# AH125

**½W High Linearity InGaP HBT Amplifier**

## Product Features

- 400 – 3600 MHz
- +28 dBm P1dB
- +45 dBm Output IP3
- 16.2 dB Gain @ 2140 MHz
- 150 mA current draw
- +5 V Single Supply
- MTTF > 100 Years
- Lead-free/Green/RoHS-compliant SOT-89 Package
- Class 2 HBM ESD rating (>2kV)

## Applications

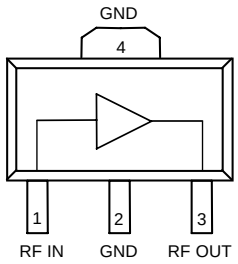
- Repeaters
- Mobile Infrastructure
- LTE / WCDMA / EDGE / CDMA

## Product Description

The AH125 is a high dynamic range driver amplifier in a low-cost surface mount package. The InGaP/GaAs HBT is able to achieve high performance across a broad range with +45 dBm OIP3 and +28 dBm of compressed 1dB power while drawing 150 mA current. The AH125 is available in a lead-free/green/RoHS-compliant SOT-89 package. All devices are 100% RF and DC tested.

The AH125 is targeted for use as a driver amplifier in wireless infrastructure where high linearity, medium power, and high efficiency are required. Internal biasing allows the AH125 to maintain high linearity over temperature and operate directly off a single +5V supply. This combination makes the device an excellent candidate for transceiver line cards in current and next generation multi-carrier 3G base stations or repeaters.

## Functional Diagram




| Function | Pin No. |
|---|---|
| RF Input | 1 |
| RF Output / Vcc | 3 |
| Ground | 2, 4 |

## Specifications

| Parameter | Units | Min | Typ | Max |
|---|---|---|---|---|
| Operational Bandwidth | MHz | 400 | | 3600 |
| Test Frequency | MHz | | 2140 | |
| Gain | dB | 14 | 16.2 | 18 |
| Input Return Loss | dB | | 12 | |
| Output Return Loss | dB | | 12 | |
| W-CDMA Channel Power[2] @ -50 dBc ACLR | dBm | | +19 | |
| Output P1dB | dBm | | +28 | |
| Output IP3[3] | dBm | +41 | +45 | |
| Noise Figure | dB | | 4.4 | |
| Quiescent Collector Current | mA | 130 | 150 | 170 |
| Device Voltage | V | | +5 | |

1. Test conditions unless otherwise noted: 25ºC, Vsupply = +5 V, in tuned application circuit.
2. W-CDMA 3GPP Test Model 1+64 DPCH, PAR = 10.3 dB @ 0.01% Probability, 3.84 MHz BW
3. OIP3 is measured with two tones separated by 1 MHz. The suppression on the largest IM3 product is used to calculate the OIP3 using a 2:1 rule. Measured at 17dBm/tone for 900 MHz, 14 dBm/tone for 1960 MHz, and 12 dBm/tone for 2140 MHz.

## Typical Performance

| Parameter | Units | Typical | | |
|---|---|---|---|---|
| Frequency | MHz | 920 | 1960 | 2140 |
| Gain | dB | 20 | 17 | 16.2 |
| Input Return Loss | dB | 20 | 16 | 12 |
| Output Return Loss | dB | 9.9 | 9 | 12 |
| W-CDMA Channel Power[2] @ -50 dBc ACLR | dBm | +19 | +19 | +19 |
| Output P1dB | dBm | +28.1 | +27.8 | +28.0 |
| Output IP3 [3] | dBm | +47 | +47 | +45 |
| Noise Figure | dB | 7.7 | 4.6 | 4.4 |
| Quiescent Collector Current | mA | | 150 | |
| Device Voltage | V | | +5 | |

## Absolute Maximum Rating

| Parameter | Rating |
|---|---|
| Storage Temperature | -65 to +150 °C |
| RF Input Power, CW, 50 Ω, T=25°C | Input P10dB |
| Device Voltage | +6 V |
| Max Junction Temperature, $T_J$ For $10^6$ hours MTTF | 200 °C |
| Thermal Resistance, $\Theta_{JC}$ | 64.3 °C / W |

Operation of this device above any of these parameters may cause permanent damage.

## Ordering Information

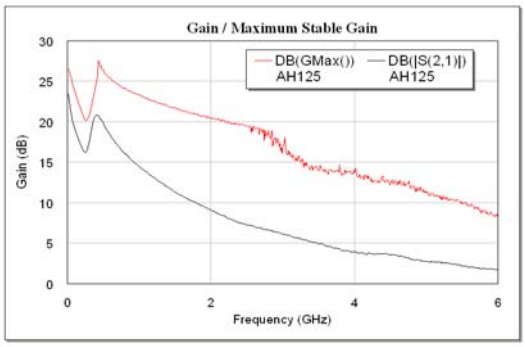
| Part No. | Description |
|---|---|
| AH125-89G | ½W High Linearity InGaP HBT Amplifier |
| AH125-89PCB900 | 900 MHz Evaluation Board |
| AH125-89PCB1960 | 1960 MHz Evaluation Board |
| AH125-89PCB2140 | 2140 MHz Evaluation Board |
| AH125-89PCB2600 | 2600 MHz Evaluation Board |

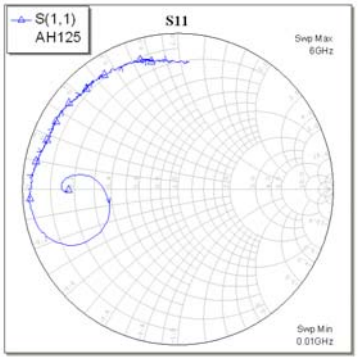
Standard T/R size = 1000 pieces on a 7" reel.

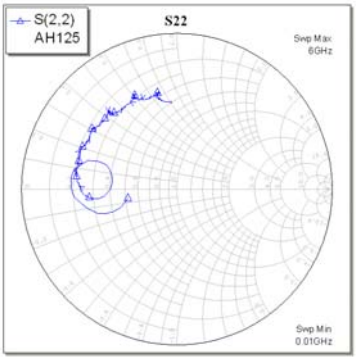
Specifications and information are subject to change without notice

## Typical Device Data

S-Parameters ($V_{Device}$ = +5 V, $I_{CC}$ = 150 mA, 25 °C, unmatched 50 ohm system)



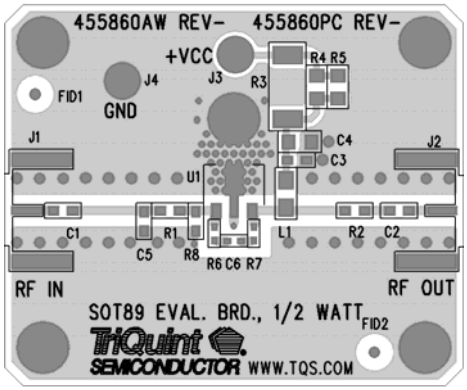

**Notes:**
The gain for the unmatched device in 50 ohm system is shown as the trace in black color. For a tuned circuit for a particular frequency, it is expected that actual gain will be higher, up to the maximum stable gain. The maximum stable gain is shown in the dashed red line.

S-Parameters ($V_{Device}$ = +5 V, $I_{CC}$ = 150 mA, 25 °C, unmatched 50 ohm system, calibrated to device leads)

