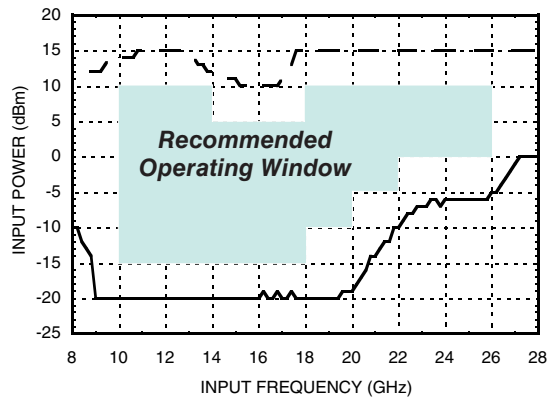


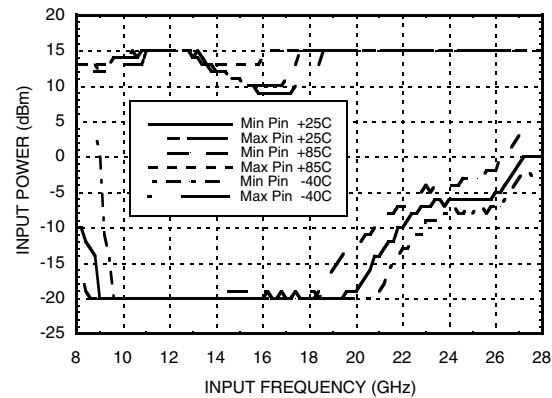


**SMT GaAs HBT MMIC
DIVIDE-BY-4, 10 - 26 GHz**

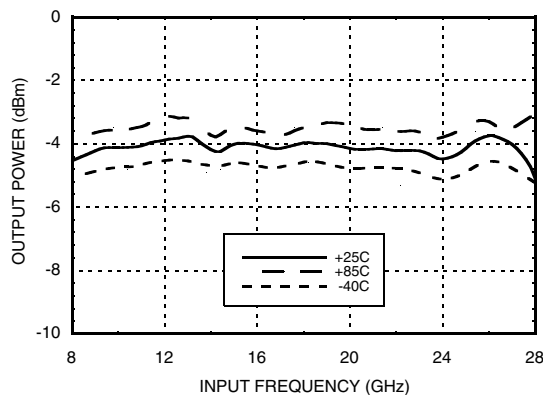
Input Sensitivity Window, $T = 25\text{ }^{\circ}\text{C}$



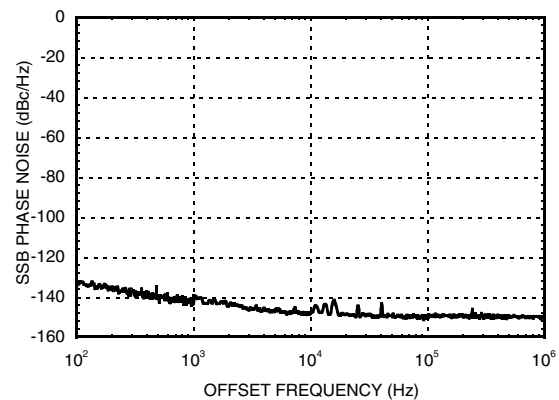
Input Sensitivity Window vs. Temperature



