

Revised August 2015

DESCRIPTION

The HMPA and HHPA Series of Power Amplifiers cover the frequency range from 18 – 100 GHz. A wide variety of gain and bandwidth combinations are available to provide the designer with a solution for most applications. Custom designs are available and in most cases, NRE is not required. MMIC technology is employed for high reliability and repeatability.

The amplifiers can be used in transmitters for communication and radar systems and also as gain blocks in LO chains and test equipment. Multiple devices can be combined to increase output power where necessary. For example, several watts of power have been obtained at 35 GHz. The amplifiers can also be packaged with other components for custom configurations.

Each power amplifier contains a voltage regulator and bias sequencing circuitry allowing the use of a single bias to power the amplifier.

Applications

Communications Equipment

Radar Transmitters

Test Equipment



Features

High P1dB or PSAT

Multiple Gain / P1dB options

Single Bias / Internal Regulation

Internal Bias Sequencing

Custom power combining available



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Power Amplifier Specifications - 18 to 70 GHz This is just a sample listing of available power amplifiers. Please choose from these models or contact factory with your requirements. Please identify your required frequency range with any inquiry. Coaxial Power Amplifiers						
HMPAAK-133 New!	17.0 - 31.0	2.9 mm, Female	+20	30		
HMPAAK-096	21.5 - 40.0	2.9 mm, Female	+10	13		
HHPAAK-443	22.0 - 28.0	2.9 mm, Female	+27	18		
HHPAKK-371	23-5 - 26.5	2.9 mm, Female	+19	30		
HHPAKK-088	23.0 - 29.0	2.9 mm, Female	+28	32		
HMPAAK-058	28.0 - 42.0	2.9 mm, Female	+20	20		
HHPAAK-551 New!	38.5 - 40.0	2.4 MM, Female	+30	30		
HHPAB2.4-511 New!	40.0 - 47.5	2.4 mm, Female	+23	15		
HMPAB-099	41.0 - 45.0	2.4 mm, Female	+19	16		
HHPAVC-250	50.0 - 66.0	1.85 mm Female	+16	35		
Waveguide Power Amplifiers						
HHPAA-300	28.0 - 32.0	WR-28, UG-599/U	+25	17		
HHPAA-301	32.0 - 36.0	WR-28, UG-599/U	+25	20		
HHPAA-106	31.0 - 35.0	WR-28, UG-599/U	+30	18		
HHPAA-022	34.5 - 35.5	WR-28, UG-599/U	+29	15		
HHPAB-268	39.0 - 45.0	WR-22, UG-599/U-M	+21	30		
HHPAV-510 New!	50.0 - 66.0	WR-15, UG-385/U	+14	34		
HHPAV-261	53.0 - 60.0	WR-15, UG- 385/U	+14	15		
HHPAV-297	55.0 - 65.0	WR-15, UG- 385/U	+13	30		
HHPAV-222	55.0 - 65.0	WR-15, UG- 385/U	+14	25		
HHPAV-355	55.0 - 65.0	WR-15, UG- 385/U	+17	28		
HHPAV-461	57.0 - 63.0	WR-15, UG-385/U	+17	17		
HHPAV-302	57.0 - 66.0	WR-15, UG-385/U	+14	16		
HHPAV-330	57.0 - 66.0	WR-15, UG- 385/U	+14	25		
HHPAV-295	57.0 - 66.0	WR-15, UG- 385/U	+15	29		
HHPAV-548 New!	57.0 - 66.0	WR-15, UG- 385/U	+21	32		
HHPAV-254	57.5 - 66.0	WR-15, UG- 385/U	+16	25		
HHPAV-285	58.0 - 62.0	WR-15, UG-385/U	+17	15		

Specifications @ 35⁰C T_{CASE}, Specifications subject to change w/o notice.

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See next page for Power Amplifiers above 70 GHz.



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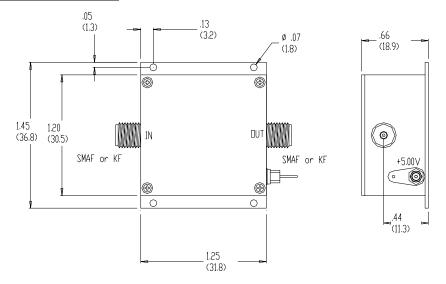
Power Amplifier Specifications - 70 to 100 GHz This is just a sample listing of available power amplifiers. Please choose from these models or contact factory with your requirements. Please identify your required frequency range with any inquiry.						
Model Number	Frequency Range (GHz)	Input/Output	P _{1dB} (dBm) typical	Gain (dB) typical		
HHPAE-487	71.0 - 76.0	WR-12, UG-387/U	+15	28		
HHPAE-496 New!	71.0 - 76.0	WR-12, UG-387/U	+23	35		
HHPAE-231	75.5 - 77.5	WR-12, UG-387/U	+15	14		
HMPAE-132 New!	76.0 - 77.0	WR-12, UG-387/U	+15	30		
HMPAE-529 New!	76.0 - 77.0	WR-12, UG-387/U	+21	34		
HHPAW-352	76.0 - 77.0	WR-10, UG-387/U-M	+15	18		
HHPAW-188	76.0 - 77.0	WR-10, UG-387/U-M	+15	30		
HHPAE-517 New!	76.0 - 81.0	WR-12, UG-387/U	+20	30		
HMPAE-543 New!	76.0 - 84.0	WR-12, UG-387/U	+14	32		
HHPAW-226	77.0 - 82.0	WR-10, UG-387/U-M	+12	24		
HHPAE-488	81.0 - 86.0	WR-12, UG-387/U	+14	26		
HHPAE-497 New!	81.0 - 86.0	WR-12, UG-387/U	+21	28		
HHPAW-336	85.0 - 91.0	WR-10, UG-387/U-M	+20 (P _{SAT})	30		
HMPAW-085	86.0 - 88.0	WR-10, UG-387/U-M	+13	13		
HMPAW-077	90.0 - 98.0	WR-10, UG-387/U-M	+10	18		
HMPAW-098	92.0 - 96.0	WR-10, UG-387/U-M	+10	18		
HHPAW-348	92.0 - 96.0	WR-10, UG-387/U-M	+15 (Р _{SAT})	18		
HHPAW-530 New!	92.0 - 96.0	WR-10, UG-387/U-M	+15	30		

