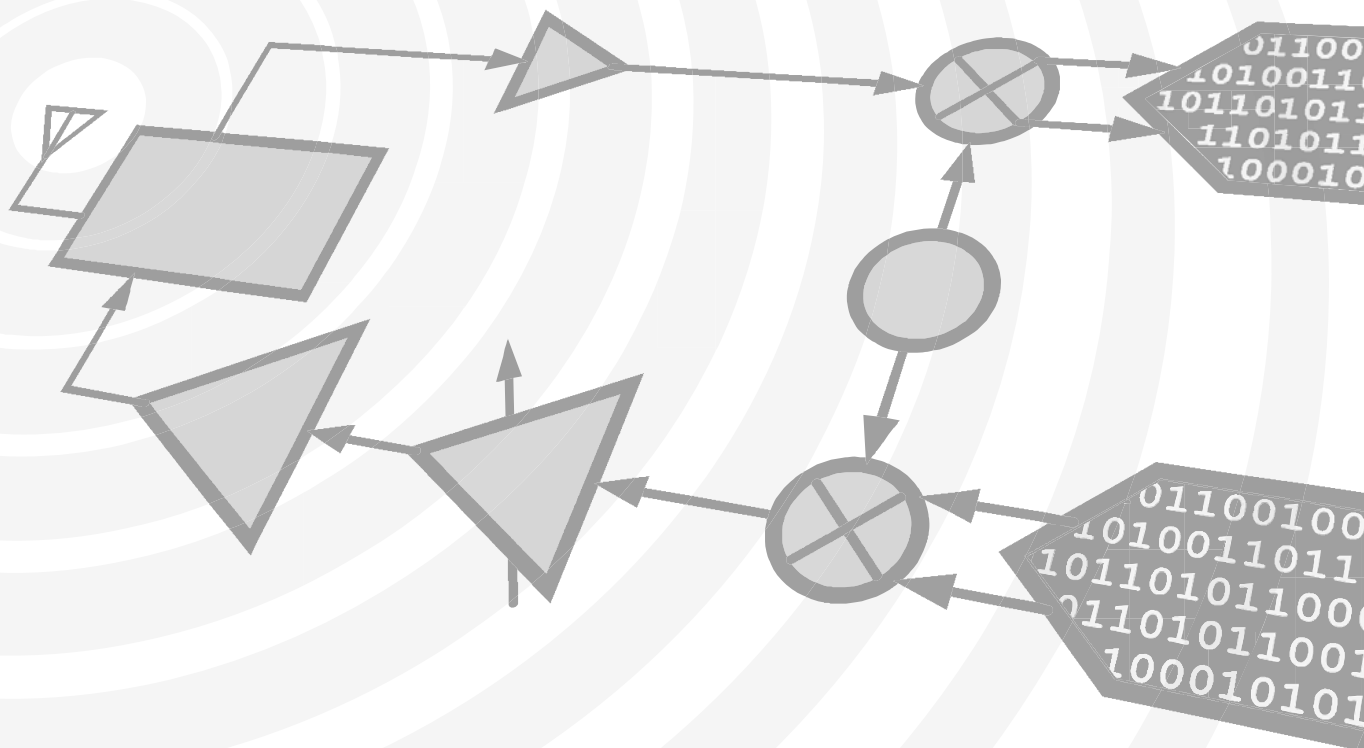




NO CONTENT ON THE ATTACHED DOCUMENT HAS CHANGED

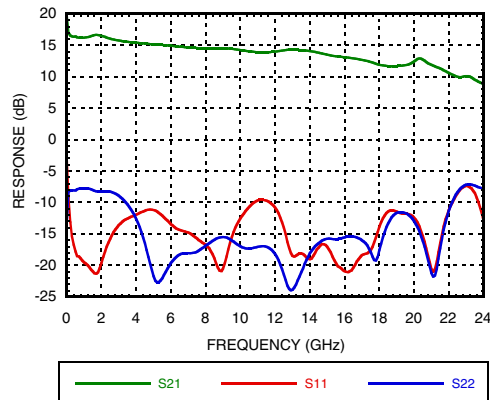


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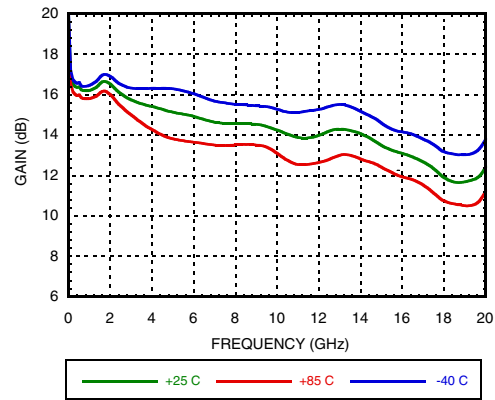
GaAs pHEMT MMIC LOW NOISE AMPLIFIER, 0.3 - 20 GHz

Data taken with Vdd applied to pin 2.

