

### FEATURES

- Fixed gain of 20 dB
- Operation from 20 MHz to 1.0 GHz
- Input and output internally matched to 50  $\Omega$
- Integrated bias control circuit
- OIP3
  - 45.0 dBm at 190 MHz
  - 49.0 dBm at 380 MHz
- Noise figure
  - 2.6 dB at 190 MHz
  - 2.7 dB at 380 MHz
- P1dB of 19.6 dBm at 190 MHz
- Single 5 V power supply
- Low quiescent current of 105 mA
- MSL-1 rated SOT-89 package
- ESD rating of  $\pm 2$  kV (Class 2)
- Pin-compatible with the 16 dB gain [ADL5535](#)

### GENERAL DESCRIPTION

The [ADL5536](#) is a 20 dB linear amplifier that operates at frequencies up to 1 GHz. The device can be used in a wide variety of cellular, CATV, military, and instrumentation equipment.

The [ADL5536](#) provides the highest dynamic range available from an internally matched IF gain block. This is accomplished by providing extremely low noise figures and very high OIP3 specifications simultaneously across the entire 1 GHz frequency range. The [ADL5536](#) also provides extremely flat gain and P1dB over frequency, which are stable over temperature, power supply, and from device to device.

The device is internally matched to 50  $\Omega$  at the input and output, making the [ADL5536](#) very easy to implement in a wide variety of applications. Only input/output ac coupling capacitors, power supply decoupling capacitors, and an external inductor are required for operation.

### FUNCTIONAL BLOCK DIAGRAM

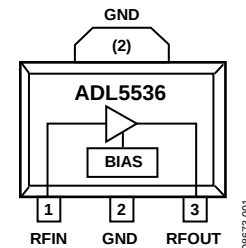


Figure 1.

The [ADL5536](#) is fabricated on a GaAs HBT process and has an ESD rating of  $\pm 2$  kV (Class 2). The device is assembled in an MSL-1 rated SOT-89 package that uses an exposed paddle for excellent thermal impedance.

The [ADL5536](#) consumes only 105 mA on a single 5 V supply and is fully specified for operation from  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .

The [ADL5536](#) is also pin-compatible with the 16 dB gain [ADL5535](#). Fully populated evaluation boards are available for each amplifier.

# ADL5536\* PRODUCT PAGE QUICK LINKS

Last Content Update: 02/23/2017

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## COMPARABLE PARTS

View a parametric search of comparable parts.

## EVALUATION KITS

- ADL5536 Evaluation Board

## DOCUMENTATION

### Application Notes

- AN-1363: Meeting Biasing Requirements of Externally Biased RF/Microwave Amplifiers with Active Bias Controllers
- Broadband Biasing of Amplifiers General Application Note
- MMIC Amplifier Biasing Procedure Application Note
- Thermal Management for Surface Mount Components General Application Note

### Data Sheet

- ADL5536: 20 MHz to 1.0 GHz IF Gain Block Data Sheet

## TOOLS AND SIMULATIONS

- ADI RF Amplifier Library for Agilent ADS
- ADIsimPLL™
- ADIsimRF
- ADL5536 S-Parameters

## REFERENCE DESIGNS

- CN0171

## REFERENCE MATERIALS

### Product Selection Guide

- RF Source Booklet

## DESIGN RESOURCES

- ADL5536 Material Declaration
- PCN-PDN Information
- Quality And Reliability
- Symbols and Footprints

## DISCUSSIONS

View all ADL5536 EngineerZone Discussions.

## SAMPLE AND BUY

Visit the product page to see pricing options.

## TECHNICAL SUPPORT

Submit a technical question or find your regional support number.

## DOCUMENT FEEDBACK

Submit feedback for this data sheet.

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REVISION HISTORY

11/13—Rev. 0 to Rev. A

|                                                |    |
|------------------------------------------------|----|
| Added Figure 15, Renumbered Sequentially ..... | 10 |
| Changes to Figure 17.....                      | 11 |
| Updated Outline Dimensions .....               | 14 |

4/10—Revision 0: Initial Version

## SPECIFICATIONS

$V_{CC} = 5\text{ V}$  and  $T_A = 25^\circ\text{C}$ , unless otherwise noted.

Table 1.