| Freq (MHz) | S11 (dB) | S11 (ang) | S21 (dB) | S21 (ang) | S12 (dB) | S12 (ang) | S22 (dB) | S22 (ang) |
|---|---|---|---|---|---|---|---|---|
| 100 | -2.51 | 176.96 | 19.12 | 153.71 | -33.85 | -7.98 | -4.58 | -168.55 |
| 300 | -6.65 | -179.55 | 16.82 | 171.45 | -41.51 | -51.50 | -3.50 | 167.66 |
| 500 | -0.47 | -166.72 | 19.86 | 129.11 | -32.54 | 37.90 | -6.46 | -173.90 |
| 700 | -0.50 | 179.58 | 16.95 | 110.14 | -32.11 | 15.12 | -4.57 | -177.11 |
| 900 | -0.56 | 173.91 | 15.09 | 99.64 | -32.29 | 6.66 | -4.14 | 177.58 |
| 1100 | -0.65 | 170.52 | 13.68 | 91.32 | -32.15 | 2.53 | -3.89 | 173.40 |
| 1300 | -0.78 | 166.87 | 12.37 | 83.49 | -32.04 | -2.50 | -3.71 | 169.83 |
| 1500 | -0.82 | 163.90 | 11.21 | 76.80 | -32.11 | -4.03 | -3.64 | 167.10 |
| 1700 | -0.93 | 161.34 | 10.11 | 71.12 | -31.97 | -7.89 | -3.70 | 164.08 |
| 1900 | -0.93 | 157.61 | 9.40 | 64.93 | -31.94 | -9.93 | -3.64 | 160.19 |
| 2100 | -0.94 | 154.21 | 8.47 | 58.83 | -31.97 | -10.87 | -3.54 | 156.60 |
| 2300 | -0.91 | 151.59 | 7.66 | 53.42 | -31.80 | -14.20 | -3.48 | 153.92 |
| 2500 | -0.93 | 149.24 | 7.06 | 49.26 | -32.04 | -16.18 | -3.67 | 152.18 |
| 2700 | -0.90 | 145.94 | 6.70 | 43.87 | -31.63 | -16.91 | -3.72 | 147.67 |
| 2900 | -0.96 | 143.87 | 6.12 | 39.45 | -31.18 | -18.50 | -3.54 | 143.63 |
| 3100 | -1.07 | 139.90 | 5.74 | 34.00 | -31.37 | -23.47 | -3.52 | 141.32 |
| 3300 | -1.18 | 136.50 | 5.09 | 29.36 | -31.25 | -20.88 | -3.70 | 140.24 |
| 3500 | -1.18 | 133.80 | 4.62 | 24.20 | -31.12 | -27.12 | -3.72 | 135.07 |
| 3700 | -1.11 | 132.39 | 4.12 | 20.26 | -31.25 | -26.33 | -3.64 | 130.47 |

**Device S-parameters are available for download off of the website at: http://www.tqs.com**

## Application Circuit PCB Layout



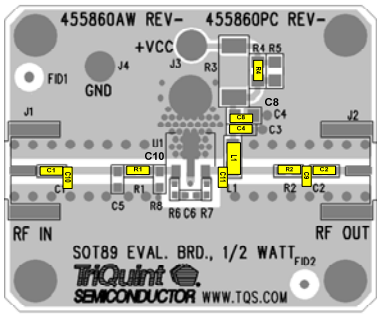

Circuit Board Material: .062" total thickness with a .014" FR4 top RF layer, 4 layers (other layers added for rigidity), 1 oz copper, $\varepsilon_r$ = 4.3, Microstrip line details: width = .031", spacing = .035"

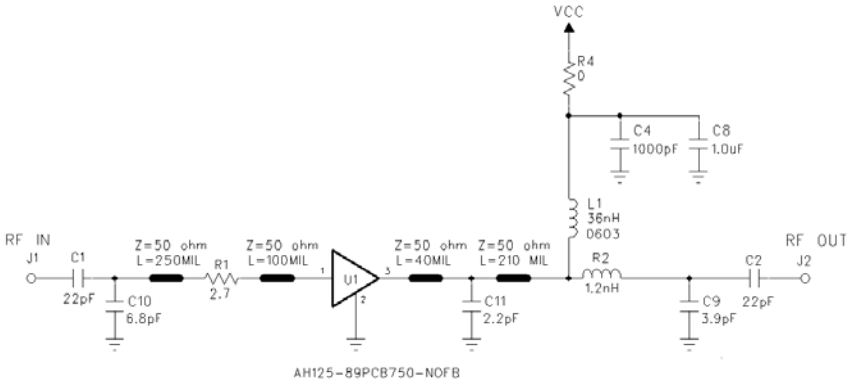
## 700-800 MHz Reference Design

**802.16-2004 O-FDMA, 64QAM-1/2, 1024-FFT, 20 symbols and 30 subchannels, 5 MHz Carrier BW**

### Typical O-FDMA Performance at 25°C

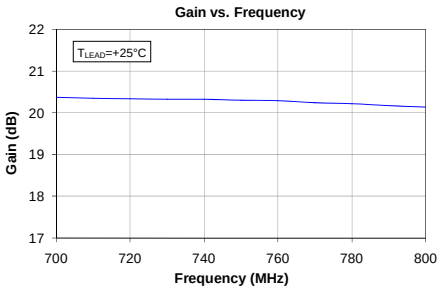
| Frequency | 700 | 750 | 800 | MHz |
|---|---|---|---|---|
| Gain | 20.4 | 20.3 | 20.1 | dB |
| Input Return Loss | 12 | 17 | 25 | dB |
| Output Return Loss | 7.5 | 6.8 | 6.3 | dB |
| EVM<br>Pout=+18 dBm | 0.9 | 0.7 | 0.7 | % |
| ACLR<br>Pout=+18 dBm | -52.6 | -56 | -54.4 | dBc |
| Output P1dB | +28.9 | +29.4 | +29.2 | dBm |
| Output IP3<br>Pout=+18 dBm/tone, 1MHz spacing | +43.7 | +46.2 | +45.5 | dBm |
| Quiescent Current, Icq | 150 | | | mA |
| Vcc | +5 | | | V |

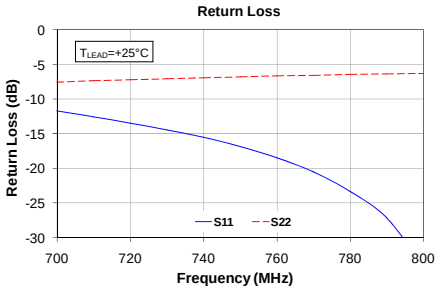


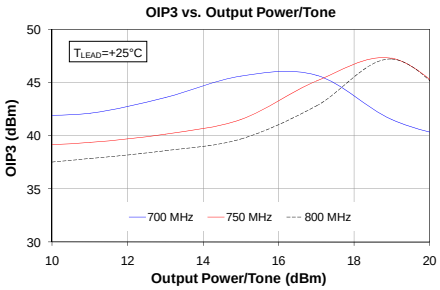



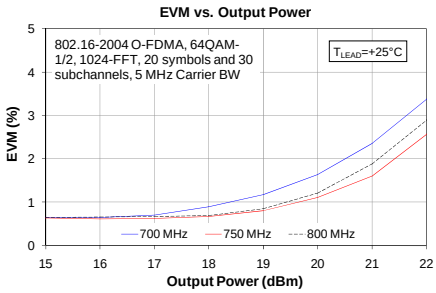

Notes:

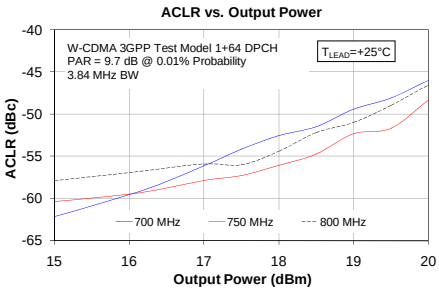
1. The primary RF microstrip line is 50 Ω.
2. Components shown on the silkscreen but not on the schematic are not used.
3. 0 Ω jumpers can be replaced with copper trace in target application.
4. The edge of C11 is placed at 40 mil from AH125 RFout pin. (1.7° @ 750 MHz)
5. The edge of R3 is placed at 210 mil from the edge of C11. (8.7° @ 750 MHz)
6. The edge of C9 is placed next to the edge of R3.
7. The edge of R1 is placed at 100 mil from AH125 RFin pin. (4.2° @ 750 MHz)
8. The edge of C10 is placed 250 mil from the edge of R1. (10.4° @ 750 MHz)



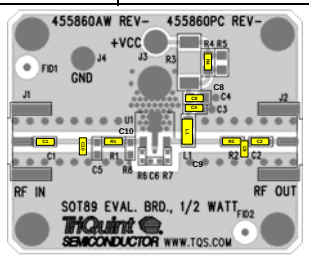

Note: For improved output return loss, ≥10dB, please contact TriQuint applications support for a reference design employing feedback. Corresponding OIP3 performance will be ~+43dBm.