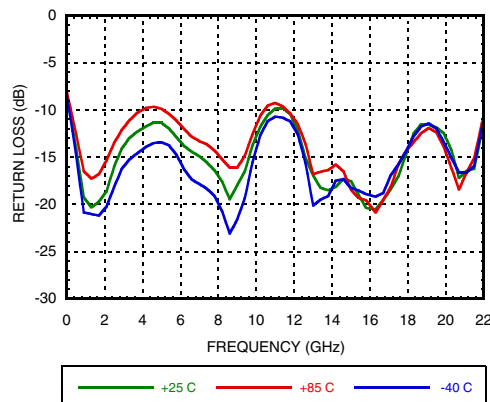
Broadband Gain & Return Loss



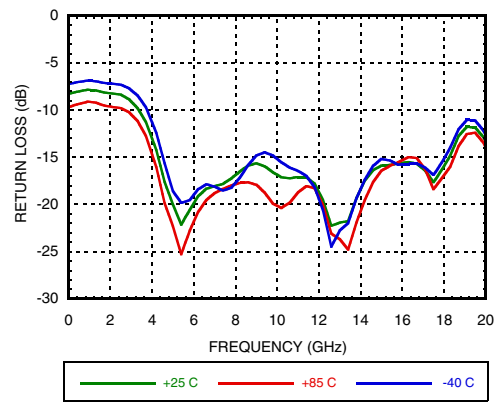
Gain vs. Temperature



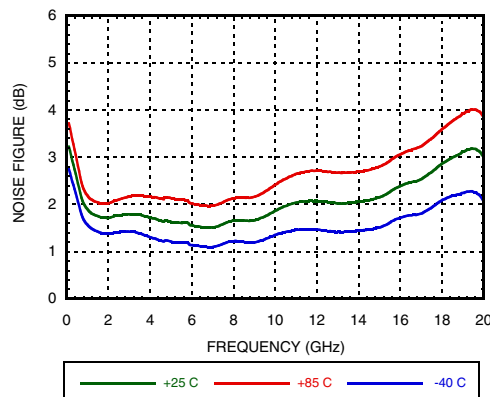
Input Return Loss vs. Temperature



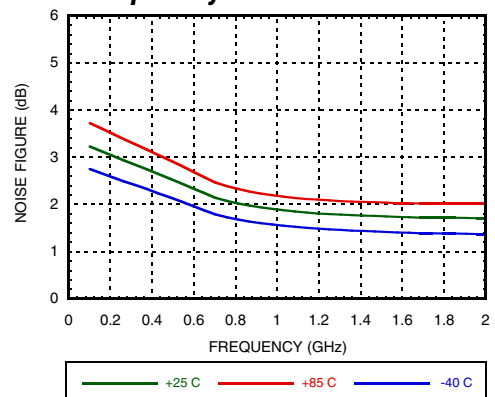
Output Return Loss vs. Temperature



Noise Figure vs. Temperature



Noise Figure vs. Temperature, Low Frequency





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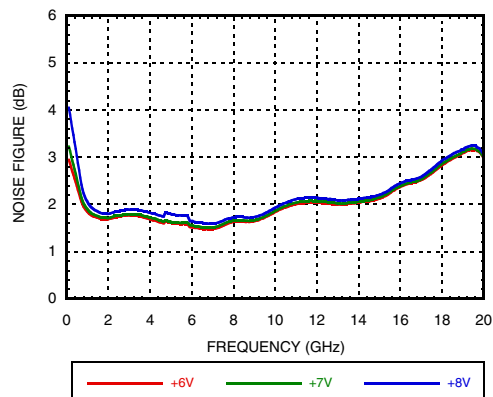


HMC1049LP5E

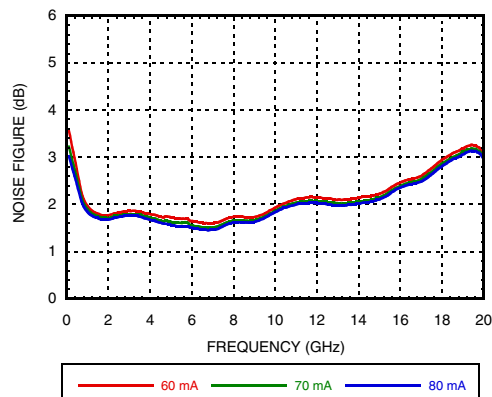
GaAs pHEMT MMIC LOW NOISE AMPLIFIER, 0.3 - 20 GHz

Data taken with Vdd applied to pin 2.

