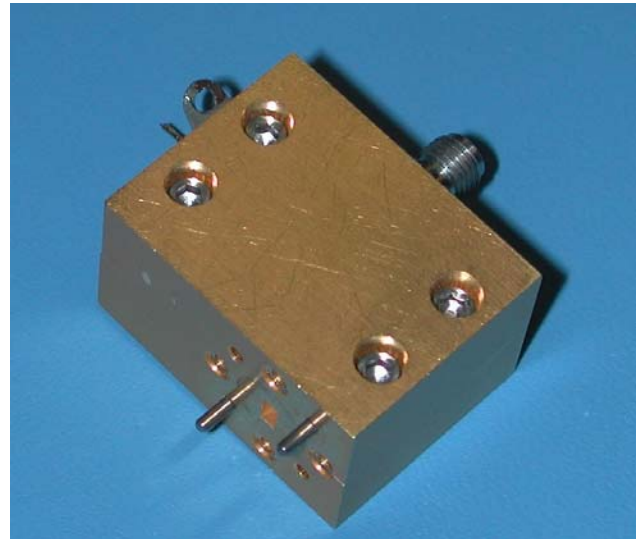


DESCRIPTION

The HAFM Series of active multipliers is available in models ranging from 18 to 110 GHz. A wide variety of multiplication factors from X2 up to X12 provide the customer with design flexibility for many applications. Basic multiplier circuits can be cascaded to achieve higher order multiplication factors.

Active multipliers are often used in LO chains in radars and communication systems, allowing the use of low phase noise frequency sources at lower frequencies. Multipliers also find use in frequency extenders for test equipment.



Applications

- Local Oscillators Chains
- Radar Sources
- Communication Sources
- Test Equipment

Features

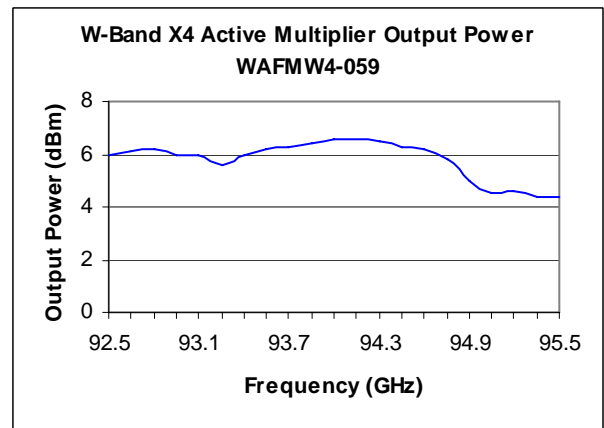
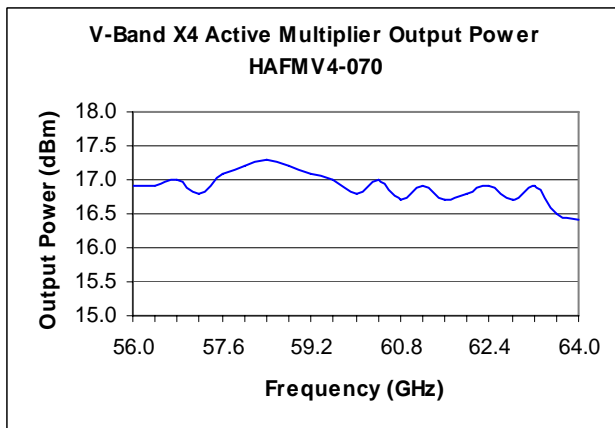
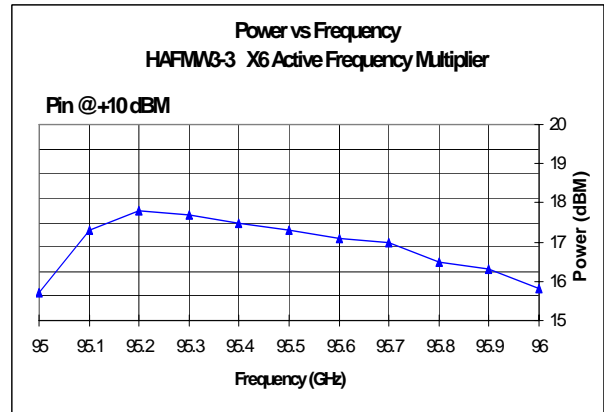
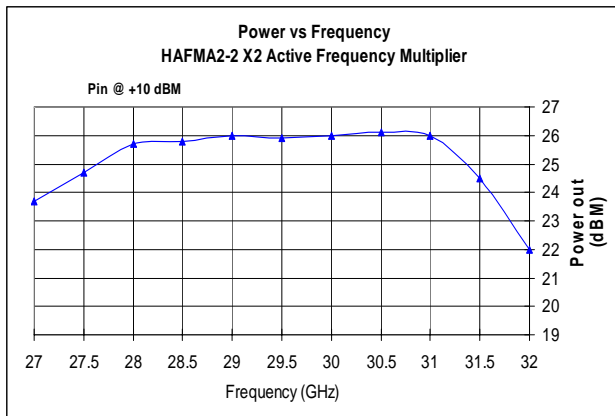
- Low Cost MMIC construction
- Low Drive Levels
- High Output Power
- Small Size for integrated systems