| Parameter                            | Test Conditions/Comments                                                | Min  | Typ        | Max  | Unit |
|--------------------------------------|-------------------------------------------------------------------------|------|------------|------|------|
| OVERALL FUNCTION                     |                                                                         |      |            |      |      |
| Frequency Range                      |                                                                         | 20   |            | 1000 | MHz  |
| FREQUENCY = 20 MHz                   |                                                                         |      |            |      |      |
| Gain                                 |                                                                         |      | 20.2       |      | dB   |
| Output 1 dB Compression Point (P1dB) |                                                                         |      | 18.0       |      | dBm  |
| Output Third-Order Intercept (OIP3)  | $\Delta f = 1\text{ MHz}$ , output power ( $P_{OUT}$ ) = 3 dBm per tone |      | 39.5       |      | dBm  |
| Second Harmonic                      | $P_{OUT} = 0\text{ dBm}$                                                |      | -59.2      |      | dBc  |
| Third Harmonic                       | $P_{OUT} = 0\text{ dBm}$                                                |      | -89.1      |      | dBc  |
| Noise Figure                         |                                                                         |      | 2.5        |      | dB   |
| FREQUENCY = 70 MHz                   |                                                                         |      |            |      |      |
| Gain                                 |                                                                         |      | 20.1       |      | dB   |
| vs. Frequency                        | $\pm 50\text{ MHz}$                                                     |      | $\pm 0.10$ |      | dB   |
| vs. Temperature                      | $-40^\circ\text{C} \leq T_A \leq +85^\circ\text{C}$                     |      | $\pm 0.20$ |      | dB   |
| vs. Supply Voltage                   | 4.75 V to 5.25 V                                                        |      | $\pm 0.07$ |      | dB   |
| Output 1 dB Compression Point (P1dB) |                                                                         |      | 19.6       |      | dBm  |
| Output Third-Order Intercept (OIP3)  | $\Delta f = 1\text{ MHz}$ , output power ( $P_{OUT}$ ) = 3 dBm per tone |      | 41.0       |      | dBm  |
| Second Harmonic                      | $P_{OUT} = 0\text{ dBm}$                                                |      | -63        |      | dBc  |
| Third Harmonic                       | $P_{OUT} = 0\text{ dBm}$                                                |      | -88        |      | dBc  |
| Noise Figure                         |                                                                         |      | 2.4        |      | dB   |
| FREQUENCY = 190 MHz                  |                                                                         |      |            |      |      |
| Gain                                 |                                                                         | 18.8 | 19.8       | 20.8 | dB   |
| vs. Frequency                        | $\pm 50\text{ MHz}$                                                     |      | $\pm 0.06$ |      | dB   |
| vs. Temperature                      | $-40^\circ\text{C} \leq T_A \leq +85^\circ\text{C}$                     |      | $\pm 0.19$ |      | dB   |
| vs. Supply Voltage                   | 4.75 V to 5.25 V                                                        |      | $\pm 0.07$ |      | dB   |
| Output 1 dB Compression Point (P1dB) |                                                                         | 18.6 | 19.6       |      | dBm  |
| Output Third-Order Intercept (OIP3)  | $\Delta f = 1\text{ MHz}$ , output power ( $P_{OUT}$ ) = 3 dBm per tone |      | 45.0       |      | dBm  |
| Second Harmonic                      | $P_{OUT} = 0\text{ dBm}$                                                |      | -59.6      |      | dBc  |
| Third Harmonic                       | $P_{OUT} = 0\text{ dBm}$                                                |      | -90.4      |      | dBc  |
| Noise Figure                         |                                                                         |      | 2.6        |      | dB   |
| FREQUENCY = 380 MHz                  |                                                                         |      |            |      |      |
| Gain                                 |                                                                         | 18.4 | 19.4       | 20.4 | dB   |
| vs. Frequency                        | $\pm 50\text{ MHz}$                                                     |      | $\pm 0.10$ |      | dB   |
| vs. Temperature                      | $-40^\circ\text{C} \leq T_A \leq +85^\circ\text{C}$                     |      | $\pm 0.20$ |      | dB   |
| vs. Supply Voltage                   | 4.75 V to 5.25 V                                                        |      | $\pm 0.08$ |      | dB   |
| Output 1 dB Compression Point (P1dB) |                                                                         | 18.7 | 19.7       |      | dBm  |
| Output Third-Order Intercept (OIP3)  | $\Delta f = 1\text{ MHz}$ , output power ( $P_{OUT}$ ) = 3 dBm per tone |      | 49.0       |      | dBm  |
| Second Harmonic                      | $P_{OUT} = 0\text{ dBm}$                                                |      | -61.4      |      | dBc  |
| Third Harmonic                       | $P_{OUT} = 0\text{ dBm}$                                                |      | -77.2      |      | dBc  |
| Noise Figure                         |                                                                         |      | 2.7        |      | dB   |
| FREQUENCY = 748 MHz                  |                                                                         |      |            |      |      |
| Gain                                 |                                                                         |      | 18.5       |      | dB   |
| vs. Frequency                        | $\pm 50\text{ MHz}$                                                     |      | $\pm 0.14$ |      | dB   |
| vs. Temperature                      | $-40^\circ\text{C} \leq T_A \leq +85^\circ\text{C}$                     |      | $\pm 0.23$ |      | dB   |
| vs. Supply Voltage                   | 4.75 V to 5.25 V                                                        |      | $\pm 0.09$ |      | dB   |
| Output 1 dB Compression Point (P1dB) |                                                                         |      | 19.7       |      | dBm  |
| Output Third-Order Intercept (OIP3)  | $\Delta f = 1\text{ MHz}$ , output power ( $P_{OUT}$ ) = 3 dBm per tone |      | 42.5       |      | dBm  |
| Second Harmonic                      | $P_{OUT} = 0\text{ dBm}$                                                |      | -53.2      |      | dBc  |
| Third Harmonic                       | $P_{OUT} = 0\text{ dBm}$                                                |      | -70.7      |      | dBc  |
| Noise Figure                         |                                                                         |      | 2.7        |      | dB   |

