



BROADBAND DISTRIBUTED AMPLIFIER (POSITIVE-BIAS ONLY)

AP-120

The AP-120 is a positive bias only multipurpose amplifier available in a connectorized or surface mount EQ package. It is a distributed MMIC amplifier with positive only bias circuitry to provide resonance free gain with high saturated output power from 1 to 20 GHz. It can be used for generation of square wave LO drives for T3 mixers (in saturation mode), general purpose LO drive signal generation or as a general purpose gain block for lab use (in linear mode).



Features

- Positive Bias Only Required
- Non-Inverting Output
- Surface Mount Package Available
- +20 dBm Typical Saturated Output Power
- Buffer- Amplifiers for Mixer LO
- 3rd and 5th Harmonic Generation

Electrical Specifications - Specifications guaranteed from -30 to +70°C, measured in a 50-Ohm system.

Parameter	Frequency (GHz)	Min	Typ	Max
Input for Saturated Output (dBm)	1.0-20.0	+10	+15	+18
Saturated Output Power (dBm)				
+6.3 Volts Bias		+15	+20	
+5 Volts Bias		+13	+18	
Saturated Output Voltage (V_{p-p}) ¹			6	
Small Signal Gain (dB)			14	
Return Loss (dB)			10	
Reverse Isolation (dB)			30	
Output Third Order Intercept (dBm)			27	
Power Consumption (W)			0.5	1
Bias Requirements (mA)				
+5.0 to +6.3 Volts DC			110	160

¹With a 50 Ω load impedance

Model Number	Description	Package Style(s) ²
AP-120EQ ¹ AP-120EQP	1.0 to 20.0 GHz Amplifier	EQ , EQP

¹EQ-Carrier Distributed Amplifiers are not suitable for in-line reflow solder. Manual assembly only.
(Refer to [EZ/EQ Amplifiers Installation Notes](#)).

²Connectorized test fixtures available for most carrier and surface mount packages. Contact factory.



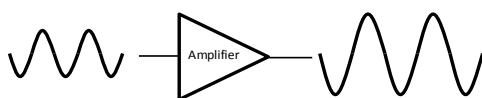
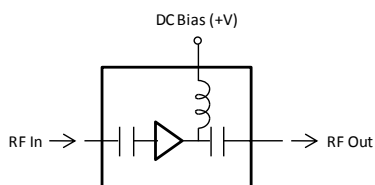
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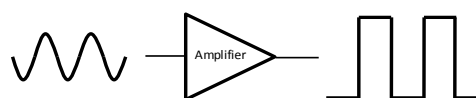
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Frequency 1.0 to 20.0 GHz

Schematic

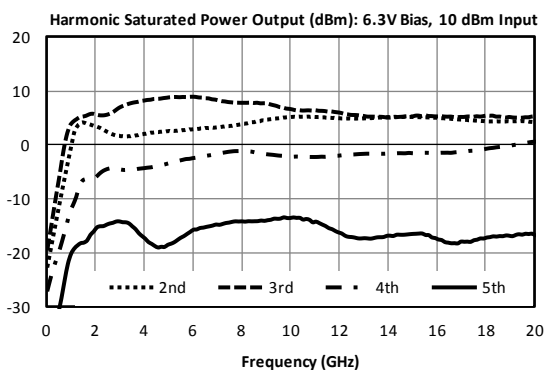
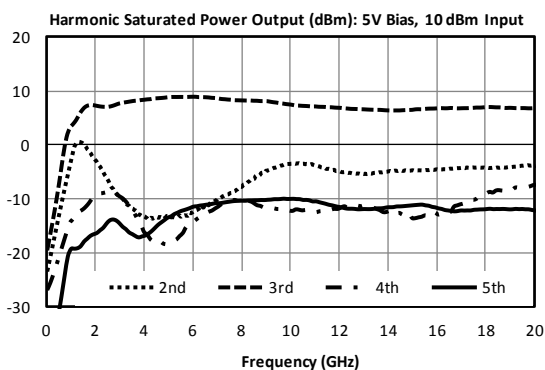
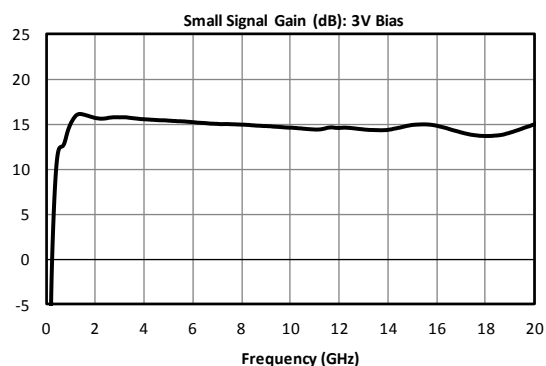
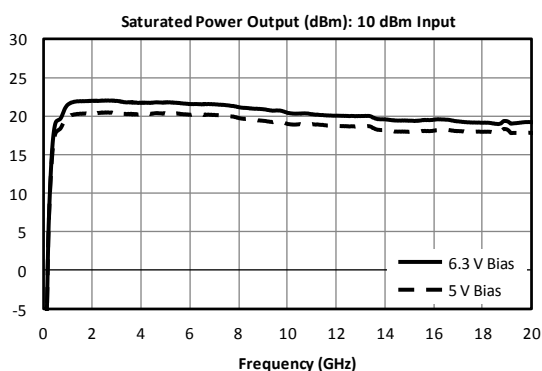


Linear operation (<+5 dBm In)



Saturated operation (>+10 dBm In)