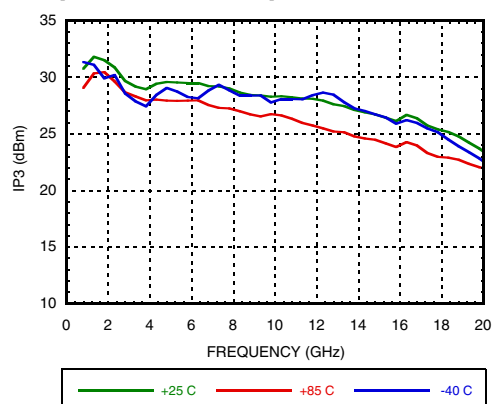
Noise Figure vs. Vdd



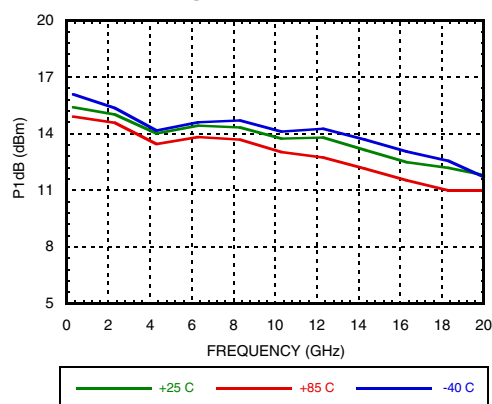
Noise Figure vs. Idd



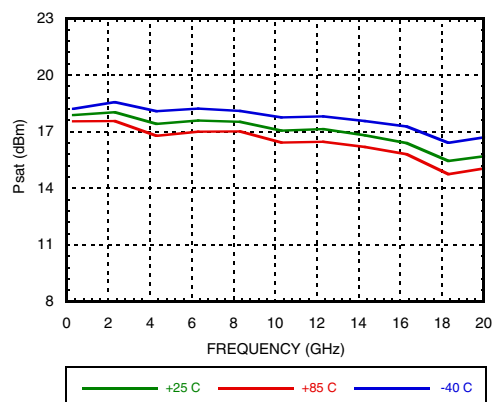
Output IP3 vs. Temperature



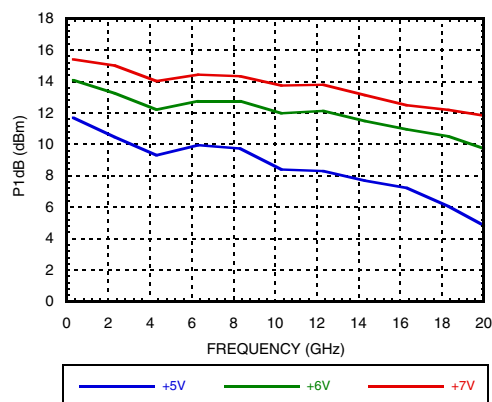
P1dB vs. Temperature



Psat vs. Temperature



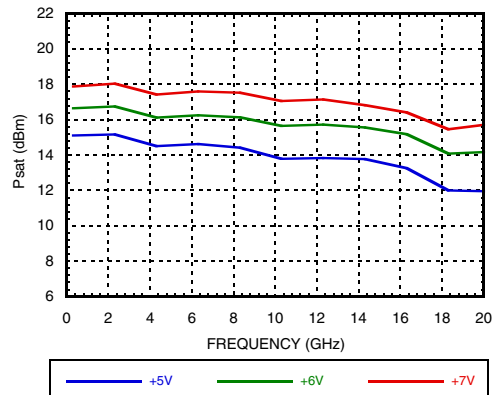
P1dB vs. Vdd



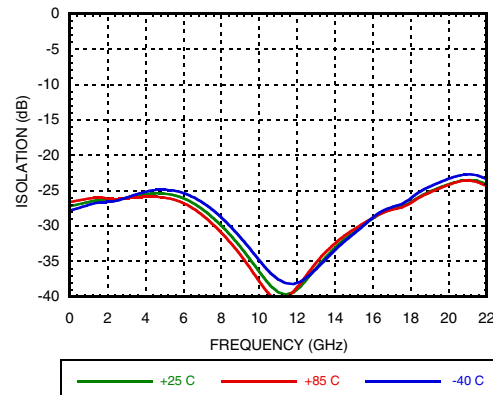
GaAs pHEMT MMIC LOW NOISE AMPLIFIER, 0.3 - 20 GHz

Data taken with Vdd applied to pin 2.