| Parameter                            | Test Conditions/Comments                                               | Min | Typ        | Max | Unit |
|--------------------------------------|------------------------------------------------------------------------|-----|------------|-----|------|
| FREQUENCY = 900 MHz                  |                                                                        |     |            |     |      |
| Gain                                 |                                                                        |     | 18.5       |     | dB   |
| vs. Frequency                        | $\pm 50$ MHz                                                           |     | $\pm 0.14$ |     | dB   |
| vs. Temperature                      | $-40^{\circ}\text{C} \leq T_A \leq +85^{\circ}\text{C}$                |     | $\pm 0.23$ |     | dB   |
| vs. Supply Voltage                   | 4.75 V to 5.25 V                                                       |     | $\pm 0.10$ |     | dB   |
| Output 1 dB Compression Point (P1dB) |                                                                        |     | 19.9       |     | dBm  |
| Output Third-Order Intercept (OIP3)  | $\Delta f = 1$ MHz, output power ( $P_{\text{OUT}}$ ) = 3 dBm per tone |     | 41.5       |     | dBm  |
| Second Harmonic                      | $P_{\text{OUT}} = 0$ dBm                                               |     | -64.9      |     | dBc  |
| Third Harmonic                       | $P_{\text{OUT}} = 0$ dBm                                               |     | -68        |     | dBc  |
| Noise Figure                         |                                                                        |     | 2.7        |     | dB   |
| FREQUENCY = 1000 MHz                 |                                                                        |     |            |     |      |
| Gain                                 |                                                                        |     | 18.1       |     | dB   |
| vs. Frequency                        | $\pm 50$ MHz                                                           |     | $\pm 0.14$ |     | dB   |
| vs. Temperature                      | $-40^{\circ}\text{C} \leq T_A \leq +85^{\circ}\text{C}$                |     | $\pm 0.23$ |     | dB   |
| vs. Supply Voltage                   | 4.75 V to 5.25 V                                                       |     | $\pm 0.10$ |     | dB   |
| Output 1 dB Compression Point (P1dB) |                                                                        |     | 19.7       |     | dBm  |
| Output Third-Order Intercept (OIP3)  | $\Delta f = 1$ MHz, output power ( $P_{\text{OUT}}$ ) = 3 dBm per tone |     | 40.5       |     | dBm  |
| Second Harmonic                      | $P_{\text{OUT}} = 0$ dBm                                               |     | -54.8      |     | dBc  |
| Third Harmonic                       | $P_{\text{OUT}} = 0$ dBm                                               |     | -66.6      |     | dBc  |
| Noise Figure                         |                                                                        |     | 2.8        |     | dB   |
| POWER INTERFACE                      |                                                                        |     |            |     |      |
| Supply Voltage ( $V_{\text{CC}}$ )   |                                                                        | 4.5 | 5.0        | 5.5 | V    |
| Supply Current                       |                                                                        |     | 105        | 122 | mA   |
| vs. Temperature                      | $-40^{\circ}\text{C} \leq T_A \leq +85^{\circ}\text{C}$                |     | $\pm 2.0$  |     | mA   |
| Power Dissipation                    | $V_{\text{CC}} = 5$ V                                                  |     | 0.53       |     | W    |

**TYPICAL SCATTERING PARAMETERS (S-PARAMETERS)**

$V_{CC} = 5\text{ V}$ ,  $T_A = 25^\circ\text{C}$ , and the effects of the test fixture have been de-embedded up to the pins of the device.

Table 2.

| Frequency<br>(MHz) | S11            |           | S21            |           | S12            |           | S22            |           |
|--------------------|----------------|-----------|----------------|-----------|----------------|-----------|----------------|-----------|
|                    | Magnitude (dB) | Angle (°) | Magnitude (dB) | Angle (°) | Magnitude (dB) | Angle (°) | Magnitude (dB) | Angle (°) |
| 20                 | -14.53         | -120.58   | 20.45          | 171.91    | -22.63         | +7.79     | -16.26         | -139.94   |
| 70                 | -19.07         | -156.59   | 20.01          | 172.48    | -22.66         | +0.45     | -16.29         | -164.26   |
| 120                | -19.61         | -160.48   | 19.91          | 169.98    | -22.65         | -1.59     | -16.26         | -166.95   |
| 190                | -19.62         | -159.92   | 19.84          | 165.55    | -22.64         | -3.78     | -16.06         | -165.90   |
| 240                | -19.43         | -157.66   | 19.77          | 162.37    | -22.63         | -5.22     | -15.84         | -164.33   |
| 290                | -19.04         | -155.64   | 19.74          | 159.05    | -22.62         | -6.64     | -15.58         | -162.72   |
| 340                | -18.78         | -153.97   | 19.65          | 155.59    | -22.62         | -7.93     | -15.28         | -161.62   |
| 390                | -18.37         | -150.66   | 19.54          | 152.48    | -22.59         | -9.34     | -14.97         | -159.87   |
| 440                | -17.83         | -149.87   | 19.50          | 149.29    | -22.57         | -10.74    | -14.53         | -158.25   |
| 490                | -17.32         | -149.82   | 19.41          | 146.05    | -22.61         | -12.05    | -14.14         | -158.63   |
| 540                | -16.88         | -149.59   | 19.34          | 142.73    | -22.61         | -13.36    | -13.80         | -158.50   |
| 590                | -16.51         | -148.73   | 19.22          | 139.62    | -22.59         | -14.66    | -13.47         | -158.24   |
| 640                | -16.06         | -148.92   | 19.14          | 136.53    | -22.59         | -16.00    | -13.12         | -158.50   |
| 690                | -15.72         | -149.26   | 19.04          | 133.27    | -22.59         | -17.30    | -12.80         | -158.89   |
| 740                | -15.37         | -149.29   | 18.92          | 130.33    | -22.58         | -18.61    | -12.51         | -159.33   |
| 790                | -15.04         | -149.83   | 18.82          | 127.22    | -22.57         | -19.92    | -12.23         | -159.94   |
| 840                | -14.73         | -150.32   | 18.70          | 124.22    | -22.57         | -21.26    | -11.96         | -160.63   |
| 900                | -14.35         | -150.94   | 18.57          | 120.78    | -22.56         | -22.85    | -11.65         | -161.64   |
| 950                | -14.10         | -151.64   | 18.44          | 117.74    | -22.56         | -24.21    | -11.42         | -162.56   |
| 1000               | -13.83         | -152.27   | 18.32          | 115.01    | -22.56         | -25.53    | -11.19         | -163.52   |
| 1050               | -13.59         | -153.23   | 18.21          | 112.08    | -22.55         | -26.89    | -10.99         | -164.55   |
| 1100               | -13.38         | -153.86   | 18.06          | 109.34    | -22.56         | -28.24    | -10.80         | -165.66   |
| 1150               | -13.16         | -154.76   | 17.96          | 106.63    | -22.55         | -29.58    | -10.63         | -166.70   |
| 1200               | -12.99         | -155.57   | 17.82          | 103.80    | -22.55         | -30.95    | -10.47         | -167.80   |
| 1250               | -12.77         | -156.33   | 17.69          | 101.33    | -22.54         | -32.33    | -10.30         | -168.91   |
| 1300               | -12.61         | -157.32   | 17.57          | 98.53     | -22.55         | -33.74    | -10.16         | -170.07   |
| 1350               | -12.44         | -158.19   | 17.44          | 95.98     | -22.56         | -35.12    | -10.03         | -171.34   |
| 1400               | -12.30         | -159.08   | 17.32          | 93.44     | -22.57         | -36.43    | -9.92          | -172.44   |
| 1450               | -12.17         | -159.85   | 17.19          | 90.86     | -22.56         | -37.74    | -9.81          | -173.47   |
| 1500               | -12.01         | -160.65   | 17.06          | 88.41     | -22.56         | -39.12    | -9.70          | -174.66   |
| 1550               | -11.89         | -161.57   | 16.95          | 85.90     | -22.56         | -40.49    | -9.59          | -175.76   |