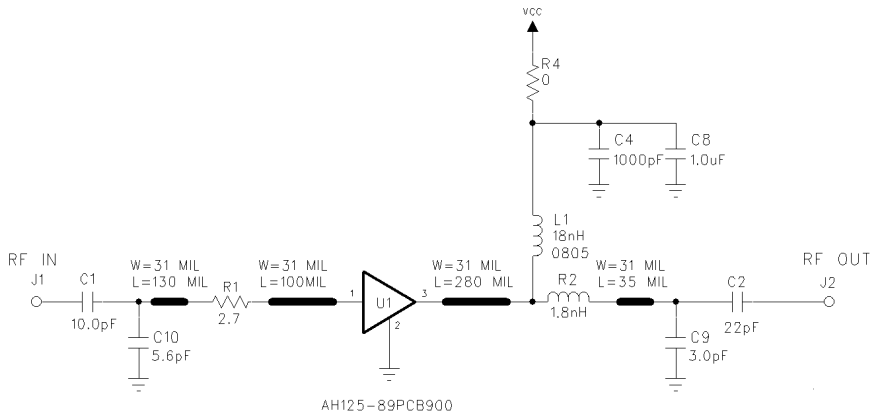
## 869-960 MHz Reference Design (AH125-89PCB900)

**W-CDMA 3GPP Test Model 1+64 DPCH, PAR = 10.3 dB @ 0.01% Probability, 3.84 MHz BW**

### Typical W-CDMA Performance at 25°C

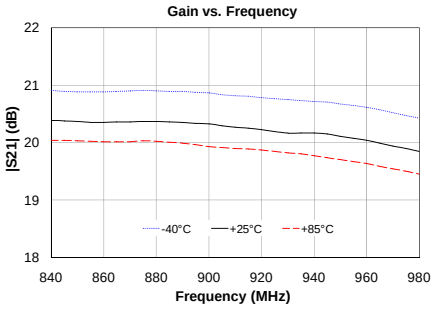
| Frequency | 869 | 920 | 960 | MHz |
|---|---|---|---|---|
| Gain | 20 | 20 | 20 | dB |
| Input Return Loss | 14 | 20 | 22 | dB |
| Output Return Loss | 10 | 9.9 | 9.9 | dB |
| ACLR<br>Pout=+18 dBm | -52 | -52.5 | -52 | dBc |
| Output P1dB | +27.4 | +28.1 | +27.9 | dBm |
| Output IP3<br>Pout=+17dBm/tone, 1MHz spacing | +44 | +47 | +49 | dBm |
| Noise Figure | 7.9 | 7.7 | 7.5 | dB |
| Quiescent Current, Icq | 150 | | | mA |
| Vcc | +5 | | | V |

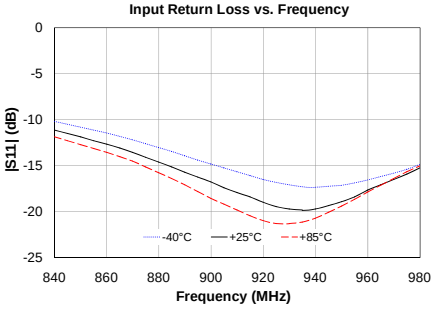


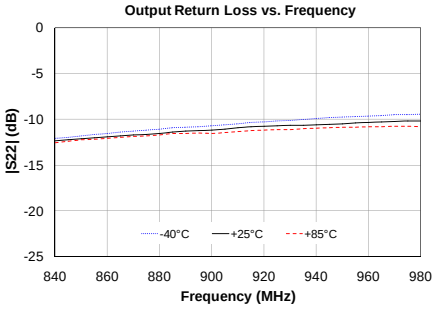



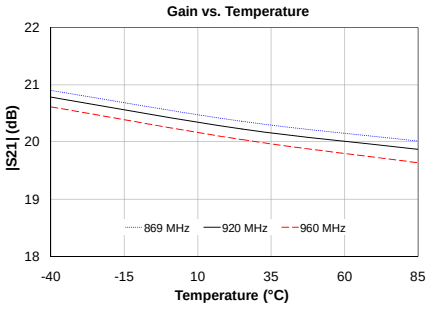

Notes:

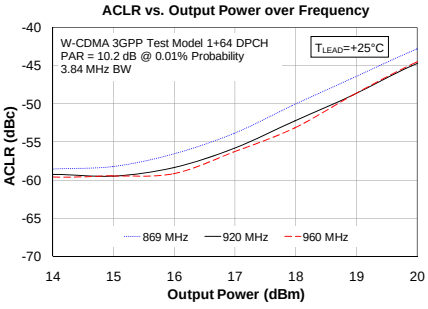
1. The primary RF microstrip line is 50 Ω.
2. Components shown on the silkscreen but not on the schematic are not used.
3. 0 Ω jumpers can be replaced with copper trace in target application.
4. The edge of R2 is placed at 280 mil from AH125 RFout pin. (14.3° @ 920 MHz)
5. The edge of C9 is placed 35 mil from the edge of R2. (1.8° @ 920 MHz)
6. The edge of R1 is placed at 100 mil from AH125 RFin pin. (5.1° @ 920 MHz)
7. The edge of C10 is placed 130 mil from the edge of R1. (6.6° @ 920 MHz)

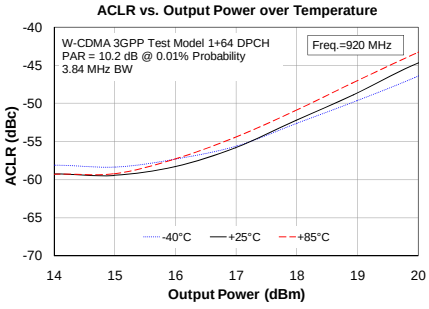


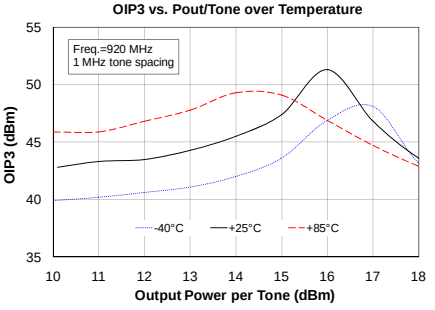



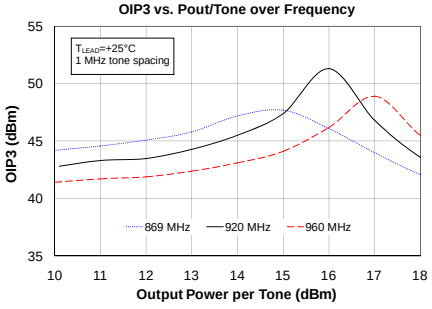



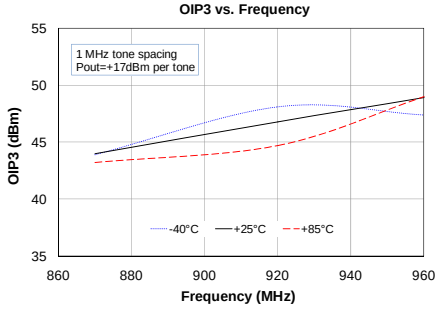



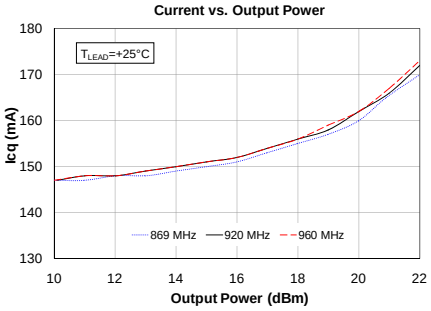



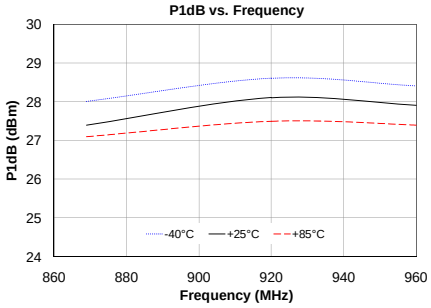



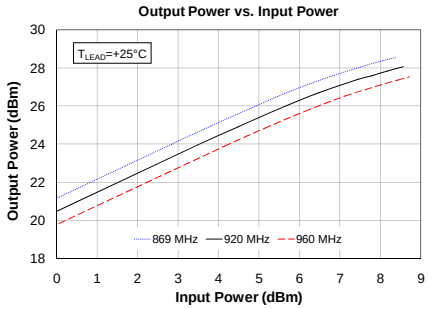



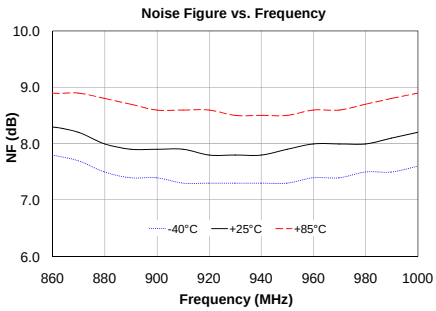
## 869-960 MHz Reference Design (AH125-89PCB900)

