# HMC587* PRODUCT PAGE QUICK LINKS

**Last Content Update: 02/23/2017**

## COMPARABLE PARTS

View a parametric search of comparable parts.

## EVALUATION KITS

- HMC587LC4B Evaluation Board.

## DOCUMENTATION

**Data Sheet**

- HMC587 Data Sheet

## REFERENCE MATERIALS

**Quality Documentation**

- Package/Assembly Qualification Test Report: LC4, LC4B (QTR: 2014-00380 REV: 01)
- Semiconductor Qualification Test Report: GaAs HBT-A (QTR: 2013-00228)

**Technical Articles**

- SMT Wideband MMIC VCOs Tune from 4 to 12.5 GHz

## DESIGN RESOURCES

- HMC587 Material Declaration
- PCN-PDN Information
- Quality And Reliability
- Symbols and Footprints

## DISCUSSIONS

View all HMC587 EngineerZone Discussions.

## SAMPLE AND BUY

Visit the product page to see pricing options.

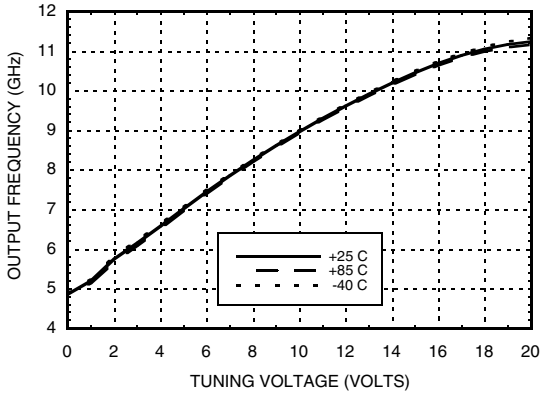
## TECHNICAL SUPPORT

Submit a technical question or find your regional support number.

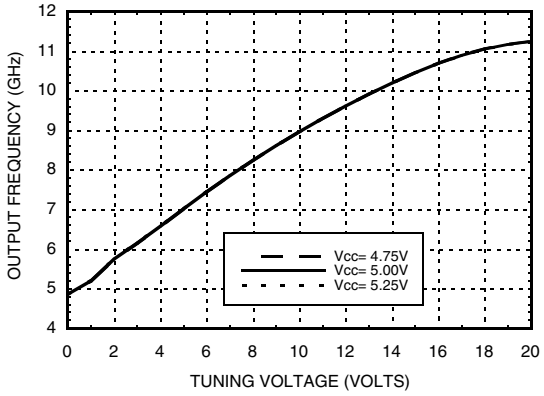
## DOCUMENT FEEDBACK

Submit feedback for this data sheet.

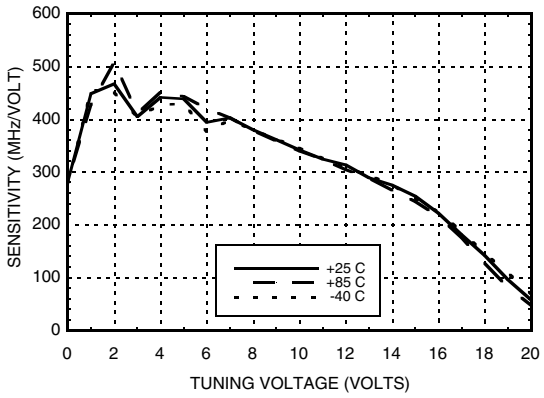
### Frequency vs. Tuning Voltage, Vcc = +5V