Typical Performance



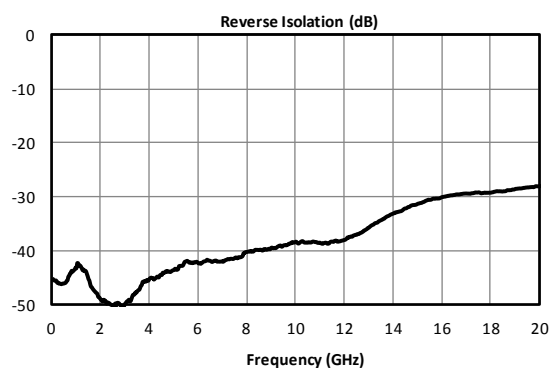
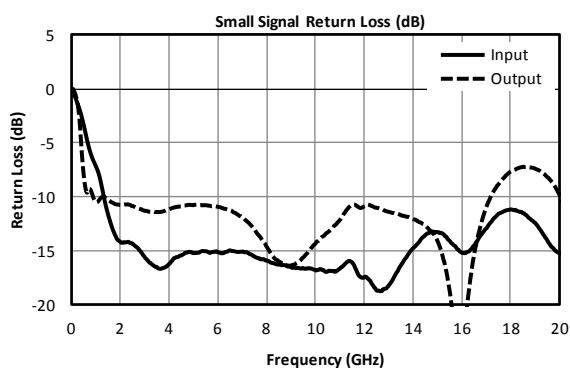
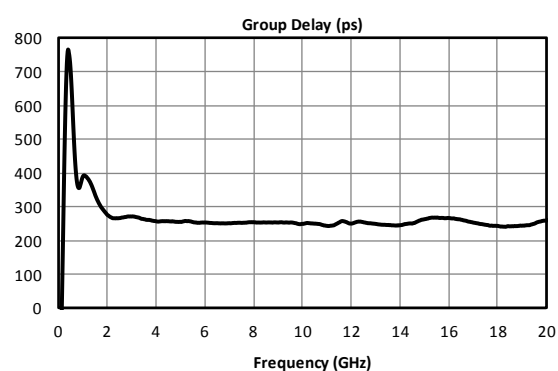
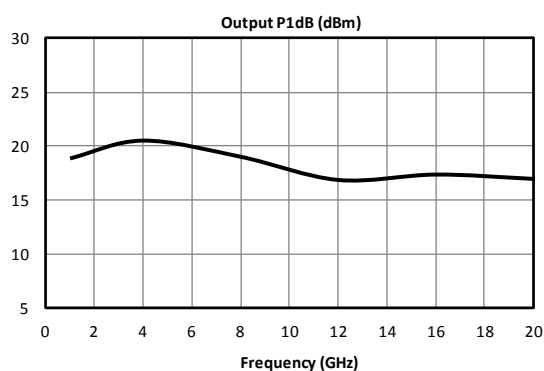
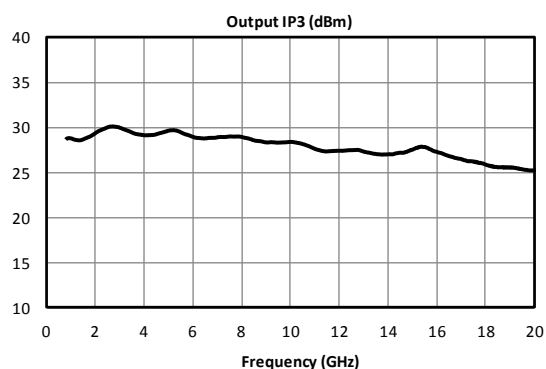
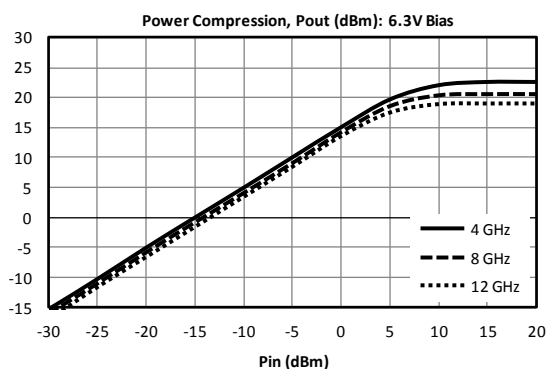


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Frequency 1.0 to 20.0 GHz



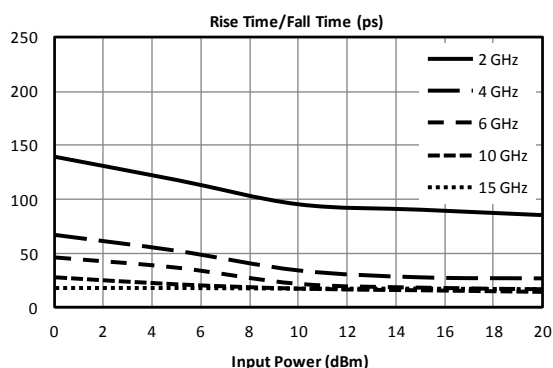


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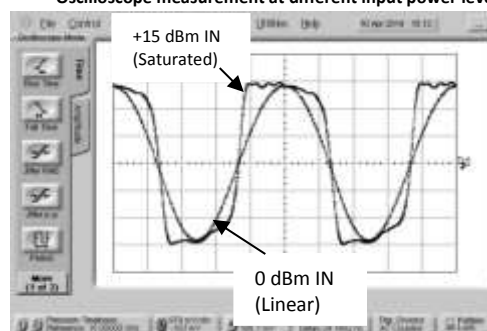
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Frequency 1.0 to 20.0 GHz



Oscilloscope measurement at different input power level



DATA SHEET NOTES:

1. Maximum input power without damage is +18 dBm at +70°C.
2. Specifications are subject to change without notice. Contact Marki Microwave for the most recent specifications and data sheets.

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