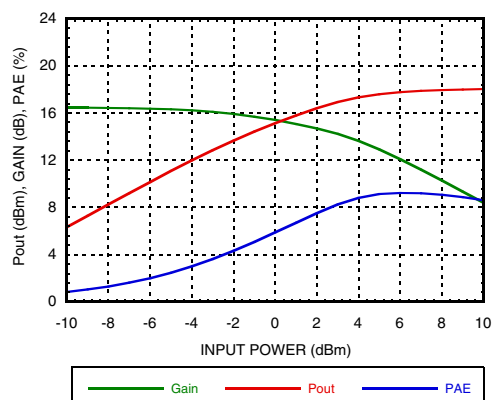
Psat vs. Vdd



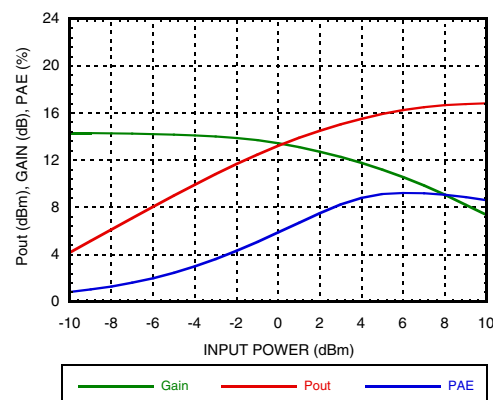
Reverse Isolation vs. Temperature



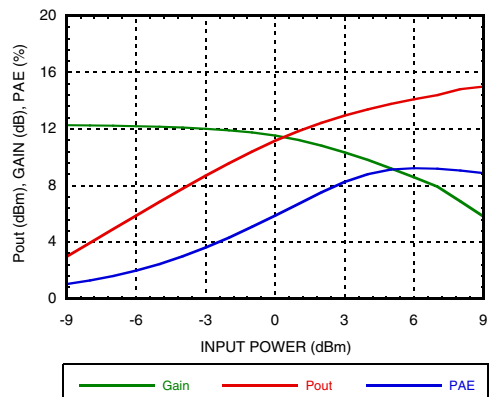
Power Compression @ 2 GHz



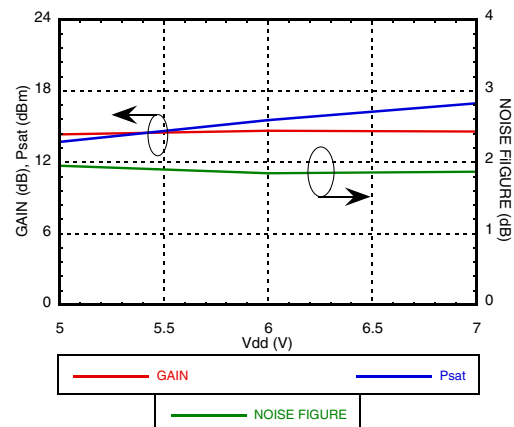
Power Compression @ 10 GHz



Power Compression @ 18 GHz

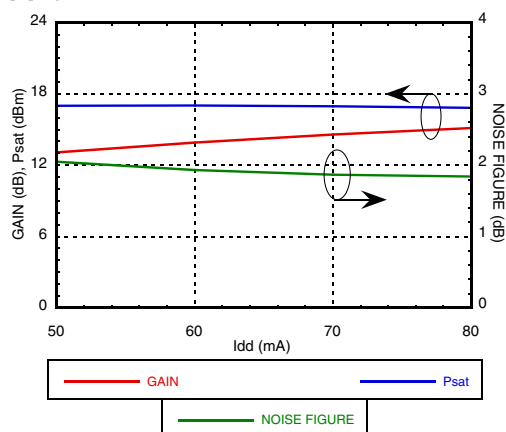


Noise Figure, Gain & Power vs. Supply Voltage @ 12 GHz