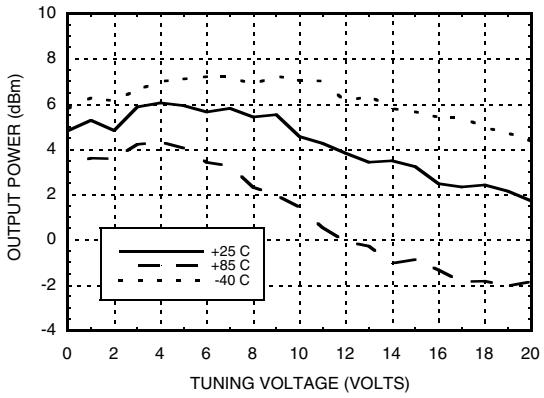

### Frequency vs. Tuning Voltage, T= 25°C



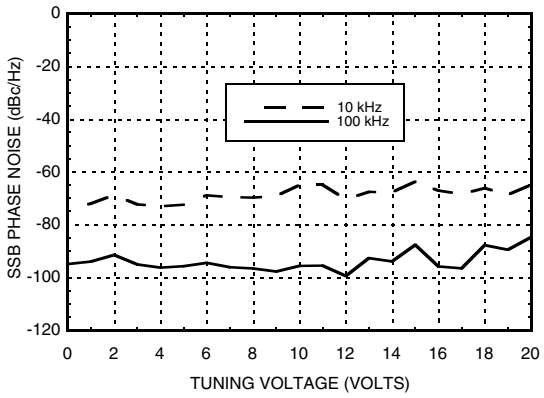

### Sensitivity vs. Tuning Voltage, Vcc= +5V



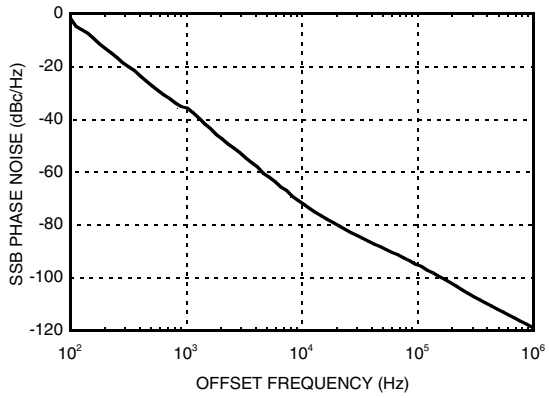

### Output Power vs. Tuning Voltage, Vcc= +5V




### SSB Phase Noise vs. Tuning Voltage




### Typical SSB Phase Noise @ Vtune= +5V





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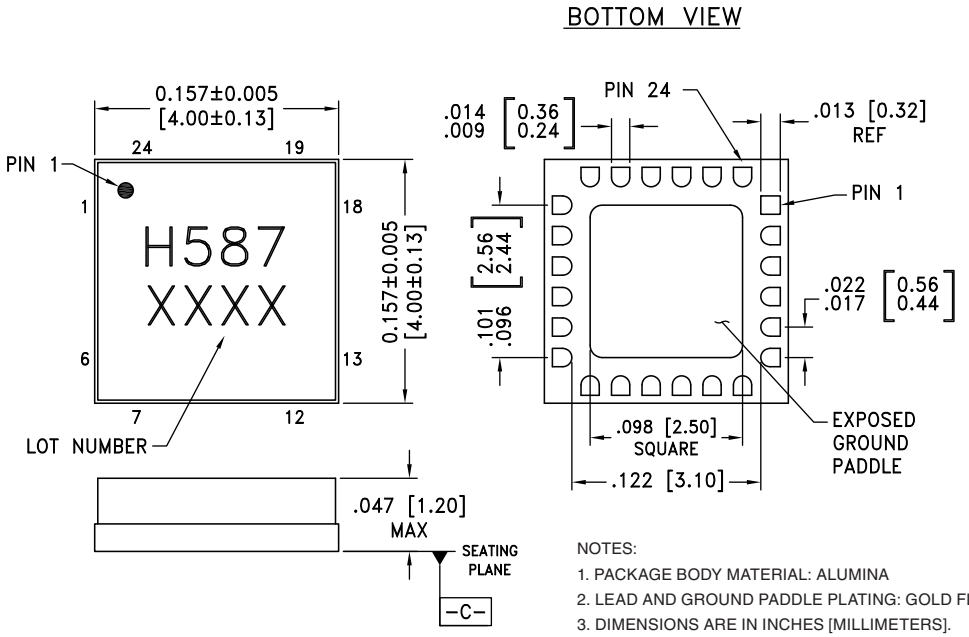
*Application Support: Phone: 1-800-ANALOG-D*

## Absolute Maximum Ratings

| | |
|---|---|
| Vcc | +5.5 Vdc |
| Vtune | 0 to +22V |
| Junction Temperature | 135 °C |
| Continuous Pdiss (T = 85°C) (derate 12.5 mW/°C above 85°C) | 625 mW |
| Thermal Resistance (junction to ground paddle) | 80 °C/W |
| Storage Temperature | -65 to +150 °C |
| Operating Temperature | -40 to +85 °C |

ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

## Outline Drawing




NOTES:

1. PACKAGE BODY MATERIAL: ALUMINA
2. LEAD AND GROUND PADDLE PLATING: GOLD FLASH OVER Ni.
3. DIMENSIONS ARE IN INCHES [MILLIMETERS].
4. LEAD SPACING TOLERANCE IS NON-CUMULATIVE.
5. PACKAGE WARP SHALL NOT EXCEED 0.05mm DATUM -C-
6. ALL GROUND LEADS AND GROUND PADDLE MUST BE SOLDERED TO PCB RF GROUND.