**W-CDMA 3GPP Test Model 1+64 DPCH, PAR = 10.3 dB @ 0.01% Probability, 3.84 MHz BW**



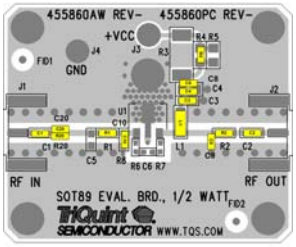



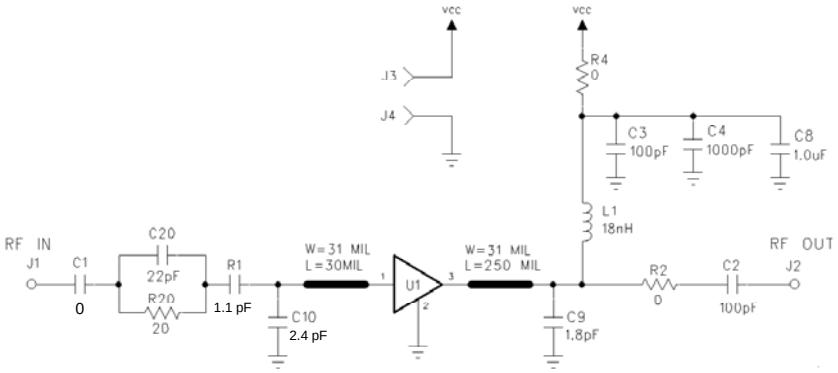
## 1805-1880 MHz Reference Design

**W-CDMA 3GPP Test Model 1+64 DPCH, PAR = 10.2 dB @ 0.01% Probability, 3.84 MHz BW**

### Typical W-CDMA Performance at 25°C

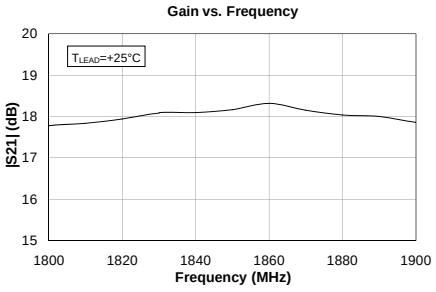
| Frequency | 1805 | 1842 | 1880 | MHz |
|---|---|---|---|---|
| Gain | 17.8 | 18.2 | 18.1 | dB |
| Input Return Loss | 9.5 | 16.5 | 17.0 | dB |
| Output Return Loss | 9.4 | 8.4 | 7.8 | dB |
| ACLR<br>Pout=+18 dBm | -51 | -51 | -49 | dBc |
| Output P1dB | +28 | +27.9 | +27.8 | dBm |
| Output IP3<br>Pout=+14dBm/tone, 1MHz spacing | +44 | +45 | +43.5 | dBm |
| Quiescent Current, Icq | 150 | | | mA |
| Vcc | +5 | | | V |

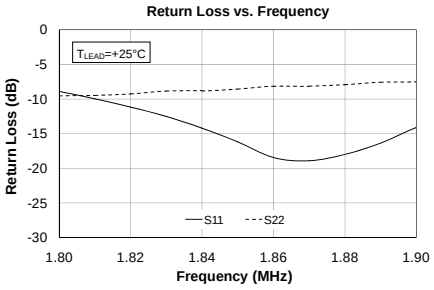


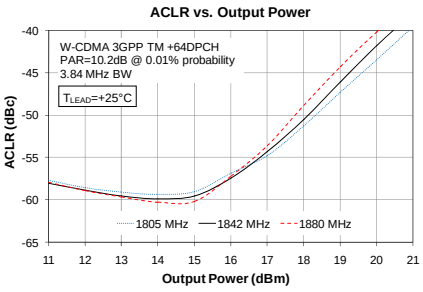



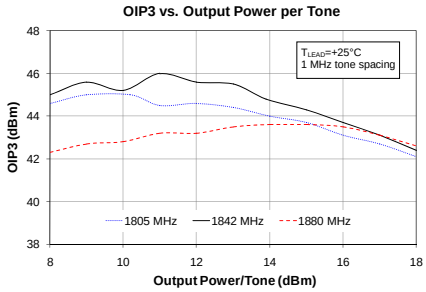

Notes:

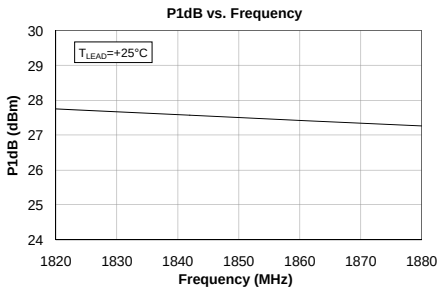
1. The primary RF microstrip line is 50 Ω.
2. Components shown on the silkscreen but not on the schematic are not used.
3. 0 Ω jumpers can be replaced with copper trace in target application.
4. The edge of C9 is placed at 250 mil from AH125 RFout pin. (25.5 ° @ 1845 MHz)
5. The edge of R1 is placed against the edge of C10.
6. The edge of C10 is placed at 30 mil from AH125 RFin pin. (3.1 ° @ 1845 MHz)



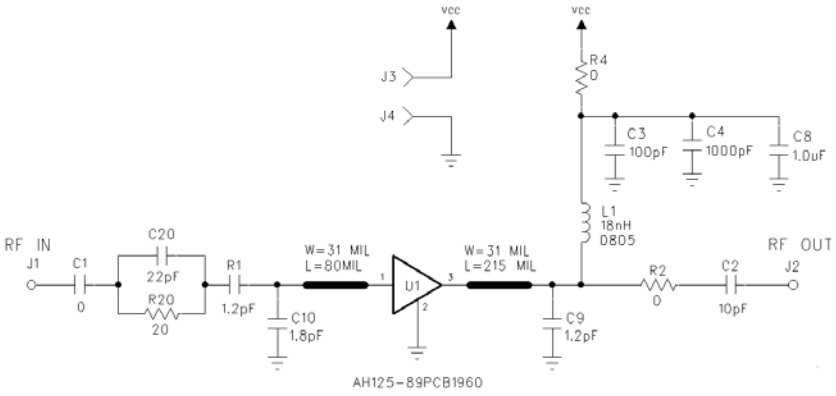



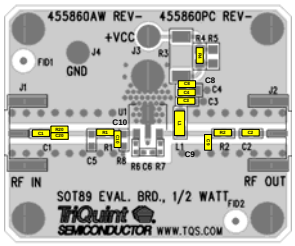
## 1930-1990 MHz Reference Design (AH125-89PCB1960)

**W-CDMA 3GPP Test Model 1+64 DPCH, PAR = 10.3 dB @ 0.01% Probability, 3.84 MHz BW**

### Typical W-CDMA Performance at 25°C

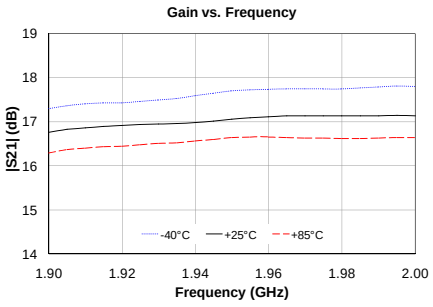
| Frequency | 1930 | 1960 | 1990 | MHz |
|---|---|---|---|---|
| Gain | 17 | 17 | 17 | dB |
| Input Return Loss | 12 | 16 | 23 | dB |
| Output Return Loss | 10 | 9 | 8 | dB |
| ACLR<br>Pout=+18 dBm | -53 | -53 | -53 | dBc |
| Output P1dB | +27.8 | +27.8 | +27.7 | dBm |
| Output IP3<br>Pout=+14dBm/tone, 1MHz spacing | +45 | +47 | +47 | dBm |
| Noise Figure | 4.5 | 4.6 | 4.6 | dB |
| Quiescent Current, Icq | 150 | | | mA |
| Vcc | +5 | | | V |