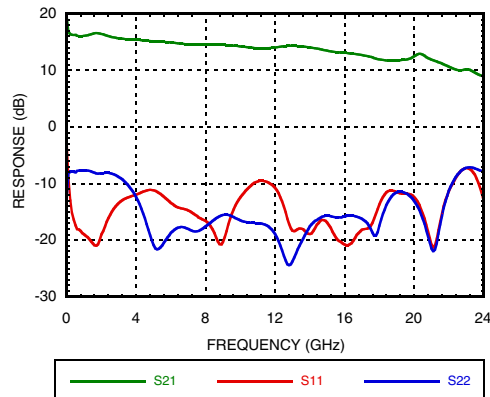
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**HMC1049LP5E****GaAs pHEMT MMIC LOW NOISE
AMPLIFIER, 0.3 - 20 GHz****Data taken with Vdd applied to pin 2.****Noise Figure, Gain & Power vs.
Supply Current @ 12 GHz**

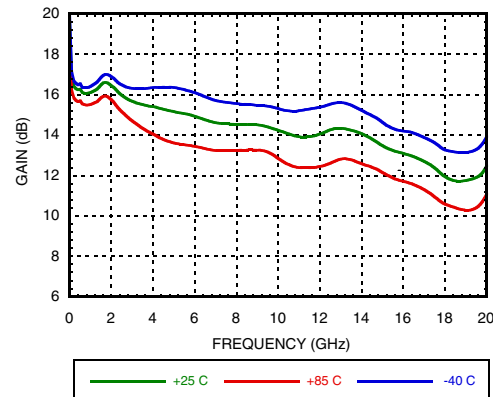
GaAs pHEMT MMIC LOW NOISE AMPLIFIER, 0.3 - 20 GHz

Data taken with Vdd applied to bias tee at pin 21.

