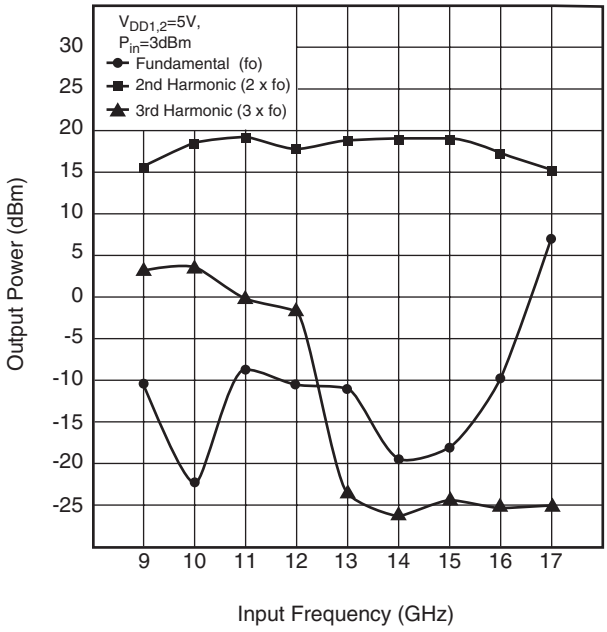
Note 1: This product should be hermetically packaged.

ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta=25°C)

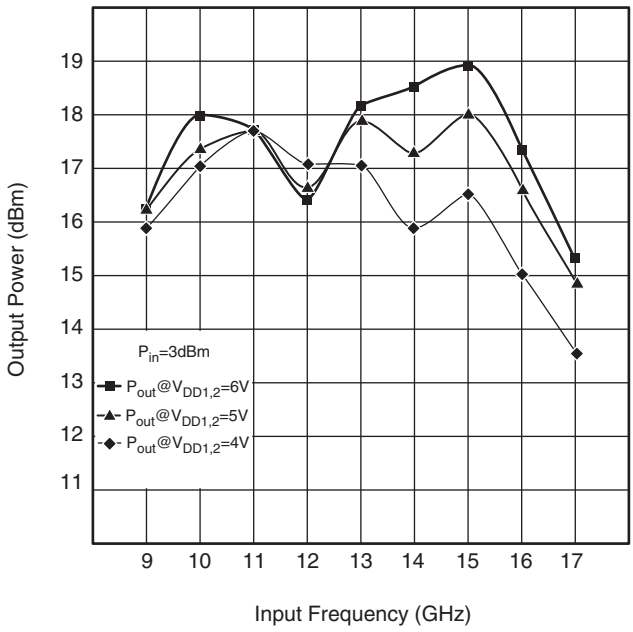
Item	Symbol	Conditions	Limits			Unit
			Min.	Typ.	Max.	
Input Frequency Range	f_{in}	$V_{DD1,2}$=5V, P_{in}=3dBm	10	-	16	GHz
Output Frequency Range	f_{out}		20	-	32	GHz
Output Power	P_{out}		14	18	20	dBm
Conversion Gain	G_c		11	14	17	dB
Conversion Gain Flatness	ΔG		-	2.5	-	dB
Input Return Loss	RL_{in}		-	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)