Specifications @ 35°C T_{CASE.} Specifications subject to change w/o notice.

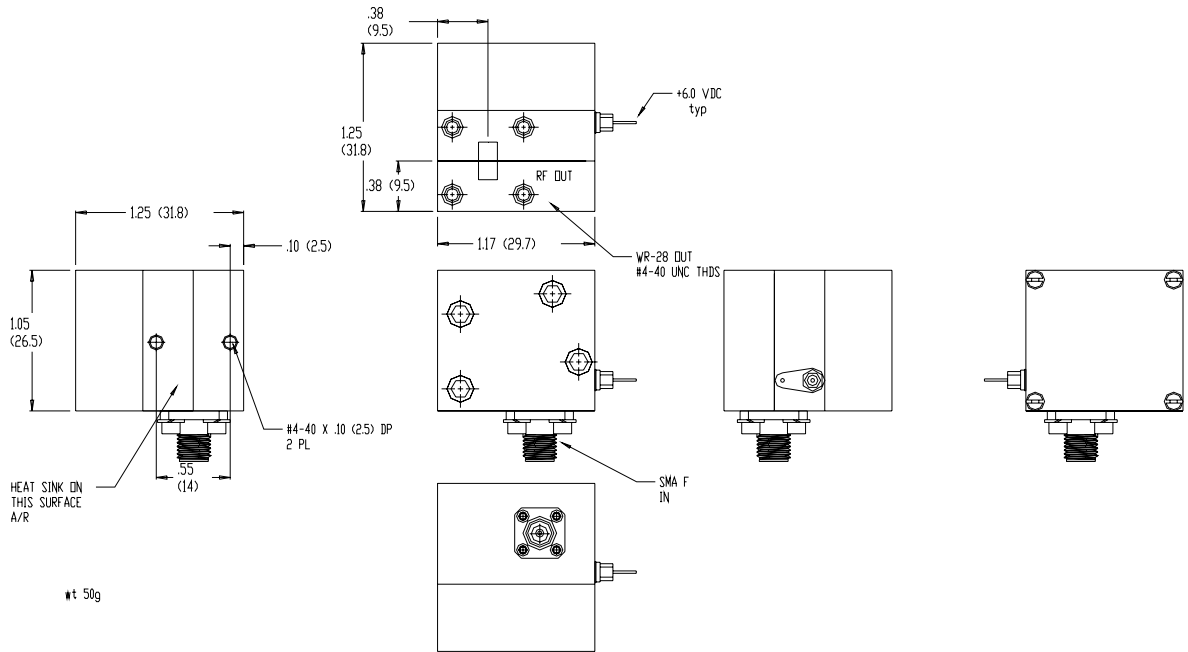
Model Number	Input / Output Frequency Range (GHz)	Mult Factor	Input Connector	P _{IN} (dBm) 2,3	Max Output Power 2,3	Output Waveguide and Flange
HAFMK2-X	9 – 13.25 / 18 – 26.5	X2	SMA F	+10	+27	WR-42 / UG – 595/U
HAFMA2-X	13.25 - 20 / 26.5 - 40	X2	SMA F	+10	+27	WR-28 / UG – 599/U
HAFMB2-A	16.5 - 20 / 33 - 40	X2	SMA F	+10	+27	WR-22 / UG – 599/U-M
HAFMB2-129	19.0 - 23.0 / 38.0 - 46.0	X2	2.9 mm F	+10	+13	WR-22 / UG - 599/U-M
HAFMB2-B	20 – 22.5 / 40 - 45	X2	2.9 mm F	+10	+23	WR-22 / UG – 599/U-M
HAFMB2-C	23 – 25.5 / 46 - 51	X2	2.9 mm F	+10	+20	WR-22 / UG – 599/U-M
HAFMU2-118	24.0 / 48.0	X2	2.9 mm F	+10	+13	WR-19 / UG-383/U
HAFMV2-A	25 – 28 / 50 - 56	X2	2.9 mm F	+10	+16	WR-15 / UG – 385/U
HAFMV2-B	28.5 – 33 / 57 - 66	X2	2.9 mm F	+10	+16	WR-15 / UG – 385/U
HAFMB4-C	11.5 – 12.75 / 46 - 51	X4	SMA F	+10	+16	WR-22 / UG – 599/U-M
HAFMV4-157	25.5 - 27.5 / 51.0 - 55.0	X2	2.9 mmF	+10	+13	WR-15 / UG-385/U
HAFMV4-A	12.5 – 14 / 50 - 56	X4	SMA F	+10	+16	WR-15 / UG – 385/U
HAFMV4-136	14.25 – 16.5 / 55 - 65	X4	SMA F	+10	+16	WR-15 / UG – 385/U
HAFME2-120	34.0 / 68.0	X2	WR-28	+10	+13	WR-12 / UG-387/U
HAFME4-139	17.75 - 19.0 / 71 - 76	X4	SMA F	+10	+15	WR-12 / UG-387/U
HAFMW2-121	39.0 / 78.0	X2	WR-28	+10	+13	WR-10 / UG-387/U-M
HAFME4-140	20.25 - 21.5 / 81-86	X4	SMA F	+10	+15	WR-12 / UG-387/U
HAFMW3-122	29.33 / 88.0	X3	WR-28	+10	+13	WR-10 / UG-387/U-M
HAFMW4-A	23.25 – 23.75 / 93 - 95	X4	2.9 mm F	+10	+16	WR-10 / UG – 387/U-M
HAFMW6-101	15.33 – 16.0 / 92 - 96	X6	SMA F	+10	+16	WR-10 / UG – 387/U-M
HAFMW8-100	11.5 - 12.0 / 92-96	X8	SMA F	+10	+13	WR-10 / UG - 387/U-M
HAFMW9-A	10.33 – 10.56 / 93 - 95	X9	SMA F	+10	+16	WR-10 / UG – 387/U-M