## ABSOLUTE MAXIMUM RATINGS

Table 3.

| Parameter                                    | Rating          |
|----------------------------------------------|-----------------|
| Supply Voltage, $V_{CC}$                     | 6.5 V           |
| Input Power (Referred to 50 $\Omega$ )       | 20 dBm          |
| Internal Power Dissipation (Paddle Soldered) | 650 mW          |
| $\theta_{JA}$ (Junction to Air)              | 30.7°C/W        |
| $\theta_{JC}$ (Junction to Paddle)           | 5.0°C/W         |
| Maximum Junction Temperature                 | 150°C           |
| Lead Temperature (Soldering, 60 sec)         | 240°C           |
| Operating Temperature Range                  | –40°C to +85°C  |
| Storage Temperature Range                    | –65°C to +150°C |

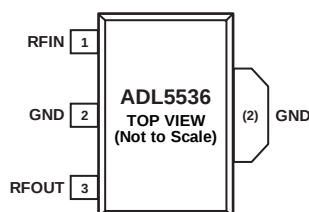
Stresses above those listed under Absolute Maximum Ratings may cause permanent damage to the device. This is a stress rating only; functional operation of the device at these or any other conditions above those indicated in the operational section of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

### ESD CAUTION

**ESD (electrostatic discharge) sensitive device.**

Charged devices and circuit boards can discharge without detection. Although this product features patented or proprietary protection circuitry, damage may occur on devices subjected to high energy ESD. Therefore, proper ESD precautions should be taken to avoid performance degradation or loss of functionality.

## PIN CONFIGURATION AND FUNCTION DESCRIPTIONS



## NOTES

1. THE EXPOSED PADDLE IS INTERNALLY CONNECTED TO GND AND MUST BE SOLDERED TO A LOW IMPEDANCE GROUND PLANE.

08673-002

Figure 2. Pin Configuration

Table 4. Pin Function Descriptions

| Pin No. | Mnemonic       | Description                                                                                                                                                                       |
|---------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | RFIN           | RF Input. This pin requires a dc blocking capacitor.                                                                                                                              |
| 2       | GND            | Ground. Connect this pin to a low impedance ground plane.                                                                                                                         |
| 3       | RFOUT          | RF Output and Supply Voltage. A dc bias is provided to this pin through an inductor that is connected to the external power supply. The RF path requires a dc blocking capacitor. |
| (2)     | Exposed Paddle | Exposed Paddle. The exposed paddle is internally connected to GND and must be soldered to a low impedance ground plane.                                                           |