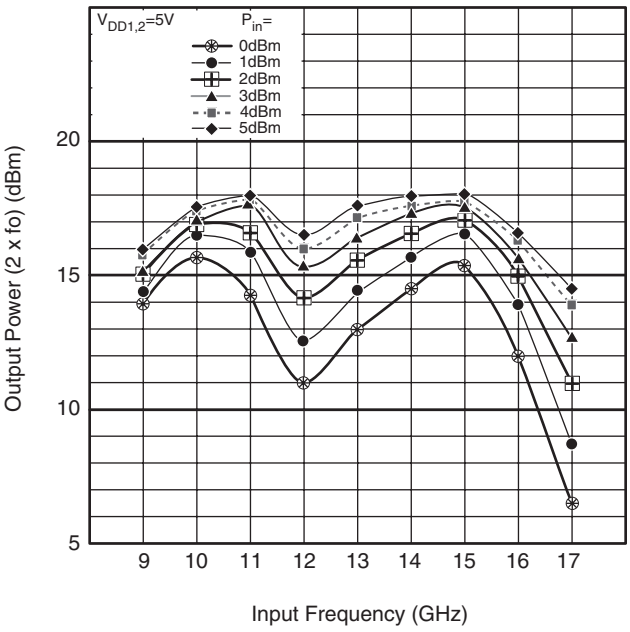
OUTPUT POWER vs. FREQUENCY



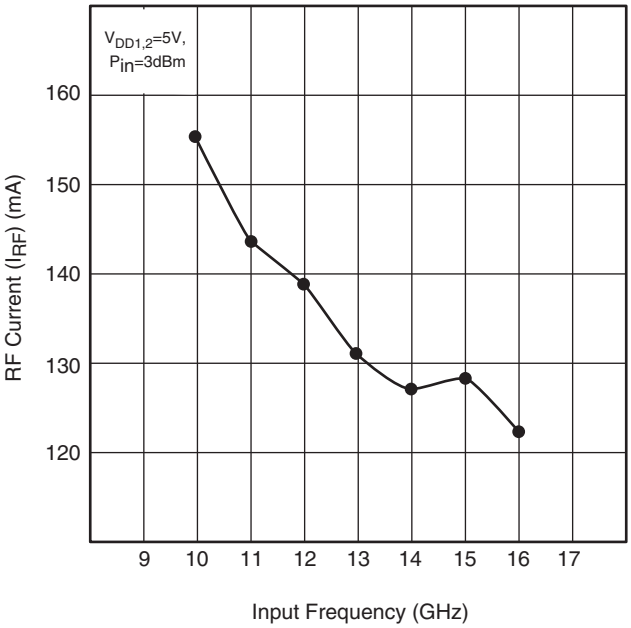
V_{DD}-Output Power Dependency



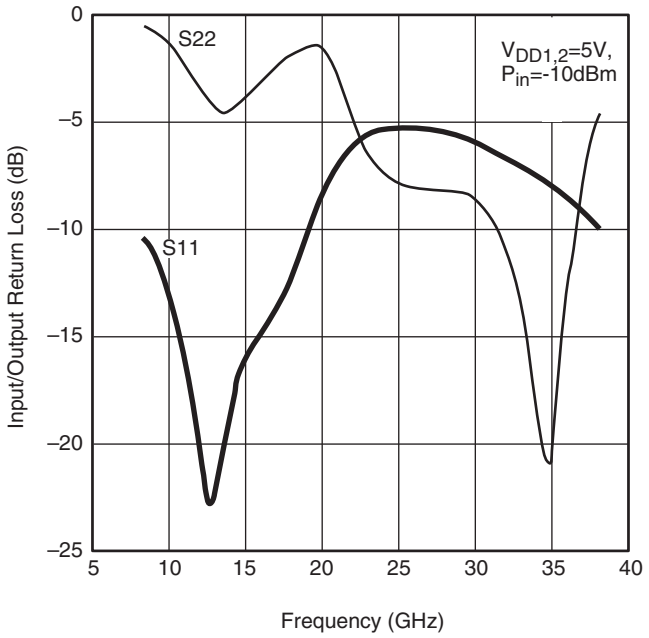
OUTPUT POWER vs. FREQUENCY



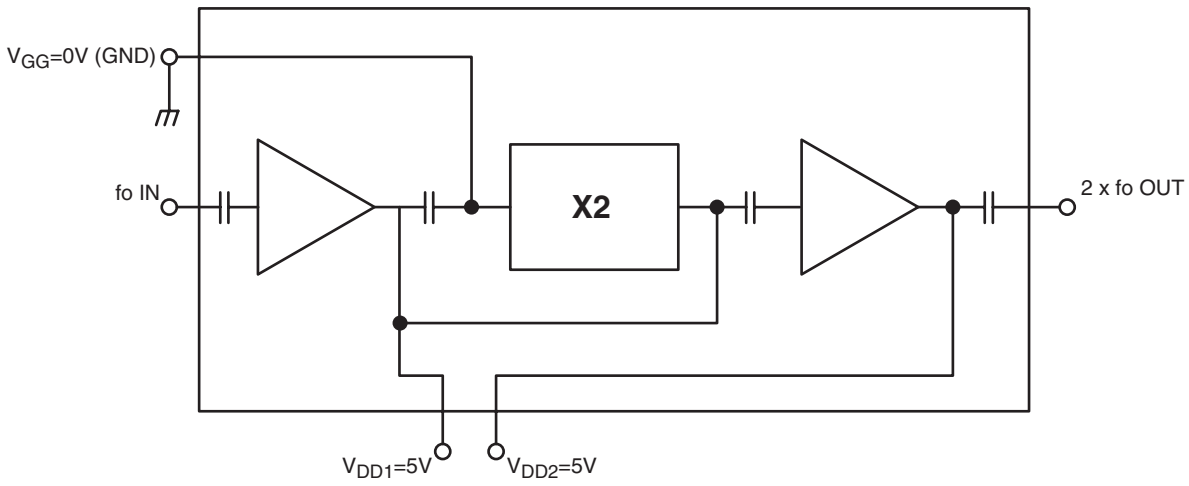
RF CURRENT vs. FREQUENCY



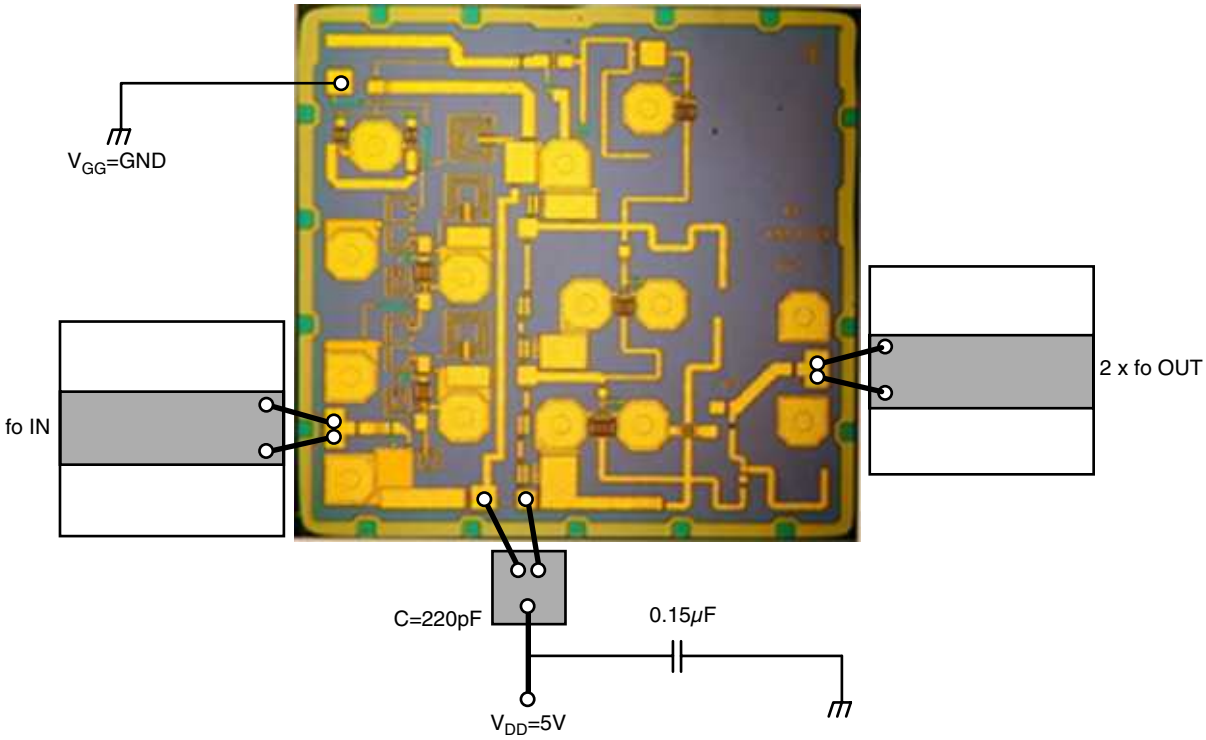
SMALL SIGNAL RETURN LOSS vs. FREQUENCY



Block Diagram

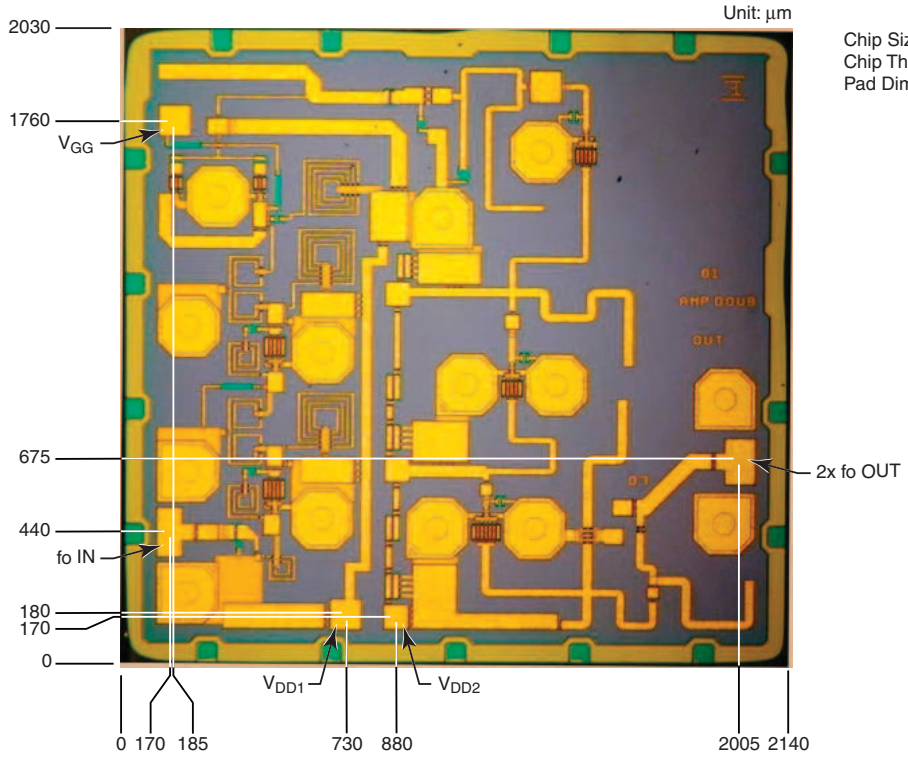


Bonding Diagram



Notes:

CHIP OUTLINE



Chip Size: 2.14mm x 2.03mm
Chip Thickness: 110µm (Typ.)
Pad Dimensions: 1. fo IN: 80 x 160µm
2. V_{GG}: 100 x 100µm
3. 2x fo OUT: 80 x 160µm
4. V_{DD1}: 100 x 100µm
5. V_{DD2}: 80 x 80µm

For further information please contact:

Eudyna Devices USA Inc.
2355 Zanker Rd.
San Jose, CA 95131-1138, U.S.A.
TEL: (408) 232-9500
FAX: (408) 428-9111
www.us.eudyna.com

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

Eudyna Devices Asia Pte Ltd.
Hong Kong Branch
Rm. 1101, Ocean Centre, 5 Canton Rd.
Tsim Sha Tsui, Kowloon, Hong Kong
TEL: +852-2377-0227
FAX: +852-2377-3921

Eudyna Devices Inc.
Sales Division
1, Kanai-cho, Sakae-ku
Yokohama, 244-0845, Japan
TEL: +81-45-853-8156
FAX: +81-45-853-8170

CAUTION

Eudyna Devices Inc. products contain **gallium arsenide (GaAs)** which can be hazardous to the human body and the environment. For safety, observe the following procedures:

- **Do not put this product into the mouth.**
- **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.**