Note: The multipliers listed above are just a portion of our available designs. We have over 100 designs in our library to draw from. Please provide desired specifications if any of the above do not match your requirements.

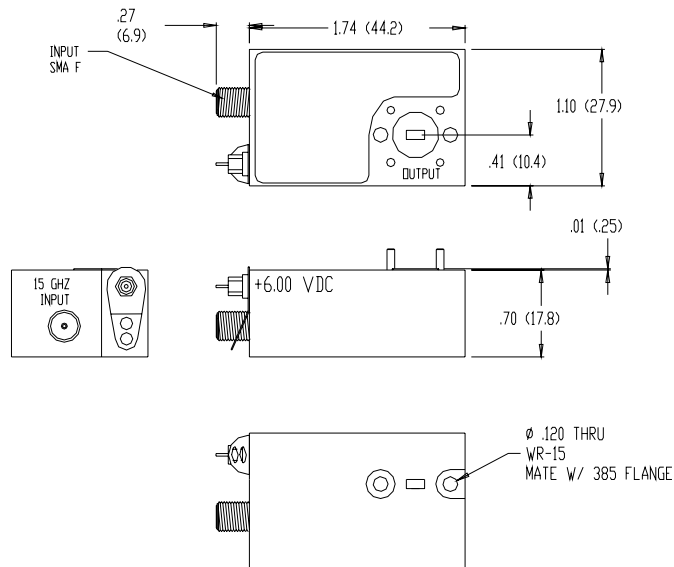
Typical Output Power Data for HAFM Active Multipliers