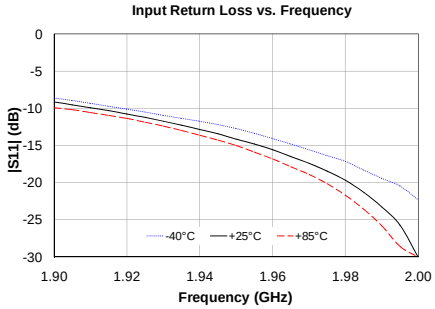


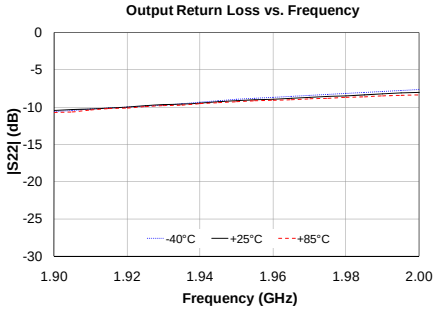



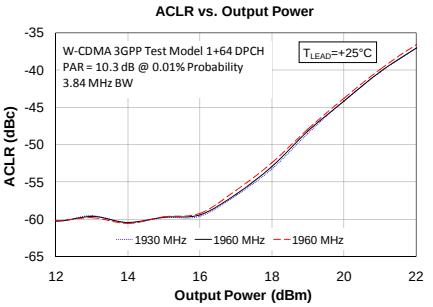

Notes:

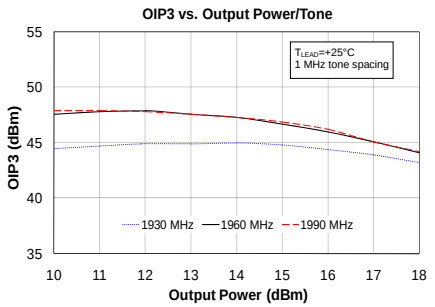
1. The primary RF microstrip line is 50 Ω.
2. Components shown on the silkscreen but not on the schematic are not used.
3. 0 Ω jumpers can be replaced with copper trace in target application.
4. The edge of C9 is placed at 215 mil from AH125 RFout pin. (23.3 ° @ 1960 MHz)
5. The edge of R1 is placed against the edge of C10.
6. The edge of C10 is placed at 80 mil from AH125 RFin pin. (8.7 ° @ 1960 MHz)

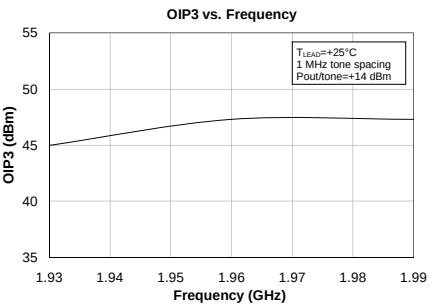


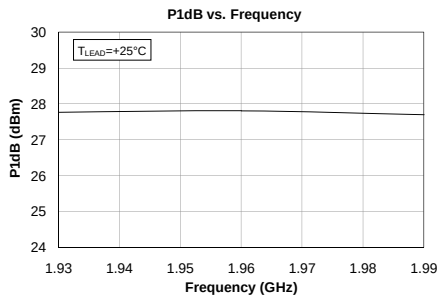



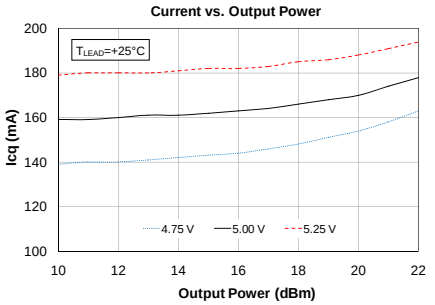



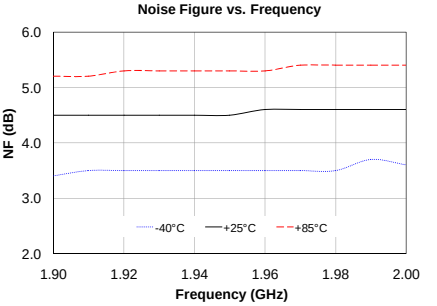



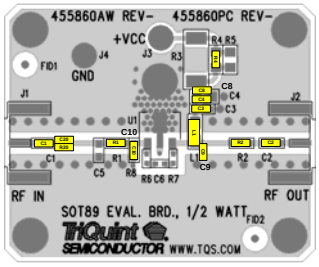



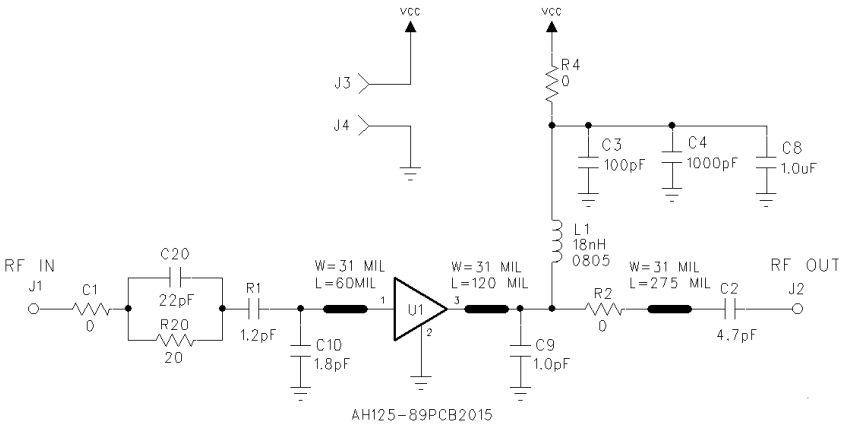
## 2010-2025 MHz Reference Design

**TD-SCDMA 3 Carrier, PAR = 10 dB @ 0.01% Probability, 1.28 MHz BW**

### Typical TD-SCDMA Performance at 25°C

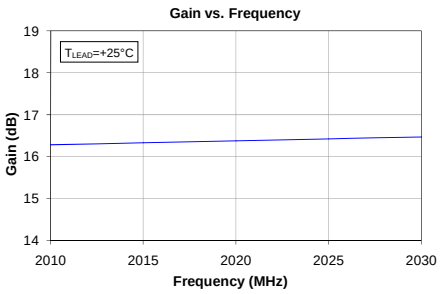
| Frequency | 2010 | 2015 | 2025 | MHz |
|---|---|---|---|---|
| Gain | 16.3 | 16.3 | 16.4 | dB |
| Input Return Loss | 12.6 | 13.1 | 14.4 | dB |
| Output Return Loss | 8.2 | 8.1 | 7.9 | dB |
| ACLR<br>Pout=+16 dBm | -49.5 | -50 | -50.1 | dBc |
| Output P1dB | +28 | +28.3 | +28 | dBm |
| Output IP3<br>Pout=+10 dBm/tone, 1MHz spacing | +45 | +45 | +45 | dBm |
| Quiescent Current, Icq | 150 | | | mA |
| Vcc | +5 | | | V |

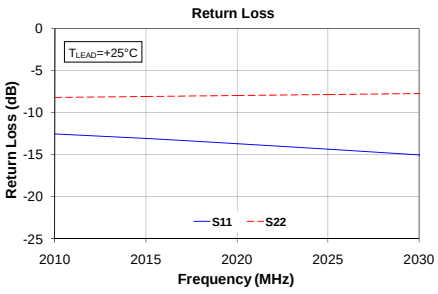


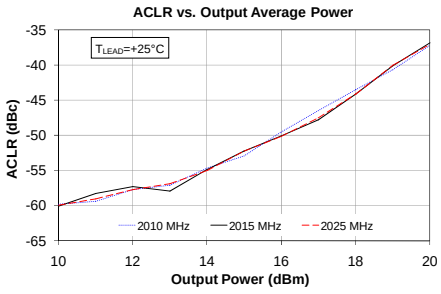



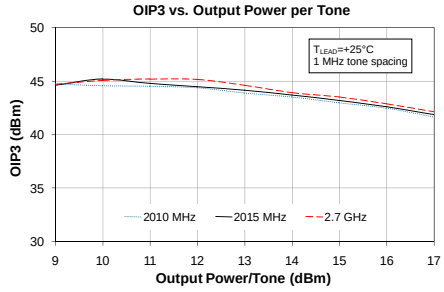

Notes:

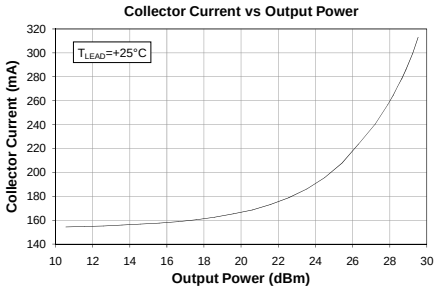
1. The primary RF microstrip line is 50 Ω.
2. Components shown on the silkscreen but not on the schematic are not used.
3. 0 Ω jumpers can be replaced with copper trace in target application.
4. The edge of C9 is placed at 120 mil from AH125 RFout pin. (13.4° @ 2015 MHz)
5. The edge of C2 is placed 275 mil from the edge of C9. (30.7° @ 2015 MHz)
6. The edge of C10 is placed at 60 mil from AH125 RFin pin. (6.7° @ 2015 MHz)
7. The edge of R1 is placed next to the edge of C10.