## TYPICAL PERFORMANCE CHARACTERISTICS

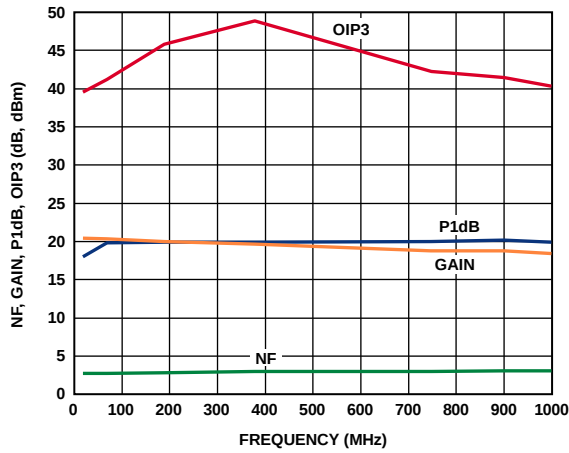


Figure 3. Noise Figure, Gain, P1dB, and OIP3 vs. Frequency

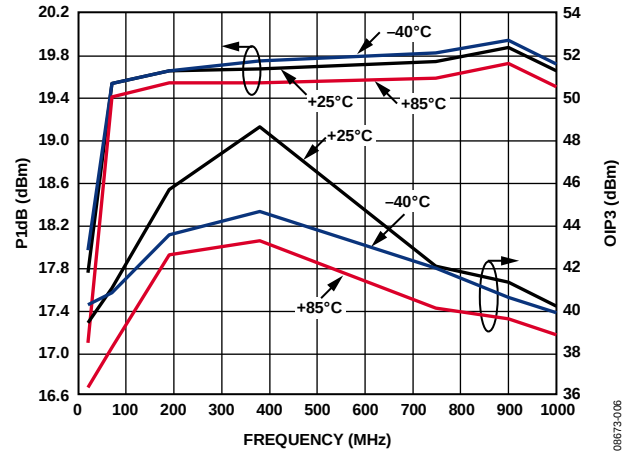


Figure 6. P1dB and OIP3 vs. Frequency and Temperature

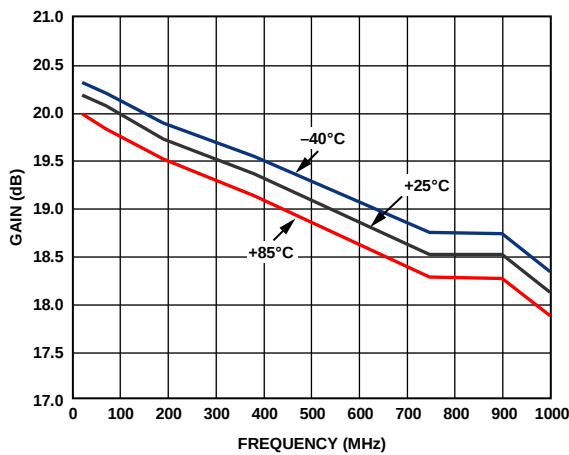


Figure 4. Gain vs. Frequency and Temperature

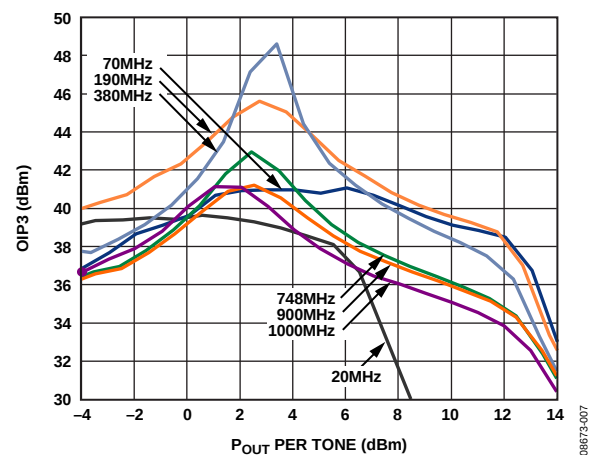
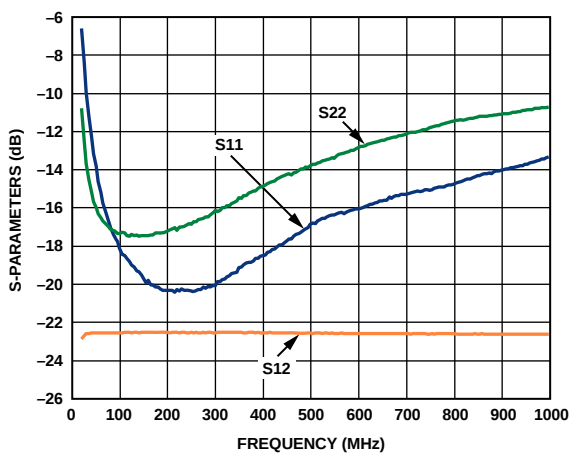
Figure 7. OIP3 vs. Output Power ( $P_{out}$ ) and Frequency

Figure 5. Input Return Loss (S11), Output Return Loss (S22), and Reverse Isolation (S12) vs. Frequency

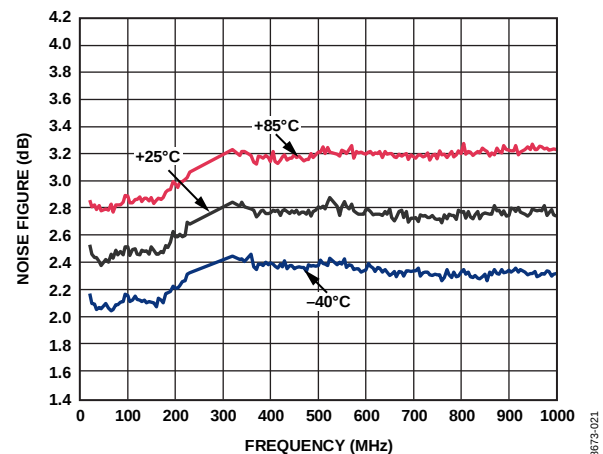


Figure 8. Noise Figure vs. Frequency and Temperature

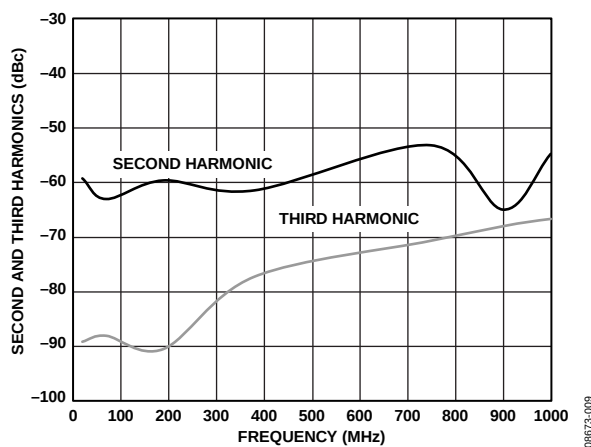
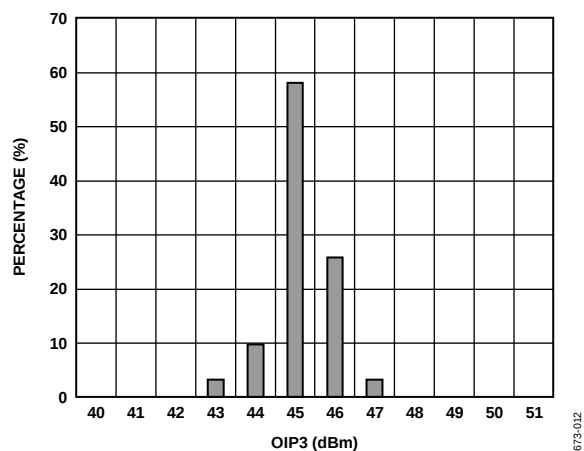
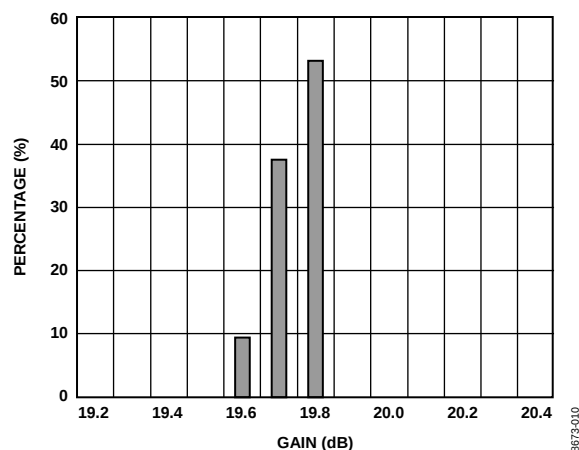
Figure 9. Single-Tone Harmonics vs. Frequency,  $P_{OUT} = 0$  dBmFigure 12. OIP3 Distribution at 190 MHz,  $P_{OUT} = 3$  dBm