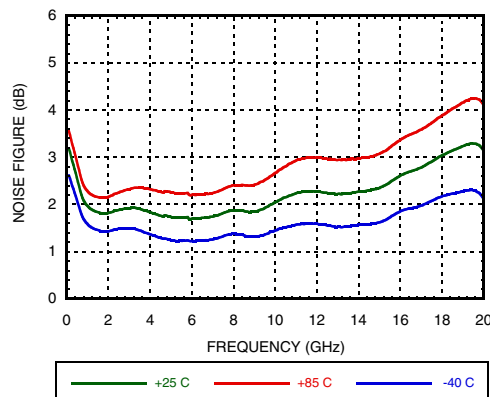
Broadband Gain & Return Loss ^[1]



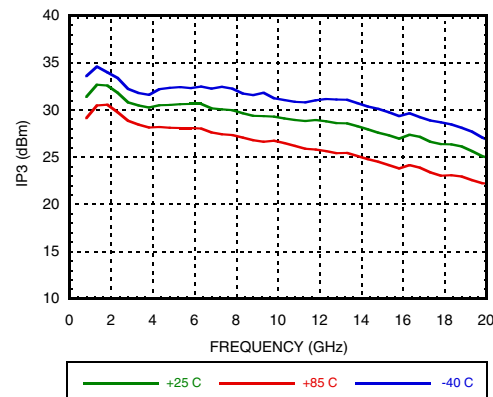
Gain vs. Temperature ^[1]



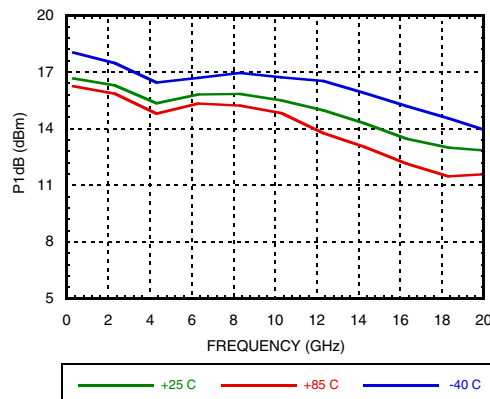
Noise Figure vs. Temperature ^[1]



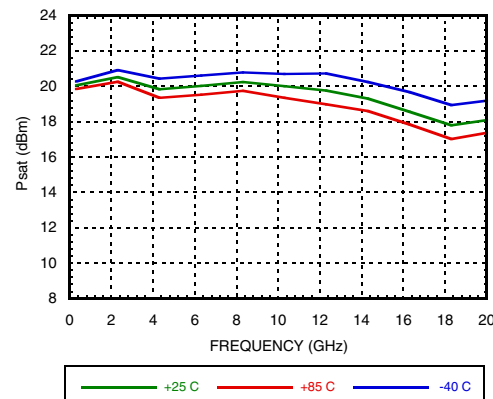
Output IP3 vs. Temperature ^[1]



P1dB vs. Temperature ^[1]



Psat vs. Temperature ^[1]



[1] Vdd= +4V, supply to bias tee.