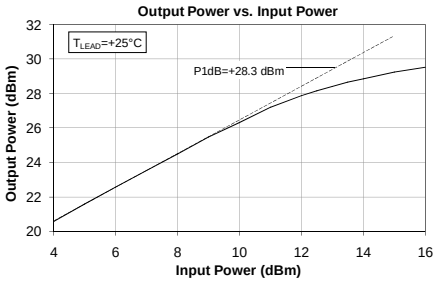


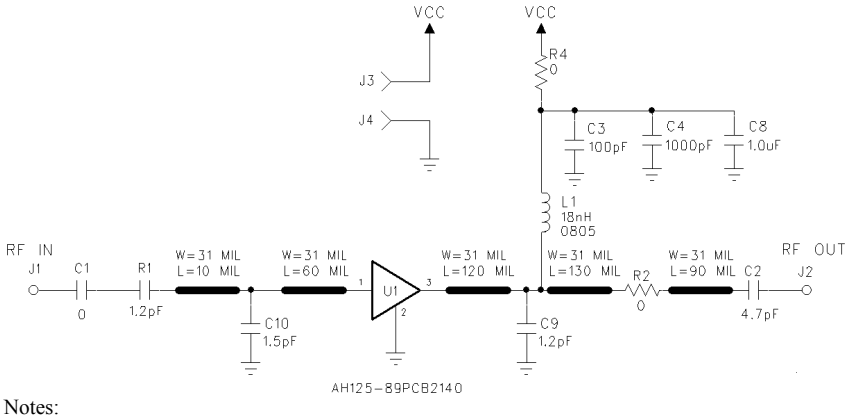



## 2110-2170 MHz Reference Design (AH125-89PCB2140)

**W-CDMA 3GPP Test Model 1+64 DPCH, PAR = 10.3 dB @ 0.01% Probability, 3.84 MHz BW**

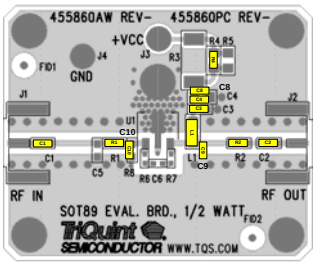
### Typical W-CDMA Performance at 25°C

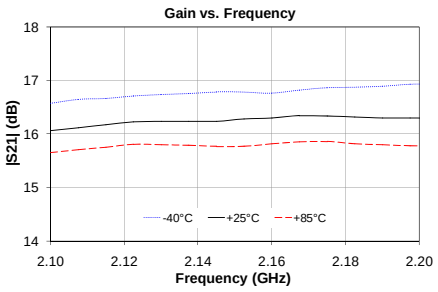
| Frequency | 2110 | 2140 | 2170 | MHz |
|---|---|---|---|---|
| Gain | 16.1 | 16.2 | 16.3 | dB |
| Input Return Loss | 10 | 12 | 15 | dB |
| Output Return Loss | 13 | 12 | 11 | dB |
| ACLR<br>Pout=+18 dBm | -52 | -52 | -52 | dBc |
| Output P1dB | +28 | +28 | +28 | dBm |
| Output IP3<br>Pout=+12 dBm/tone, 1MHz spacing | +49 | +45 | +47 | dBm |
| Noise Figure | 4.3 | 4.4 | 4.4 | dB |
| Quiescent Current, Icq | 150 | | | mA |
| Vcc | +5 | | | V |

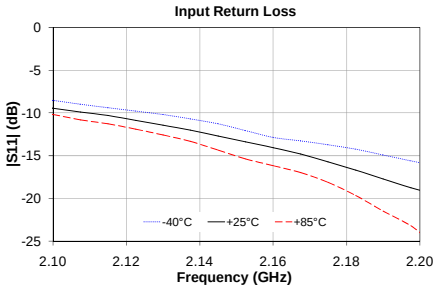


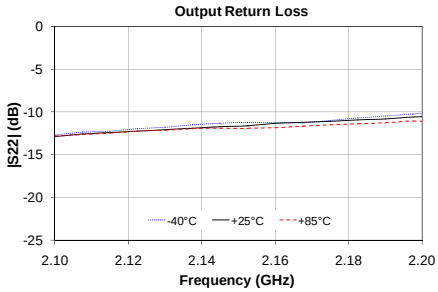

Notes:

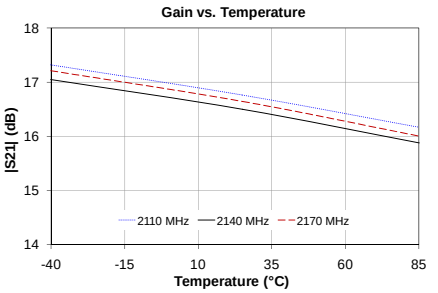
1. The primary RF microstrip line is 50 Ω.
2. Components shown on the silkscreen but not on the schematic are not used.
3. 0 Ω jumpers can be replaced with copper trace in target application.
4. The edge of C9 is placed at 120 mils from AH125 RFout pin. (14.2 ° @ 2140 MHz)
5. The edge of C2 is placed at 280 mils from the edge of C9. (33.2 ° @ 2140 MHz)
6. The edge of C10 is placed at 60 mils from AH125 RFin pin. (7.1 ° @ 2140 MHz)
7. The edge of R1 is placed 10 mils from the edge of C10. (1.2 ° @ 2140 MHz)