## Package Information

| Part Number | Package Body Material | Lead Finish | MSL Rating | Package Marking [2] |
|---|---|---|---|---|
| HMC587LC4B | Alumina, White | Gold over Nickel | MSL3 [1] | H587<br>XXXX |

[1] Max peak reflow temperature of 260 °C
[2] 4-Digit lot number XXXX



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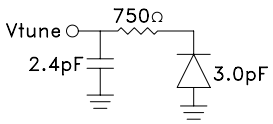
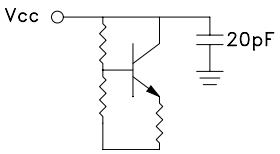
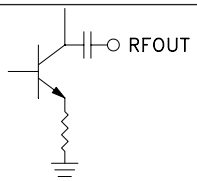
## Pin Descriptions

| Pin Number | Function | Description | Interface Schematic |
|---|---|---|---|
| 1 - 3, 5 - 11, 13, 17 - 24 | N/C | No Connection. These pins may be connected to RF/DC ground. Performance will not be affected. | |
| 4 | Vtune | Control Voltage and Modulation Input. Modulation bandwidth dependent on drive source impedance. See "Determining the FM Bandwidth of a Wideband Varactor Tuned VCO" application note. |   |
| 12 | Vcc | Supply Voltage Vcc= +5V |   |
| 14, 16 | GND | Package bottom has an exposed metal paddle that must also be RF & DC grounded. |   |
| 15 | RFOUT | RF output (AC coupled) |   |





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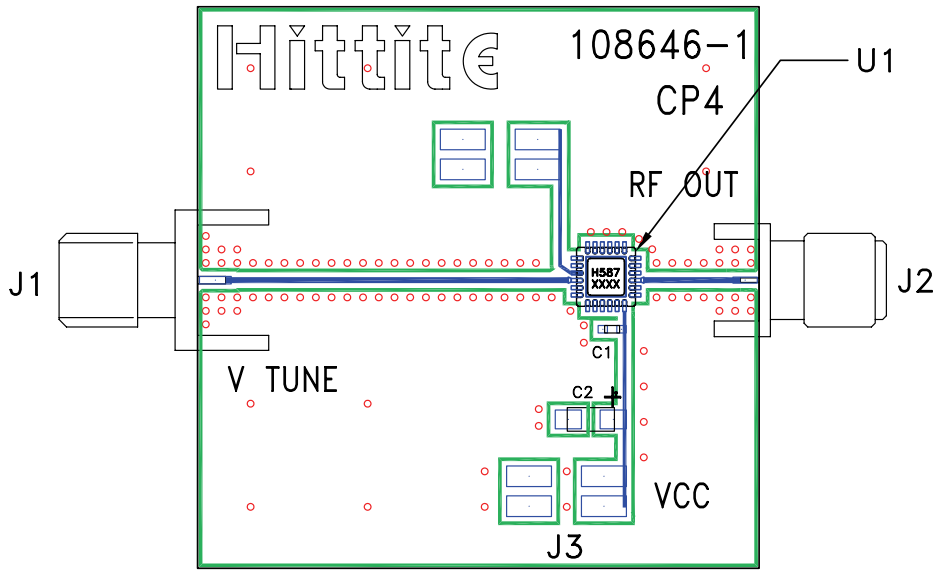
## Evaluation PCB




## List of Materials for Evaluation PCB 108648 [1]

| Item | Description |
|---|---|
| J1 | PCB Mount SMA RF Connector, Johnson |
| J2 | PCB Mount SMA Connector, SRI |
| J3 | DC Header |
| C1 | 1000 pF Capacitor, 0402 Pkg. |
| C2 | 4.7 µF Capacitor, Tantalum |
| U1 | HMC587LC4B VCO |
| PCB [2] | 108646 Eval Board |

[1] Reference this number when ordering complete evaluation PCB

[2] Circuit Board Material: Rogers 4350

The circuit board used in the application should use RF circuit design techniques. Signal lines should have 50 Ohm impedance while the package ground leads and exposed ground paddle should be connected directly to the ground plane similar to that shown. A sufficient number of via holes should be used to connect the top and bottom ground planes. The evaluation circuit board shown is available from Hittite upon request.



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