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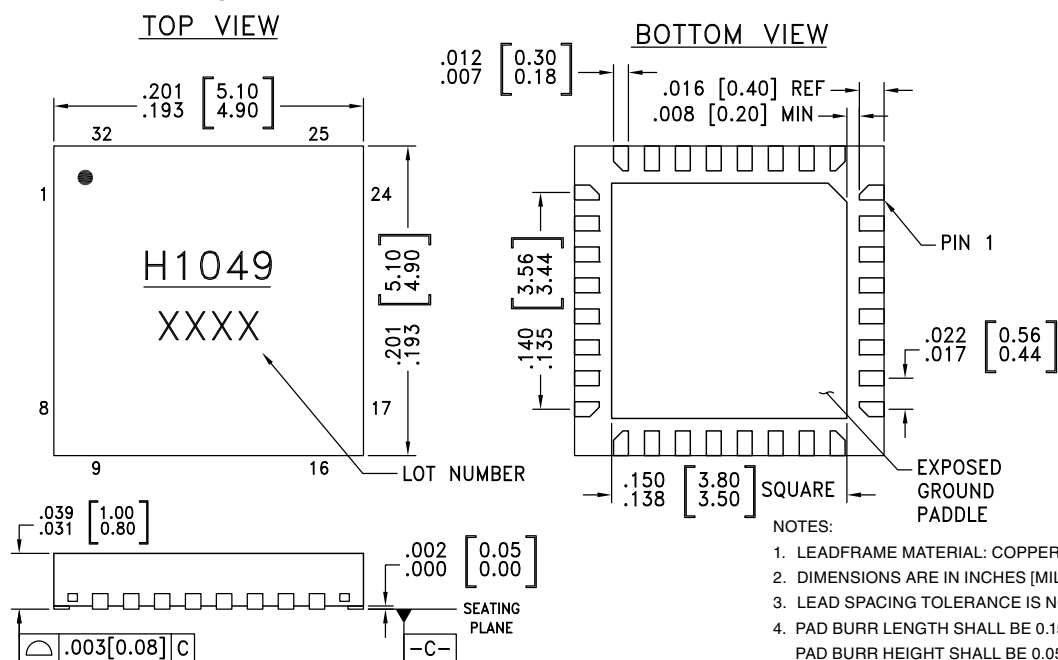
**HMC1049LP5E****GaAs pHEMT MMIC LOW NOISE
AMPLIFIER, 0.3 - 20 GHz****Absolute Maximum Ratings**

Drain Bias Voltage (Vdd)	+10V
Drain Bias Voltage (RF out / Vdd)	+7V
RF Input Power	+18 dBm
Gate Bias Voltage, Vgg1	-2V to +0.2V
Channel Temperature	175 °C
Continuous P _{diss} (T = 85 °C) (derate 37.1 mW/°C above 85 °C)	3.34 W
Thermal Resistance (Channel to die bottom)	26.9 °C/W
Storage Temperature	-65 to +150 °C
Operating Temperature	-40 to +85 °C
ESD Sensitivity (HBM)	Class 1A

Typical Supply Current vs. Vdd

Vdd (V)	Idd (mA)
+5	70
+6	70
+7	70

Adjust Vgg1 to achieve Idd = 70 mA

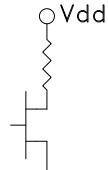
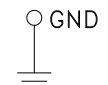
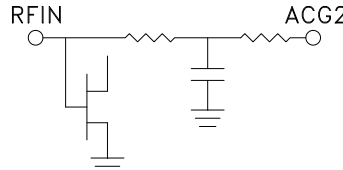
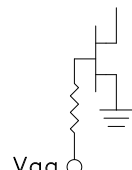
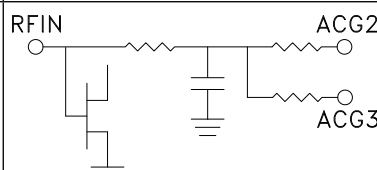
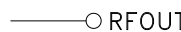
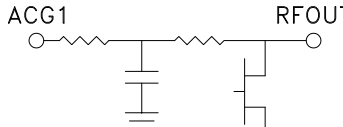
**ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS****Outline Drawing****Package Information**

Part Number	Package Body Material	Lead Finish	MSL Rating [2]	Package Marking [1]
HMC1049LP5E	RoHS-compliant Low Stress Injection Molded Plastic	100% matte Sn	MSL1	H1049 XXXX

