

## BROADBAND DISTRIBUTED AMPLIFIER (POSITIVE-BIAS ONLY)

**AP-0015**

The AP-0015 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 5 MHz to 15 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
- +23 dBm Typical Saturated Output Power
- Buffer- Amplifiers for Mixer LO
- 3<sup>rd</sup> and 5<sup>th</sup> Harmonic Generation

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

| Parameter   | Frequency<br>(GHz) | Min | Typ | Max |     |
|---|--------------------|-----|-----|-----|-----|
| Input for Saturated Output (dBm)                    | .005-15.0          | +5  | +10 | +17 |     |
| Saturated Output Power (dBm)                        |                    |     |     |     |     |
| +7 Volts Bias                                       |                    | +18 | +23 |     |     |
| +5 Volts Bias                                       |                    | +16 | +21 |     |     |
| Saturated Output Voltage ( $V_{p-p}$ ) <sup>1</sup> |                    |     |     | 9   |     |
| Small Signal Gain (dB)                              |                    |     |     | 21  |     |
| Return Loss (dB)                                    |                    |     |     | 12  |     |
| Reverse Isolation (dB)                              |                    |     |     | 50  |     |
| Output Third Order Intercept (dBm)                  |                    |     |     | 27  |     |
| Rise/Fall Time (ps) <sup>2</sup>                    |                    |     |     | 15  |     |
| Power Consumption (W)                               |                    |     |     | 1.3 | 2.6 |
| Bias Requirements (mA)                              |                    |     |     |     |     |
| +5.0 to +8.0 Volts DC                               |                    |     |     | 260 | 325 |

<sup>1</sup>With a 50  $\Omega$  load impedance

<sup>2</sup>Minimum rise/fall time with a saturated input. See plot on page 4 for more detail

| Model Number                         | Description                   | Package Style(s) <sup>2</sup>            |
|--------------------------------------|-------------------------------|--|
| AP-0015EZ <sup>1</sup><br>AP-0015EZP | 5.0 MHz to 15.0 GHz Amplifier | <a href="#">EZ</a> , <a href="#">EZP</a> |

<sup>1</sup>EZ-Carrier Distributed Amplifiers are not suitable for in-line reflow solder. Manual assembly only.

(Refer to [EZ/EQ Amplifiers Installation Notes](#)).

<sup>2</sup>Connectorized test fixtures available for most carrier and surface mount packages. Contact factory.

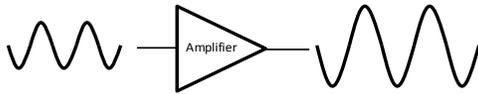
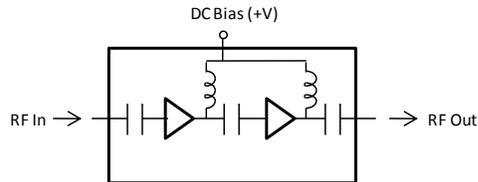
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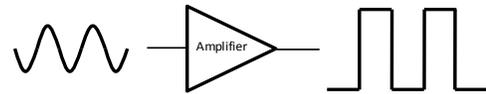
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Frequency .005 to 15.0 GHz