Figure 10. Gain Distribution at 190 MHz

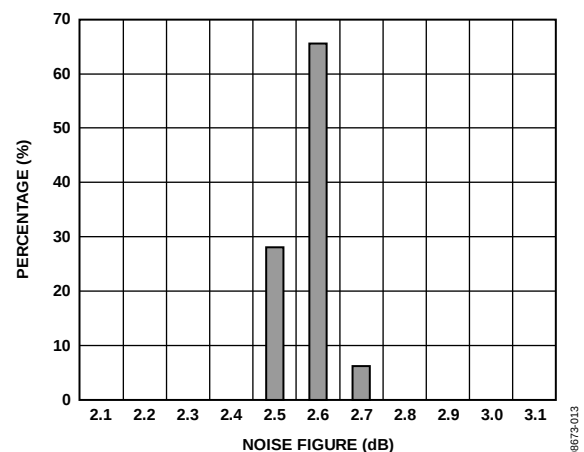


Figure 13. Noise Figure Distribution at 190 MHz

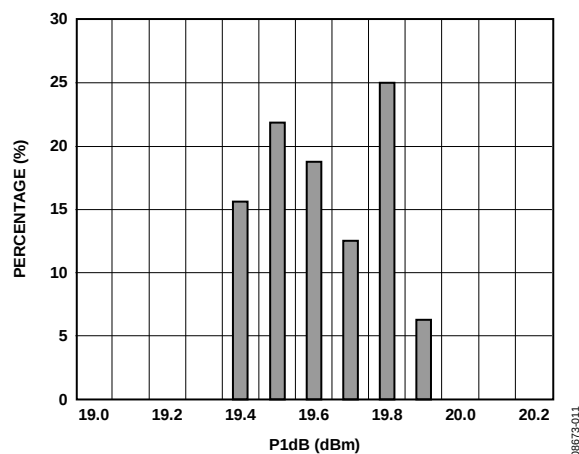


Figure 11. P1dB Distribution at 190 MHz

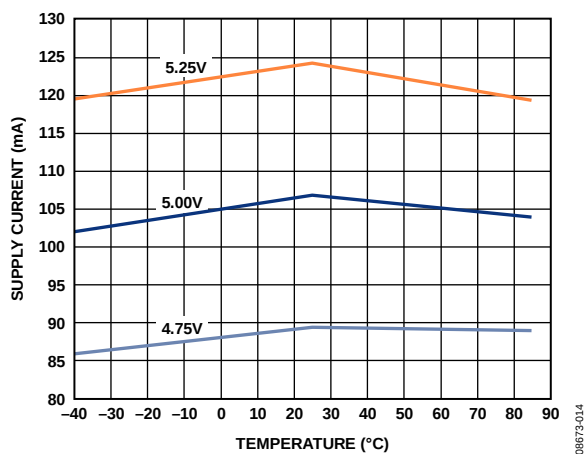


Figure 14. Supply Current vs. Temperature

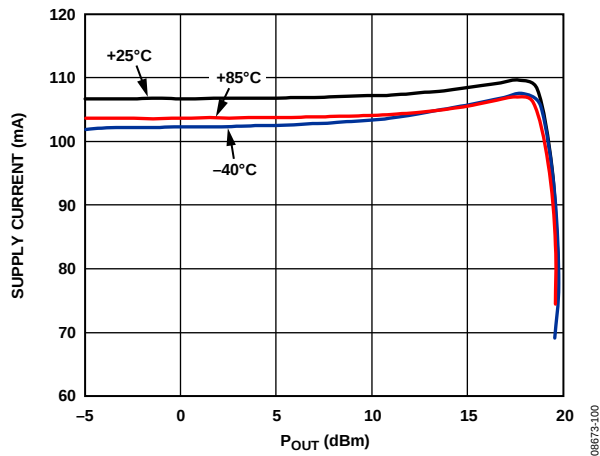
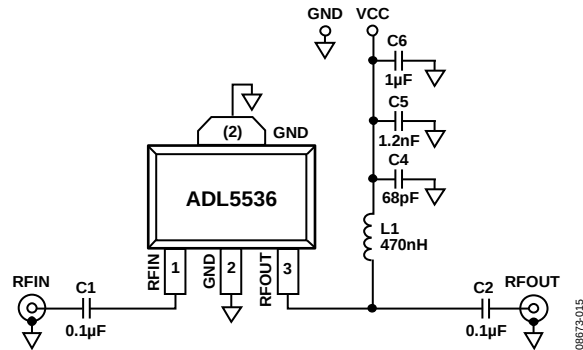