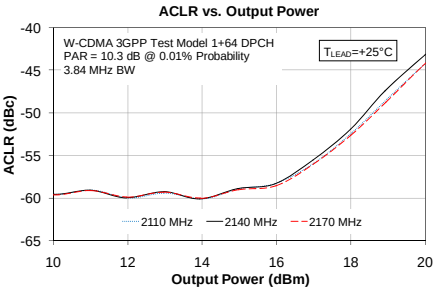


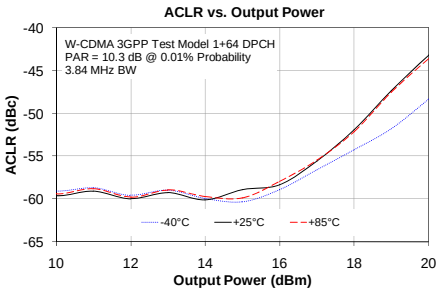



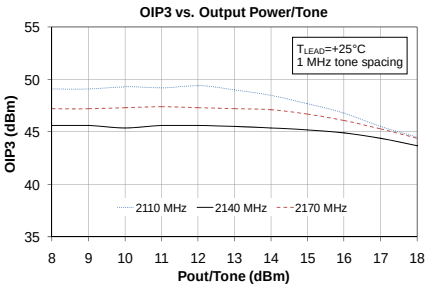



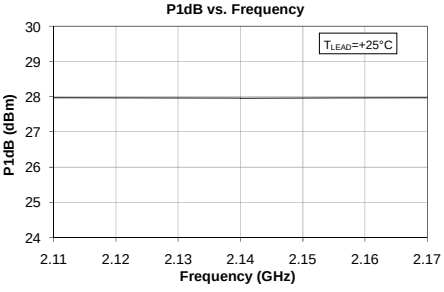



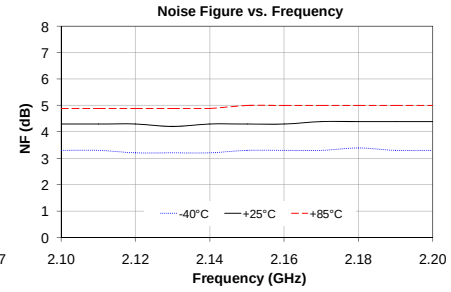



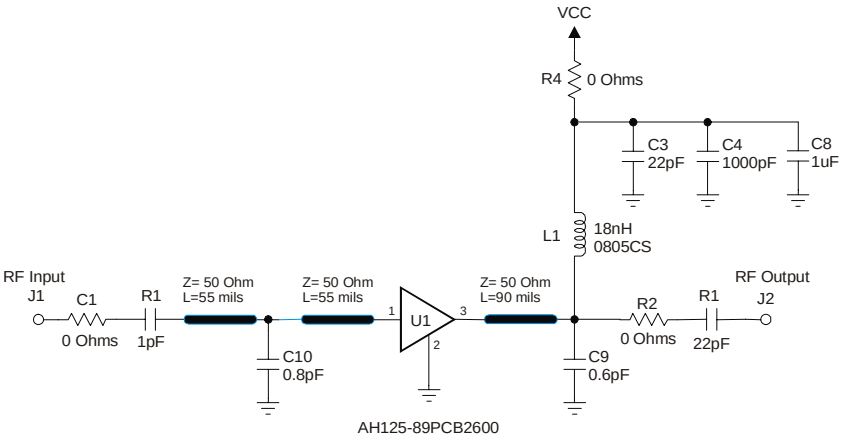



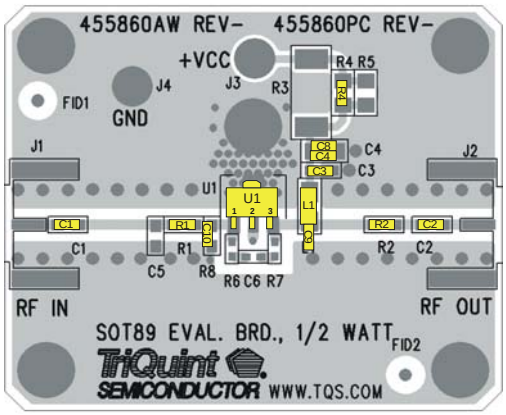
## 2.5-2.7 GHz Reference Design

**802.16-2004 O-FDMA, 64QAM-1/2, 1024-FFT, 20 symbols and 30 subchannels, 5 MHz Carrier BW**

### Typical Performance at 25°C

| Frequency (GHz) | 2.5 | 2.6 | 2.7 | Units |
|---|---|---|---|---|
| Gain | 13.9 | 14.0 | 13.7 | dB |
| Input Return Loss | 9.5 | 13.1 | 12.9 | dB |
| Output Return Loss | 9.4 | 8.7 | 8.2 | dB |
| EVM<br>Pout=+19 dBm | 1.5 | 1.25 | 1.3 | % |
| Output P1dB | +28 | +28 | +28 | dBm |
| Output IP3<br>Pout=+16 dBm/tone, 1MHz spacing | +49 | +48 | +47 | dBm |
| Quiescent Current, Icq | 150 | | | mA |
| Vcc | +5 | | | V |

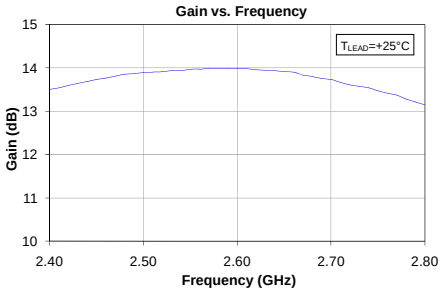


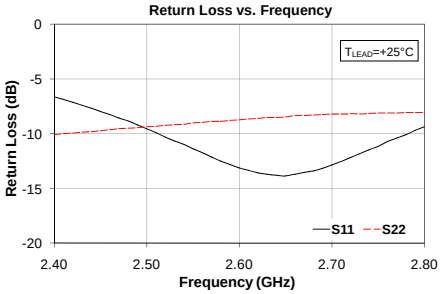



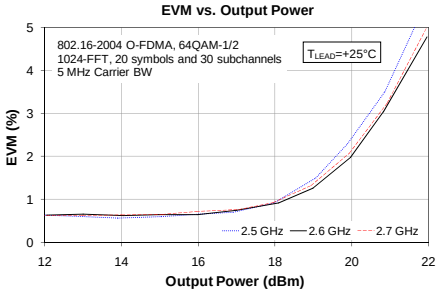

Circuit Board Material: 0.014" FR4, single layer, 1 oz copper, $\varepsilon_r$ = 4.3,
Microstrip line details: width = .031", spacing = .035"

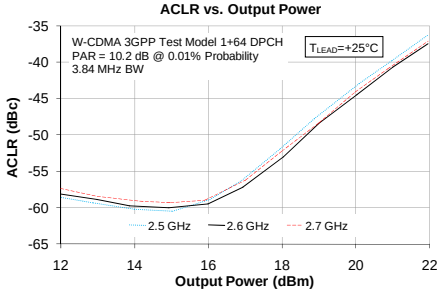
Notes:

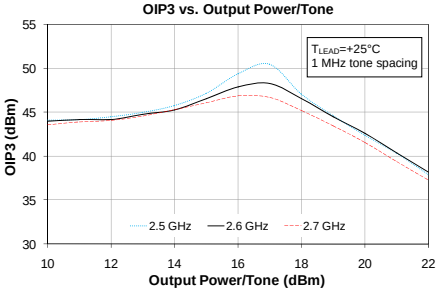
9. The primary RF microstrip line is 50 Ω.
10. Components shown on the silkscreen but not on the schematic are not used.
11. 0 Ω jumpers can be replaced with copper trace in target application.
12. Distance from side edge of C10 to side edge of U1 pin 1 is 55 mils (7.9°@2600 MHz).
13. Distance from end edge of R1 to side edge of U1 pin 1 is 110 mils (15.8°@2600 MHz)..
14. Distance from side edge of C9 to side edge of U1 pin 3 is 90 mils (13.0°@2600 MHz)..



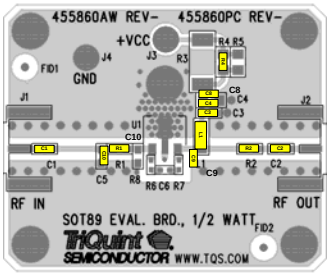



## 3.4-3.6 GHz Reference Design

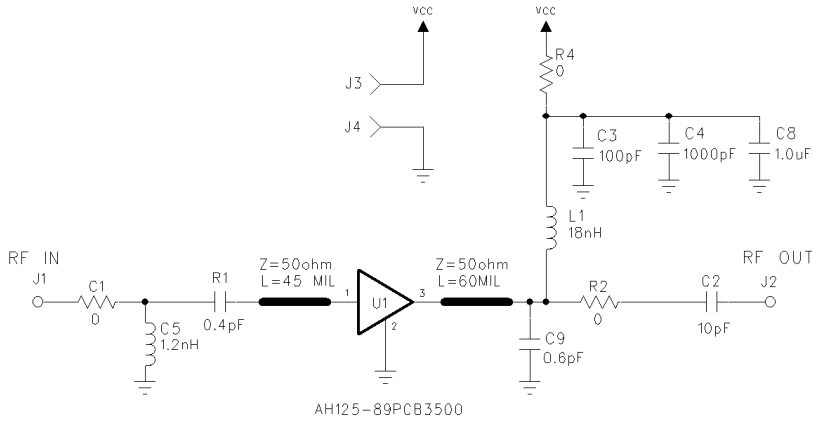
**802.16-2004 O-FDMA, 64QAM-1/2, 1024-FFT, 20 symbols and 30 subchannels, 5 MHz Carrier BW**

### Typical O-FDMA Performance at 25°C

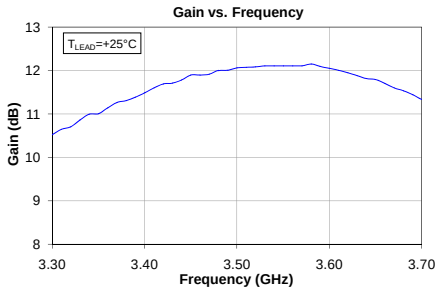
| Frequency | 3.4 | 3.5 | 3.6 | GHz |
|---|---|---|---|---|
| Gain | 11.5 | 12.1 | 12 | dB |
| Input Return Loss | 8 | 15 | 21 | dB |
| Output Return Loss | 16 | 13 | 11 | dB |
| EVM<br>Pout=+18 dBm | 1.1 | 1.0 | 1.1 | % |
| Output P1dB | +27 | +27.3 | +27.5 | dBm |
| Output IP3<br>Pout=+16 dBm/tone, 1MHz spacing | +49.5 | +45.7 | 45.2 | dBm |
| Quiescent Current, Icq | 150 | | | mA |
| Vcc | +5 | | | V |