## Schematic

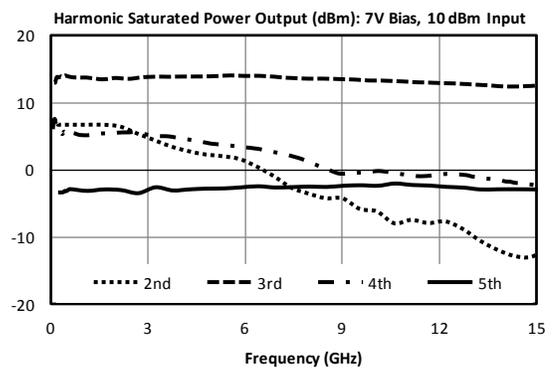
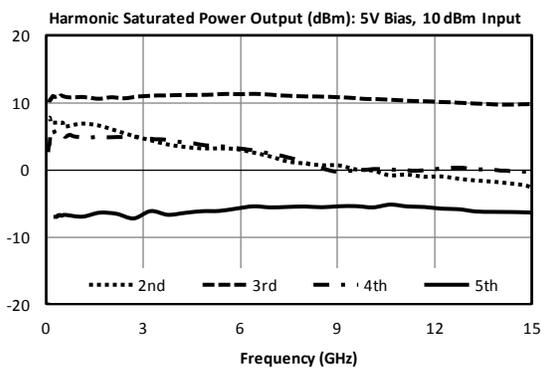
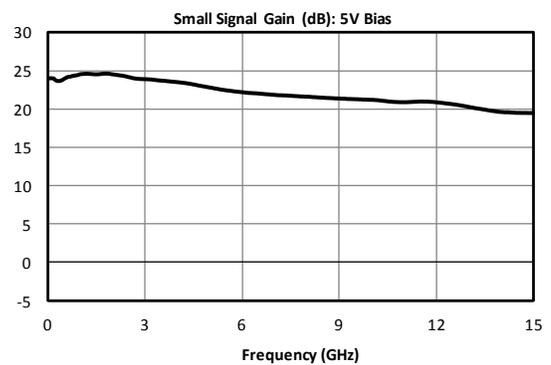
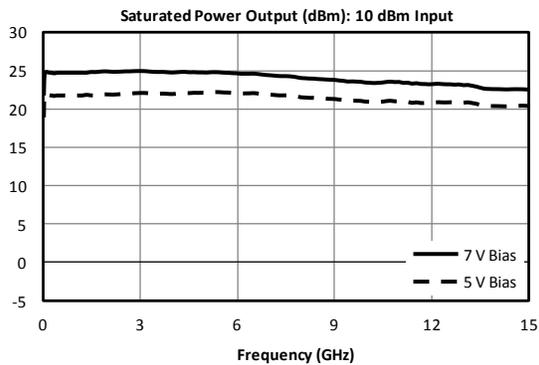


Linear operation (<-5 dBm)



Saturated operation (>+5 dBm)