Figure 15. Supply Current vs.  $P_{OUT}$  and Temperature

## BASIC CONNECTIONS

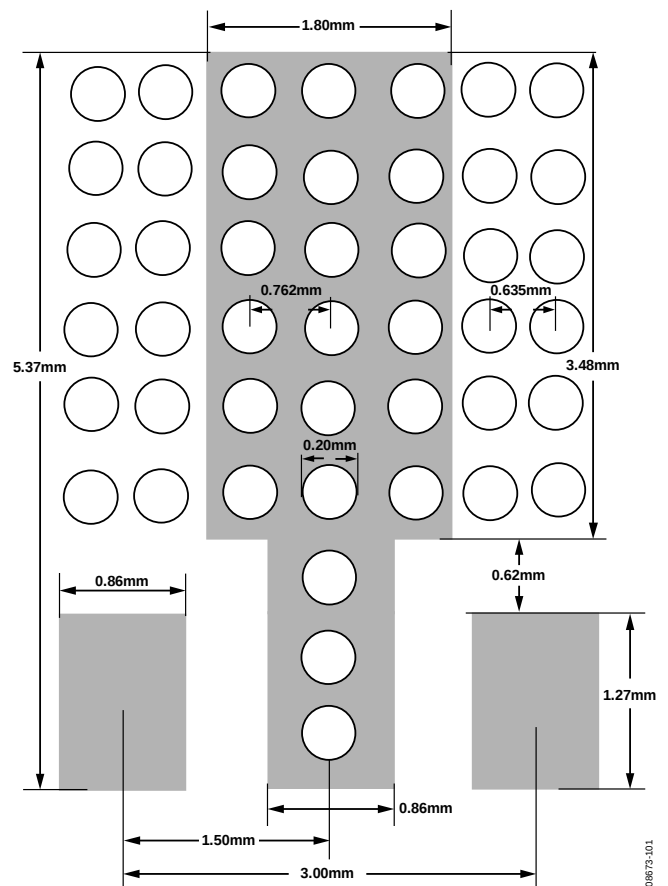
The basic connections for operating the ADL5536 are shown in Figure 16. Recommended components are listed in Table 5. The input and output should be ac-coupled with appropriately sized capacitors (device characterization was performed with 0.1  $\mu\text{F}$  capacitors). A 5 V dc bias is supplied to the amplifier through the bias inductor connected to RFOUT (Pin 3). The bias voltage should be decoupled using a 1  $\mu\text{F}$  capacitor, a 1.2 nF capacitor, and a 68 pF capacitor.



*Figure 16. Basic Connections*

## SOLDERING INFORMATION AND RECOMMENDED PCB LAND PATTERN

Figure 17 shows the recommended land pattern for the [ADL5536](#). To minimize thermal impedance, the exposed paddle on the package underside, along with Pin 2, should be soldered to a ground plane. If multiple ground layers exist, they should be stitched together using vias. For more information about land pattern design and layout, refer to the [AN-772 Application Note, A Design and Manufacturing Guide for the Lead Frame Chip Scale Package \(LFCSP\)](#).



*Figure 17. Recommended Land Pattern*

**Table 5. Recommended Components for Basic Connections**

| Frequency          | C1          | C2          | L1                                         | C4    | C5     | C6        |
|--------------------|-------------|-------------|--------------------------------------------|-------|--------|-----------|
| 20 MHz to 1000 MHz | 0.1 $\mu$ F | 0.1 $\mu$ F | 470 nH (Coilcraft 0603LS-NX or equivalent) | 68 pF | 1.2 nF | 1 $\mu$ F |

## ACPR PERFORMANCE

Figure 18 shows a plot of the adjacent channel power ratio (ACPR) vs.  $P_{OUT}$  for the ADL5536. The signal type used is a single wideband code division multiple access (W-CDMA) carrier (Test Model 1-64). This signal is generated by a very low ACPR source. ACPR is measured at the output by a high dynamic range spectrum analyzer that incorporates an instrument noise-correction function. At an output power level of +8 dBm, ACPR is still very low at -65 dBc, making the device suitable for use in driver applications.

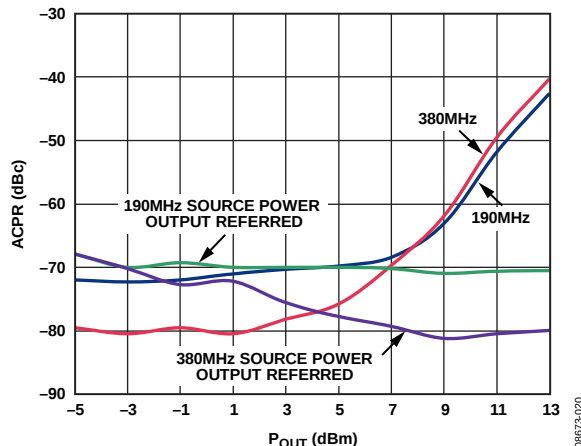


Figure 18. ACPR vs.  $P_{OUT}$ , Single W-CDMA Carrier (Test Model 1-64) at 190 MHz and 380 MHz

## ERROR VECTOR MAGNITUDE (EVM) PERFORMANCE

Error vector magnitude (EVM) is a measure used to quantify the performance of a digital radio transmitter or receiver. A signal received by a receiver has all constellation points at their ideal locations; however, various imperfections in the implementation (such as magnitude imbalance, noise floor, and phase imbalance) cause the actual constellation points to deviate from their ideal locations. The ADL5536 shows excellent performance when used with higher-order modulation schemes, such as a 16 QAM. Figure 19 illustrates the EVM performance of the ADL5536 when driven with a 16 QAM 10 Msym/s signal. Degradation of the EVM performance starts to occur at an output power of +12 dBm.