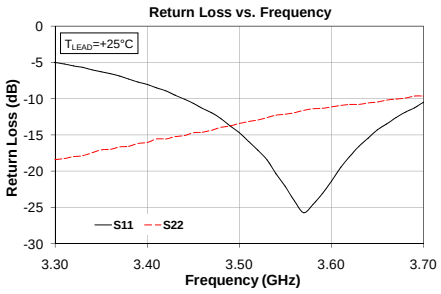


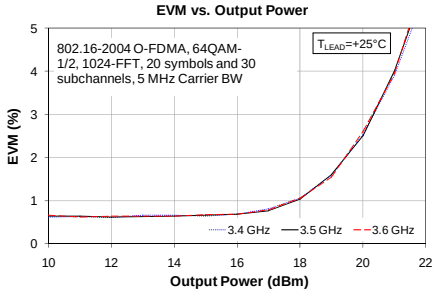

Circuit Board Material: 0.014" FR4, single layer, 1 oz copper, $\varepsilon_r$ = 4.3,
Microstrip line details: width = .031", spacing = .035"

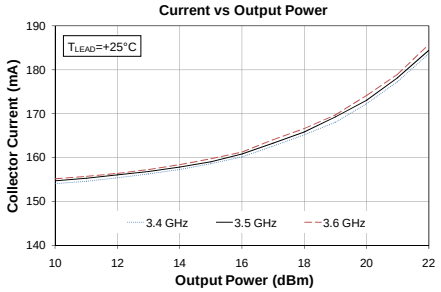


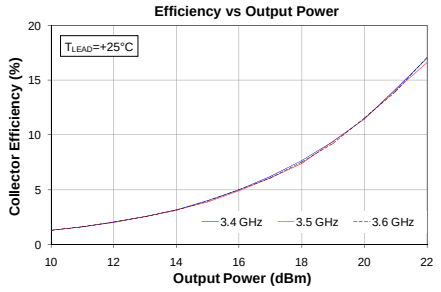

Notes:
1. The primary RF microstrip line is 50 Ω.
2. Components shown on the silkscreen but not on the schematic are not used.
3. 0 Ω jumpers can be replaced with copper trace in target application.
4. The edge of C9 is placed at 60 mil from AH125 RFout pin. (11.6° @ 3.5 GHz)
5. The edge of C10 is placed at 45 mil from AH125 RFin pin. (8.7° @ 3.5 GHz)
6. The edge of L2 is placed next to the edge of C10.

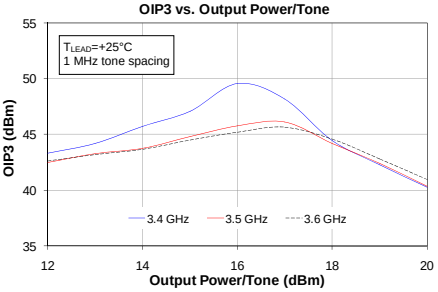


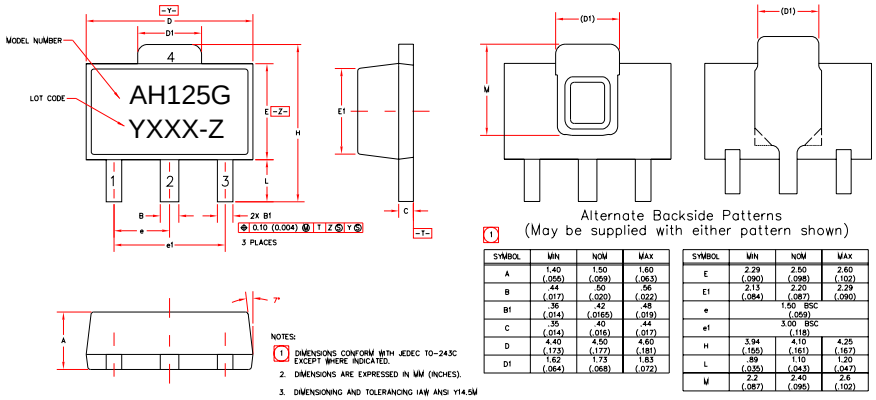




Note: This reference design was constructed on FR4 to illustrate potential AH125 performance in the 3.4-3.6 GHz frequency range. For customer applications of AH125 at these frequencies, we recommend the use of more suitable materials such as Rogers 3000 series.

## Mechanical Information

This package is lead-free/Green/RoHS-compliant. It is compatible with both lead-free (maximum 260 °C reflow temperature) and leaded (maximum 245 °C reflow temperature) soldering processes. The plating material on the leads is NiPdAu.

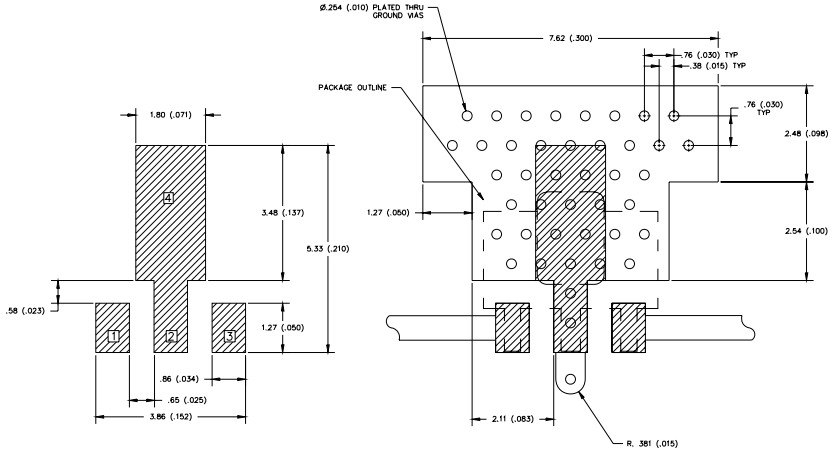
### Outline Drawing




| SYMBOL | MIN | NOM | MAX |
|---|---|---|---|
| A | 1.40 (.055) | 1.50 (.059) | 1.60 (.063) |
| B | .44 (.017) | .50 (.020) | .56 (.022) |
| B1 | .36 (.014) | .42 (.0165) | .48 (.019) |
| C | .35 (.014) | .40 (.016) | .44 (.017) |
| D | 4.40 (.173) | 4.50 (.177) | 4.60 (.181) |
| D1 | 1.62 (.064) | 1.73 (.068) | 1.83 (.072) |

| SYMBOL | MIN | NOM | MAX |
|---|---|---|---|
| E | 2.29 (.090) | 2.50 (.098) | 2.60 (.102) |
| E1 | 2.13 (.084) | 2.20 (.087) | 2.29 (.090) |
| e | 1.50 BSC (.059) | | |
| e1 | 3.00 BSC (.118) | | |
| H | 3.94 (.155) | 4.10 (.161) | 4.25 (.167) |
| L | .89 (.035) | 1.10 (.043) | 1.20 (.047) |
| M | 2.2 (.087) | 2.40 (.095) | 2.6 (.102) |

### Land Pattern




## Product Marking

The AH125 will be marked with an "AH125G" designator with a lot code marked below the part designator. The "Y" represents the last digit of the year the part was manufactured, the "XXX" is an auto-generated number, and "Z" refers to a wafer number in a batch.

## MSL / ESD Rating

**Caution!** ESD sensitive device.

| | |
|---|---|
| ESD Rating: | Class 2 |
| Value: | Passes ≥2000V to <4000V |
| Test: | Human Body Model (HBM) |
| Standard: | JEDEC Standard JESD22-A114 |

| | |
|---|---|
| ESD Rating: | Class IV |
| Value: | Passes ≥ 2000V min. |
| Test: | Charged Device Model (CDM) |
| Standard: | JEDEC Standard JESD22-C101 |

| | |
|---|---|
| MSL Rating: | Level 3 at +260 °C convection reflow |
| Standard: | JEDEC Standard J-STD-020 |

## Mounting Config. Notes

1. Ground / thermal vias are critical for the proper performance of this device. Vias should use a .35mm (#80 / .0135") diameter drill and have a final plated thru diameter of .25 mm (.010").
2. Add as much copper as possible to inner and outer layers near the part to ensure optimal thermal performance.
3. Mounting screws can be added near the part to fasten the board to a heatsink. Ensure that the ground / thermal via region contacts the heatsink.
4. Do not put solder mask on the backside of the PC board in the region where the board contacts the heatsink.
5. RF trace width depends upon the PC board material and construction.
6. Use 1 oz. Copper minimum.
7. All dimensions are in millimeters (inches). Angles are in degrees.