## Typical Performance



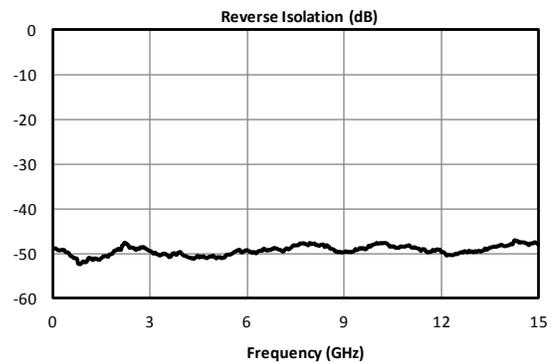
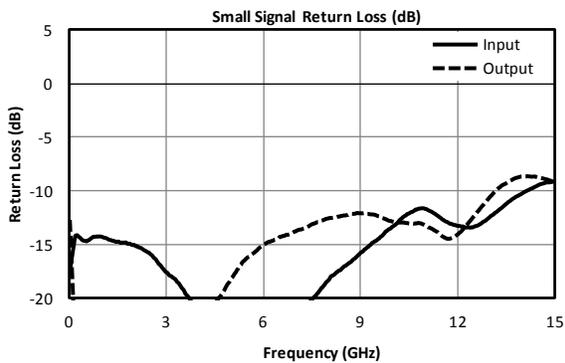
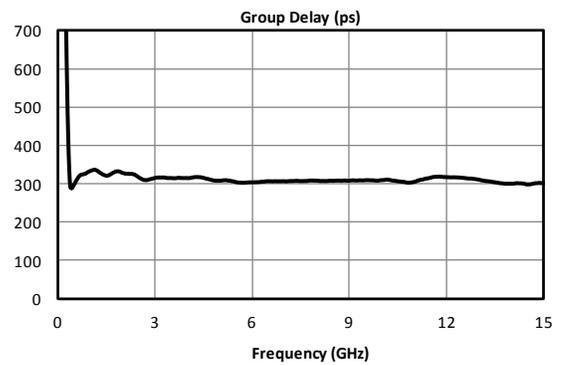
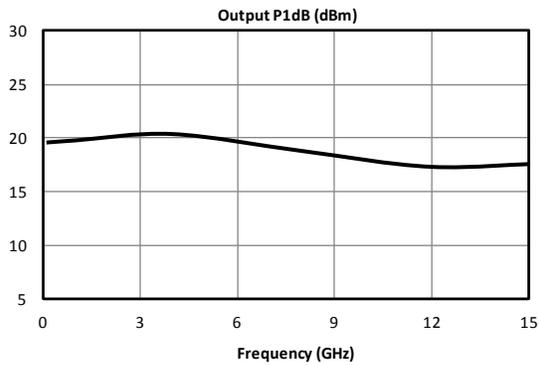
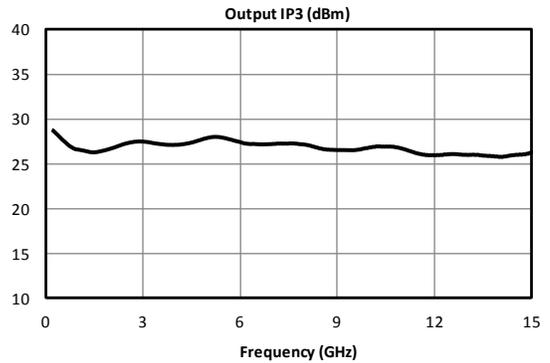
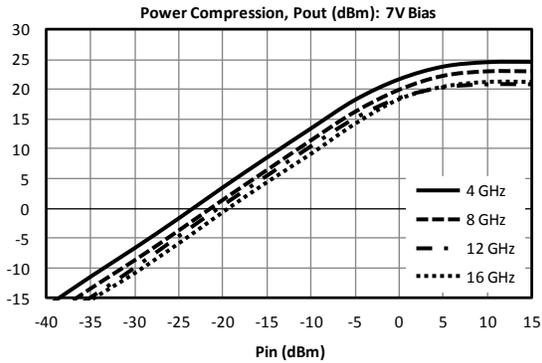


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Frequency .005 to 15.0 GHz

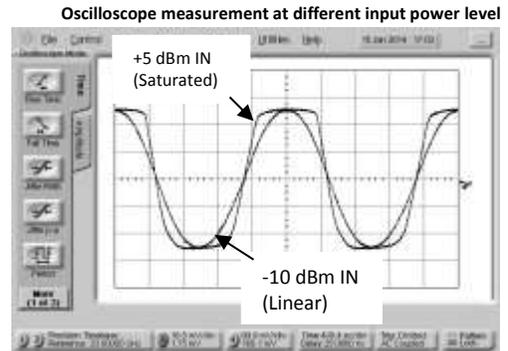
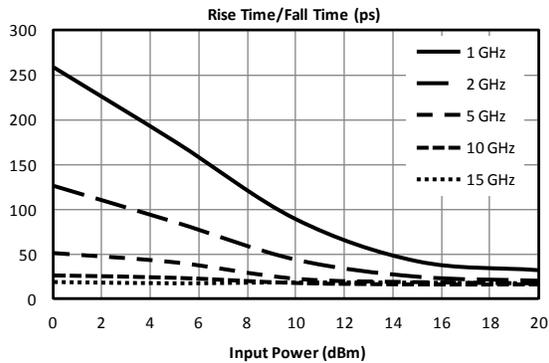


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Frequency .005 to 15.0 GHz



**DATA SHEET NOTES:**

1. Maximum input power without damage is +17 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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