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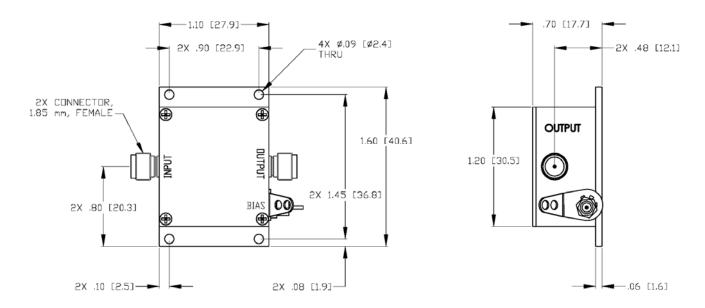


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Power Amplifier Outlines



Coaxial Power Amplifier (2.9 and 2.4 mm connectors) Applies to models with +23 dBm P1dB or less



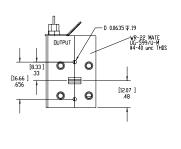
Coaxial Power Amplifier (1.85 mm connectors)

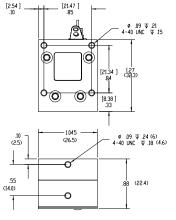


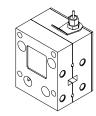
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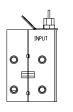
Power Amplifier Outlines



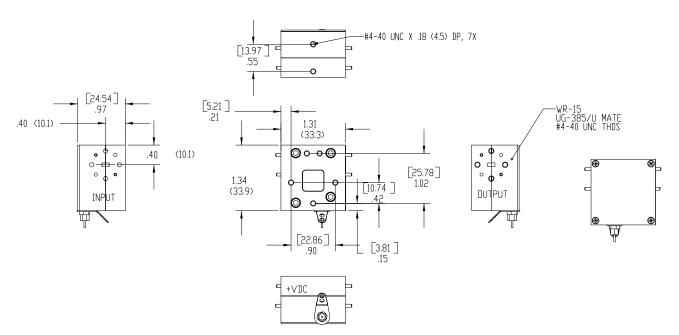








Q-Band (B-Band, WR-22) Power Amplifier (Outline is also valid for Ka-Band, WR-28.)



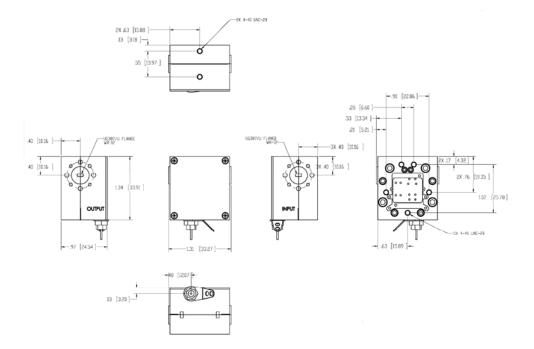
V-Band (WR-15) Power Amplifier

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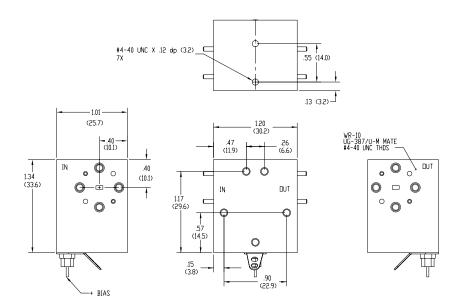


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Power Amplifier Outlines



E-Band (WR-12) Power Amplifier Highest power models may have a heat sink (not shown)



W-Band (WR-10) Power Amplifier

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Requesting quotes

When requesting a quote for HMPA or HHPA High Power Amplifiers, please specify required frequency range and any other required specifications. The amplifiers are built to order and will be optimized for the bandwidth specified by the customer. The part number guide below can also be used as a reference for requesting quotes.



Interface Options

SMA female connectors available to 20 GHz. 2.9 mm connectors available through 40 GHz.

2.4 mm connectors available through 50 GHz.

1.85 mm connectors available through 65 GHz.