Active Multiplier Outlines

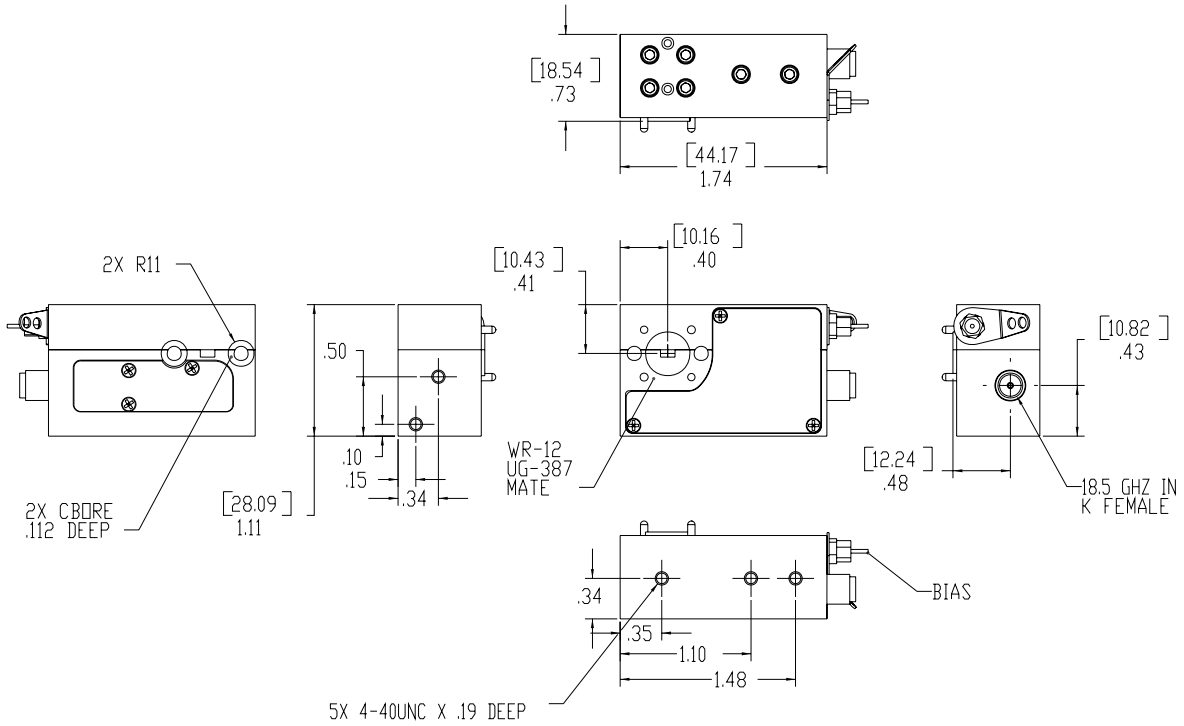


Ka-Band Active Doubler

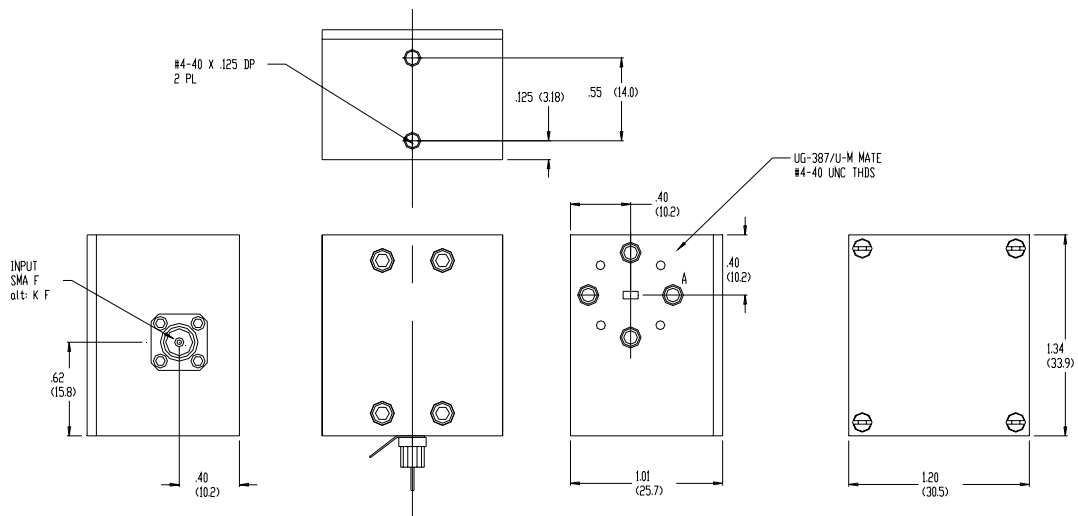


V-Band X4 Active Multiplier

Active Multiplier Outlines



E-Band X4 Active Multiplier



W-Band X4 Active Multiplier



Series HAFM Active Frequency Multipliers

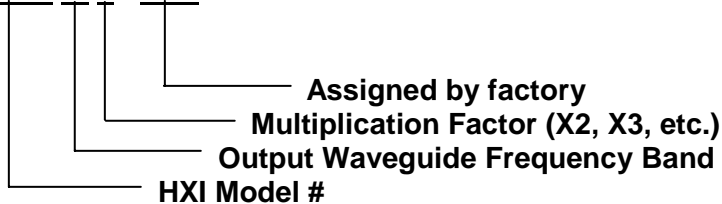
Revised May 2008

Requesting Quotes

When requesting a quote for HAFM active multipliers, please specify desired frequency range and input/output power levels, as well as any other required specifications. HAFM multipliers are built to order and will be optimized for the bandwidth specified by the customer. The part numbering system below can also be used as a reference.

Example: W-Band frequency tripler

HAFM W 3 - XXX



Options

SMA Female input connector available to 20 GHz.
2.9 mm inputs available to 40 GHz.