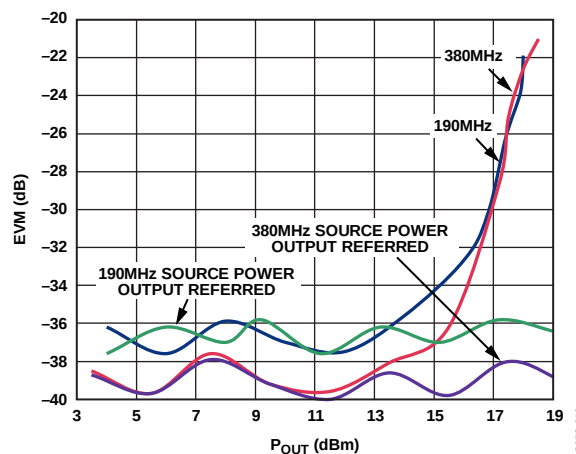


Figure 19. EVM Performance vs.  $P_{OUT}$  with a 16 QAM, 10 Msym/s Signal

## EVALUATION BOARD

Figure 20 shows the evaluation board layout, and Figure 21 shows the schematic for the ADL5536 evaluation board. The board is powered by a single 5 V supply.

The components used on the board are listed in Table 6. Power can be applied to the board through clip-on leads (VCC and GND).

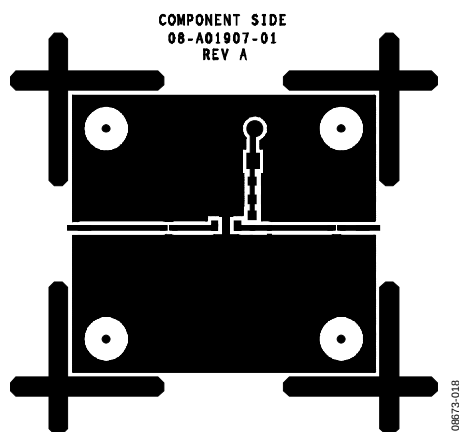


Figure 20. Evaluation Board Layout (Top)

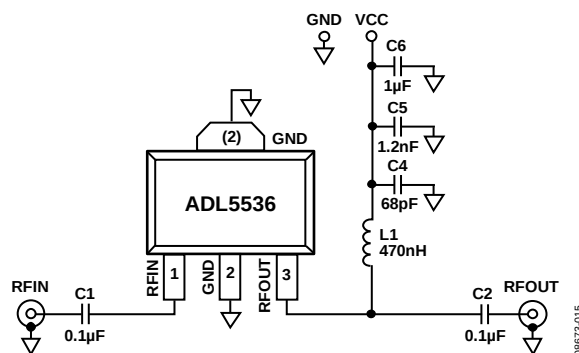


Figure 21. Evaluation Board Schematic

Table 6. Evaluation Board Components

| Component | Description                        | Default Value                                    |
|-----------|------------------------------------|--------------------------------------------------|
| C1, C2    | AC coupling capacitors             | 0.1 $\mu$ F, 0402                                |
| L1        | DC bias inductor                   | 470 nH, 0603 (Coilcraft 0603LS-NX or equivalent) |
| VCC, GND  | Clip-on terminals for power supply |                                                  |
| C4        | Power supply decoupling capacitor  | 68 pF, 0603                                      |
| C5        | Power supply decoupling capacitor  | 1.2 nF, 0603                                     |
| C6        | Power supply decoupling capacitor  | 1 $\mu$ F, 1206                                  |

OUTLINE DIMENSIONS

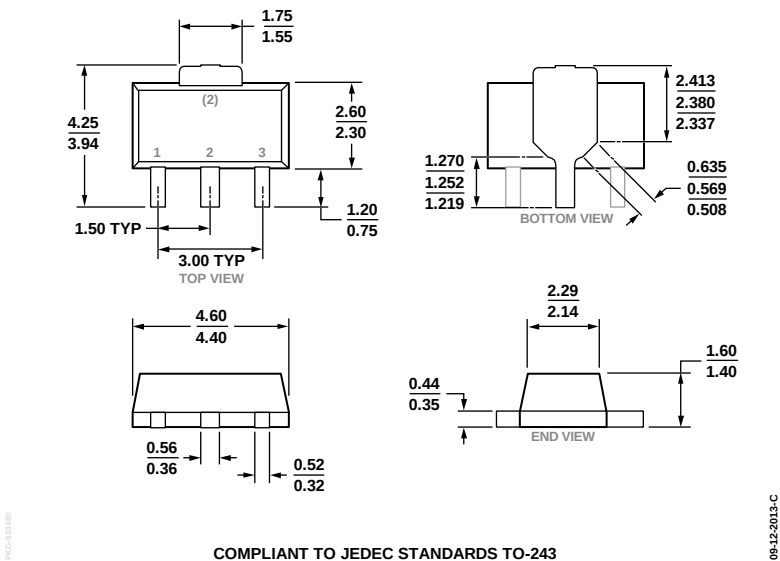


Figure 22. 3-Lead Small Outline Transistor Package [SOT-89]  
(RK-3)  
Dimensions shown in millimeters

ORDERING GUIDE

| Model <sup>1</sup> | Temperature Range | Package Description             | Package Option |
|--------------------|-------------------|---------------------------------|----------------|
| ADL5536ARKZ-R7     | −40°C to +85°C    | 3-Lead SOT-89, 7" Tape and Reel | RK-3           |
| ADL5536-EVALZ      |                   | Evaluation Board                |                |

<sup>1</sup> Z = RoHS Compliant Part.

NOTES

**NOTES**

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