



BROADBAND DISTRIBUTED AMPLIFIER (POSITIVE-BIAS ONLY)

AP-0120

The AP-0120 is a positive bias only multipurpose amplifier available in a connectorized or surface mount EZ package. It consists of two distributed MMIC amplifiers 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
- +21 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	0	+10	+18
Saturated Output Power (dBm)				
+6 Volts Bias		+16	+21	
+5 Volts Bias		+15	+20	
Saturated Output Voltage (V_{p-p}) ¹			7	
Small Signal Gain (dB)			30	
Return Loss (dB)			10	
Reverse Isolation (dB)			40	
Output Third Order Intercept (dBm)			23	
Power Consumption (W)			1.1	2
Bias Requirements (mA)				
+5.0 to +6.3 Volts DC			220	320

¹With a 50 Ω load impedance

Model Number	Description	Package Style(s) ²
AP-0120EZ ¹ AP-0120EZP	1.0 to 20.0 GHz Amplifier	EZ , EZP

¹EZ-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.



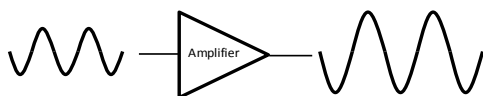
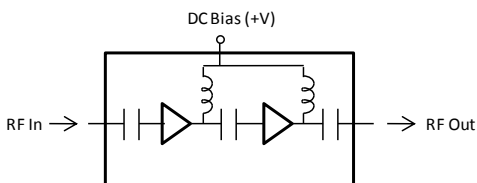
BROADBAND DISTRIBUTED AMPLIFIER

AP-0120

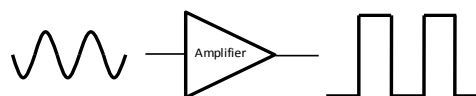
Page 2

Frequency 1.0 to 20.0 GHz

Schematic

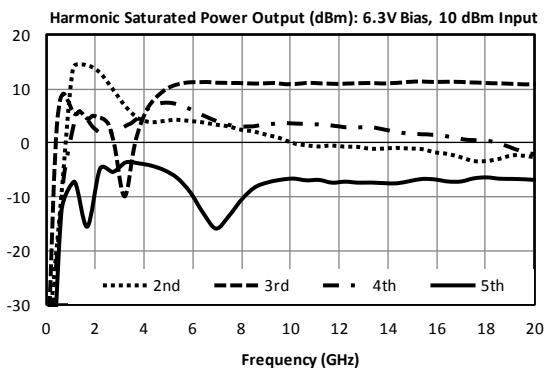
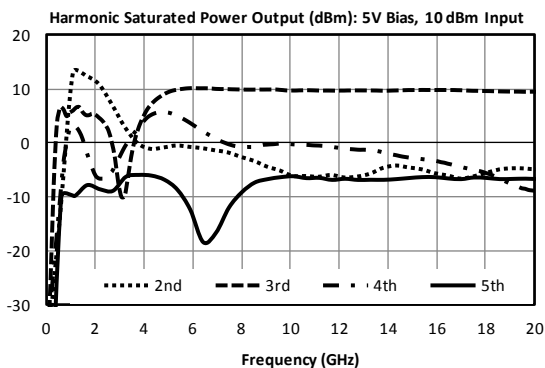
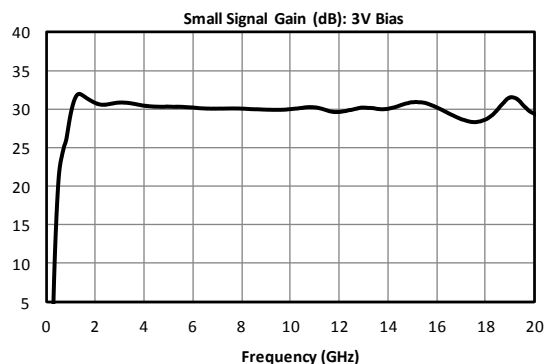
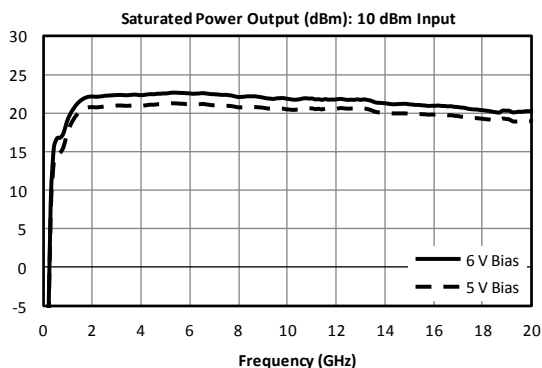


Linear operation (<-10 dBm In)



Saturated operation (>-5 dBm In)