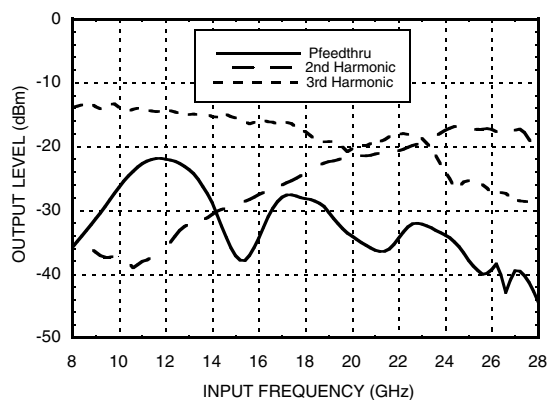
Output Power vs. Temperature



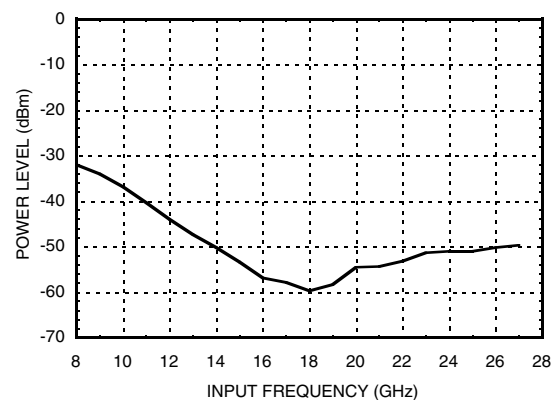
**SSB Phase Noise Performance,
 $P_{in} = 0\text{ dBm}$, $F_{in} = 22\text{ GHz}$, $T = 25\text{ }^{\circ}\text{C}$**



**Output Harmonic Content,
 $P_{in} = 0\text{ dBm}$, $T = 25\text{ }^{\circ}\text{C}$**

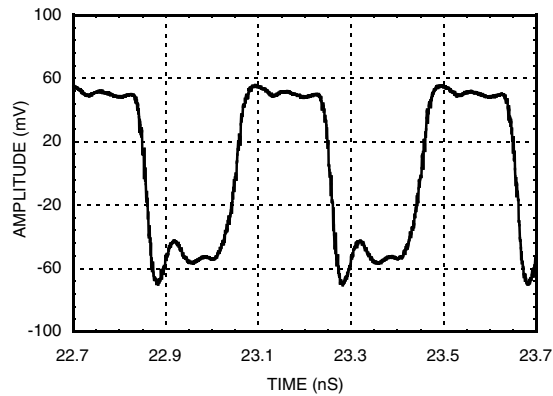


**Reverse Leakage, $P_{in} = 0\text{ dBm}$, $T = 25\text{ }^{\circ}\text{C}$
Output Port Terminated**




**SMT GaAs HBT MMIC
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Output Voltage Waveform,
 $P_{in} = 0$ dBm, $F_{out} = 2.5$ GHz, $T = 25$ °C



**ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS**

Absolute Maximum Ratings

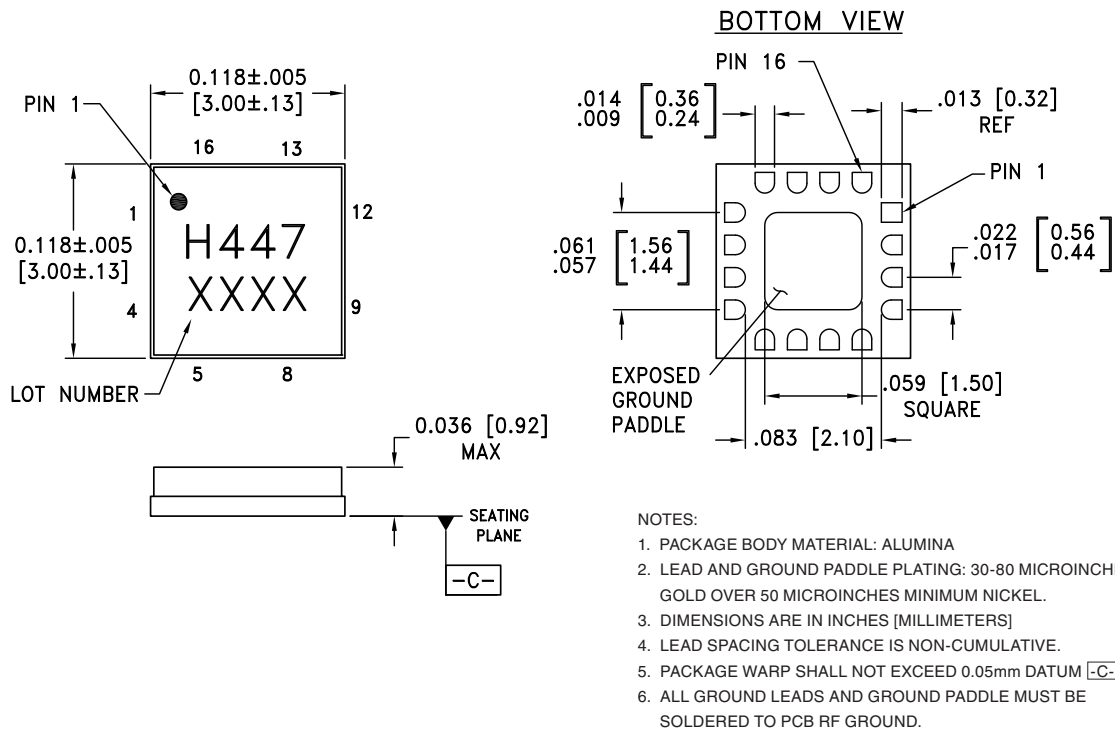
RF Input ($V_{cc} = +5V$)	+13 dBm
Supply Voltage (V_{cc1}, V_{cc2})	+5.5V
Junction Temperature (T_j)	135 °C
Continuous P_{diss} ($T = 85$ °C) (derate 11.9 mW/°C above 85 °C)	595 mW
Thermal Resistance (R_{TH}) (junction to ground paddle)	84 °C/W
Storage Temperature	-65 to +150 °C
Operating Temperature	-40 to +85 °C
ESD Sensitivity (HBM)	Class 1A

Typical Supply Current vs. V_{cc}

V_{cc1}, V_{cc2} (V)	I_{cc} (mA)
4.75	84
5.0	96
5.25	108

Note: Divider will operate over full voltage range shown above

Outline Drawing



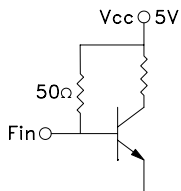
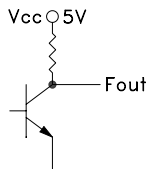

Package Information

Part Number	Package Body Material	Lead Finish	MSL Rating	Package Marking ^[2]
HMC447LC3	Alumina, White	Gold over Nickel	MSL3 ^[1]	H447 XXXX

[1] Max peak reflow temperature of 260 °C

[2] 4-Digit lot number XXXX

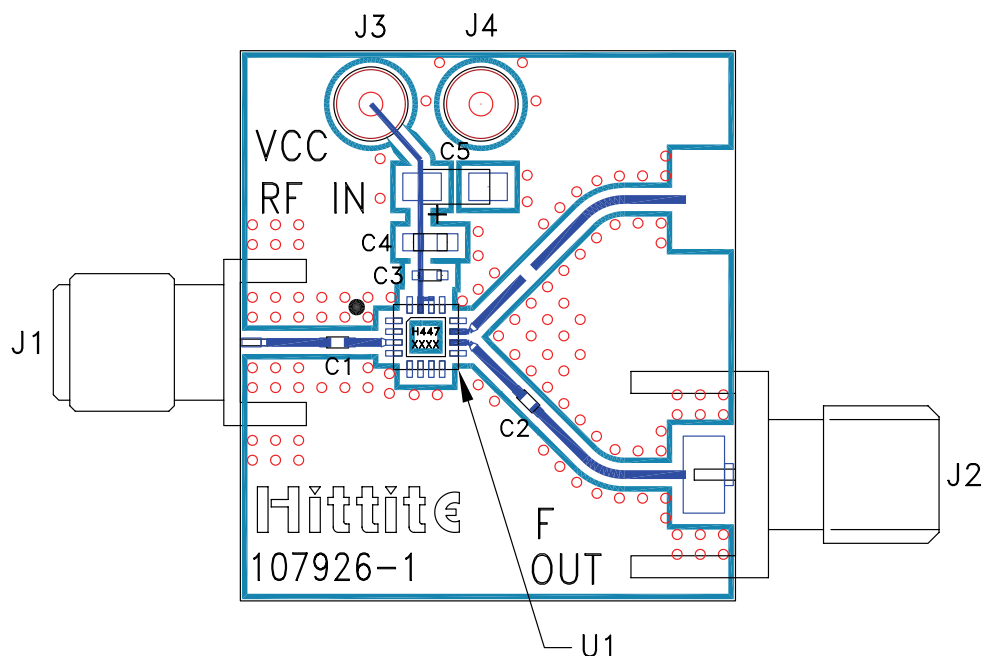

**SMT GaAs HBT MMIC
DIVIDE-BY-4, 10 - 26 GHz**
Pin Description

Pin Number	Function	Description	Interface Schematic
1, 2, 4 - 9, 11 12, 13, 16	N/C	No connection. These pins may be connected to RF/DC ground. Performance will not be affected.	
3	Fin	RF Input must be DC blocked.	
10	Fout	Divided Output must be DC blocked.	
14, 15	Vcc1, Vcc2	Supply voltage 5V ± 0.25V. Connect both pins to +5V supply.	
	GND	Backside of package has exposed metal ground paddle which must be connected to RF/DC ground.	