Typical Performance



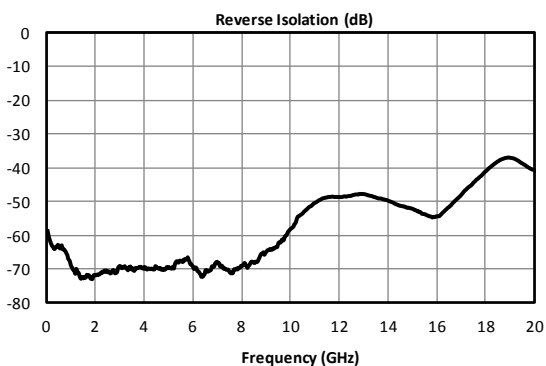
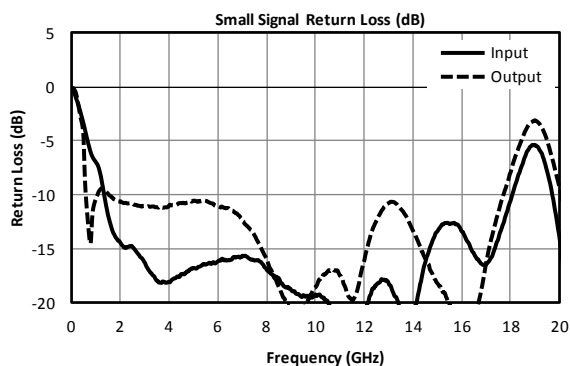
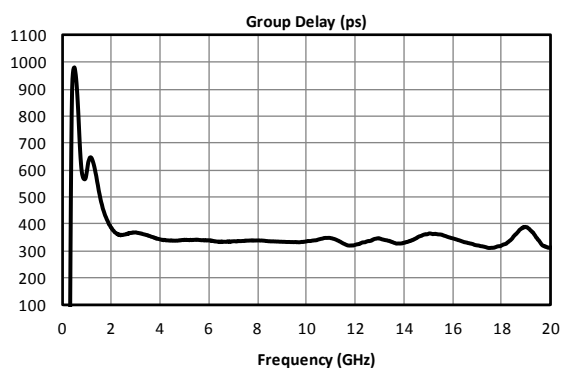
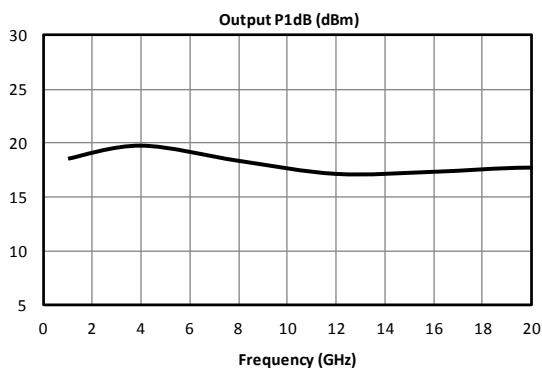
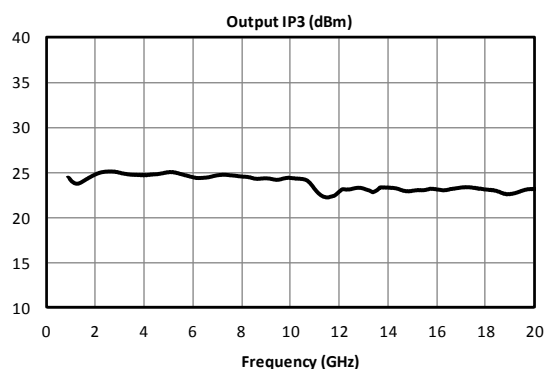
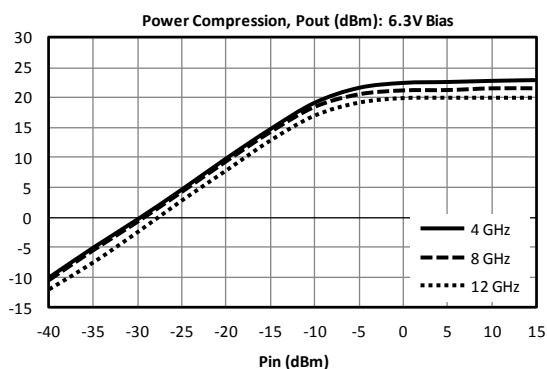


BROADBAND DISTRIBUTED AMPLIFIER

AP-0120

Page 3

Frequency 1.0 to 20.0 GHz



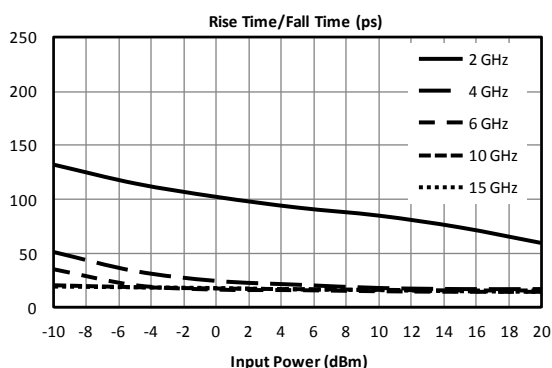


BROADBAND DISTRIBUTED AMPLIFIER

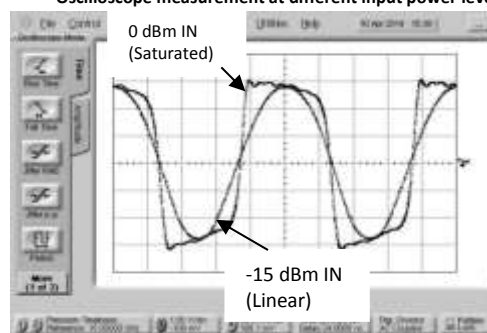
AP-0120

Page 4

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.

Marki Microwave reserves the right to make changes to the product(s) or information contained herein without notice. Marki Microwave makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Marki Microwave assume any liability whatsoever arising out of the use of or application of any product.