**SMT GaAs HBT MMIC
DIVIDE-BY-4, 10 - 26 GHz**

Evaluation PCB



List of Materials for Evaluation PCB 107928 ^[1]

Item	Description
J1	PCB Mount SRI K-Connector
J2	PCB Mount SMA RF Connector
J3, J4	DC Pin
C1	10pF Capacitor, 0402 Pkg.
C2, C3	100 pF Capacitor, 0402 Pkg.
C4	10000 pF Capacitor, 0603 Pkg.
C5	2.2 uF Tantalum Capacitor
U1	HMC447LC3 Divide-by-4
PCB [2]	107926 Eval Board

[1] Reference this number when ordering complete evaluation PCB

[2] Circuit Board Material: Rogers 4350

The circuit board used in the final application should use RF circuit design techniques. Signal lines should have 50 Ohm impedance while the package ground leads and backside 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.

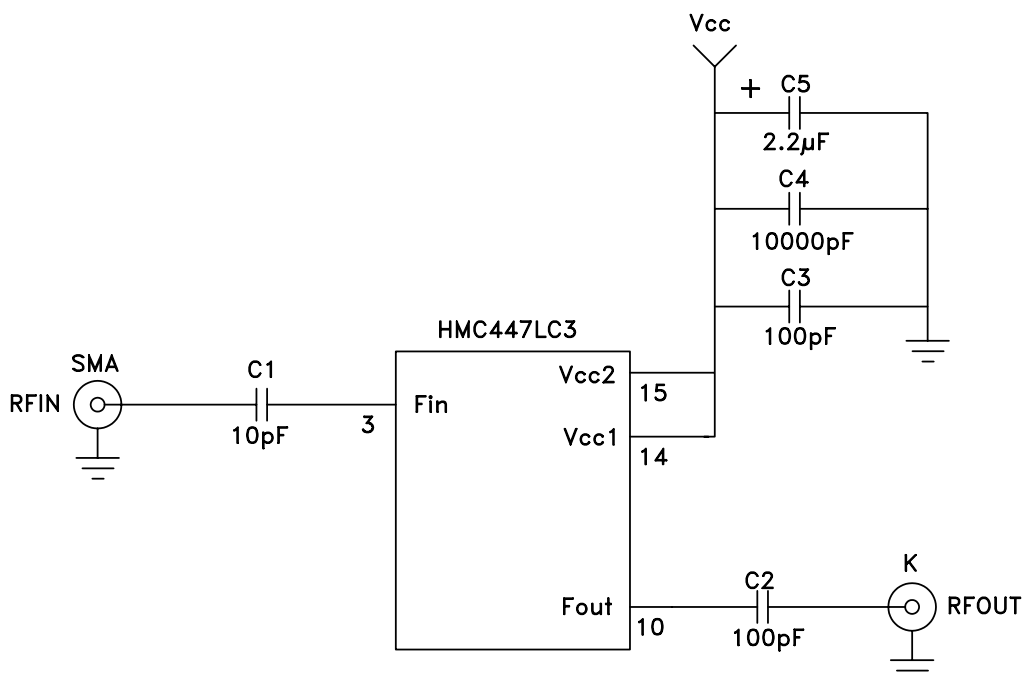


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HMC447LC3

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DIVIDE-BY-4, 10 - 26 GHz

Application Circuit



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HMC447LC3

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