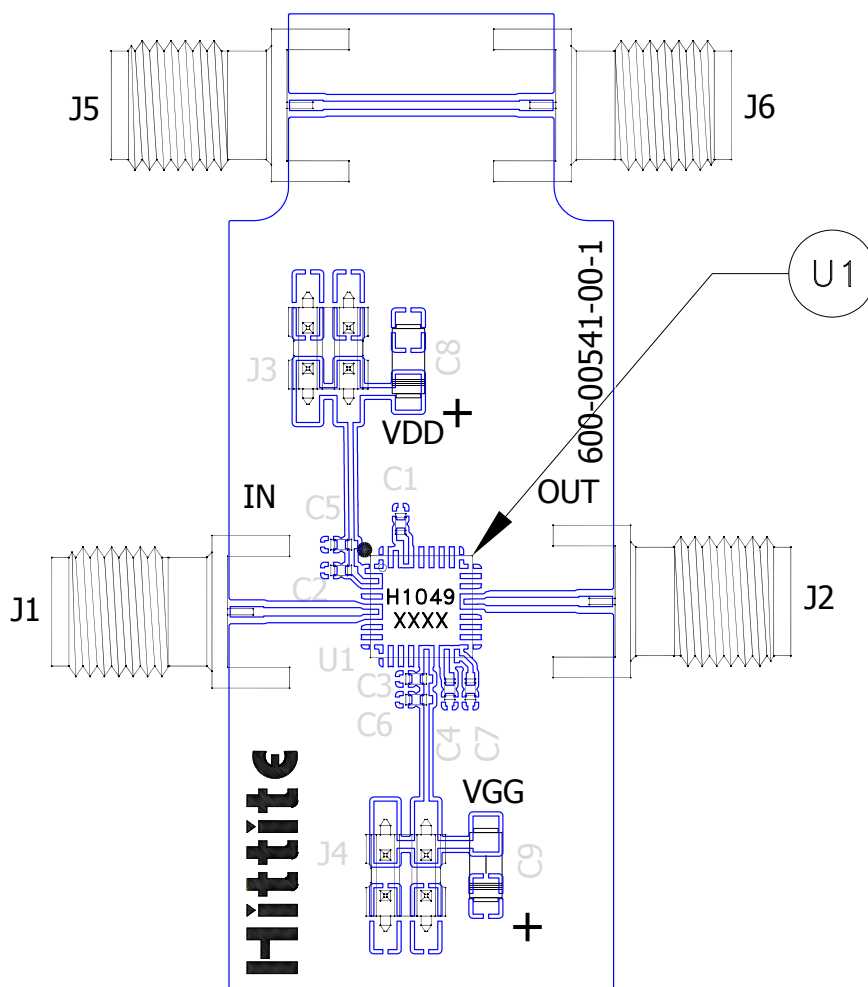
[1] 4-Digit lot number XXXX

[2] Max peak reflow temperature of 260 °C

Pin Descriptions

Pad Number	Function	Description	Interface Schematic
1, 3, 6-12, 14, 17-20, 23-29, 31, 32	N/C	No connection required. The pins are not connected internally; however, all data shown herein was measured with these pins connected to RF/DC ground externally.	
2	Vdd	Power supply voltage for the amplifier. External bypass capacitors 100 pF, and 0.01 uF are required.	
4, 22	GND	These pins and the exposed ground paddle must be connected to RF/DC ground.	
5	RFIN	This pin is DC coupled and matched to 50 Ohms.	
13	Vgg	Gate control for amplifier. External bypass capacitors 100 pF, 0.01uF, and 4.7 uF are required. Adjust voltage to achieve typical I _{dd} .	
15, 16	ACG3, ACG2	Low frequency termination. External bypass capacitors 100 pF are required.	
21	RFOUT/Vdd	This pin is DC coupled and matched to 50 Ohms.	
30	ACG1	Low frequency termination. External bypass capacitor 100 pF required.	

Evaluation PCB

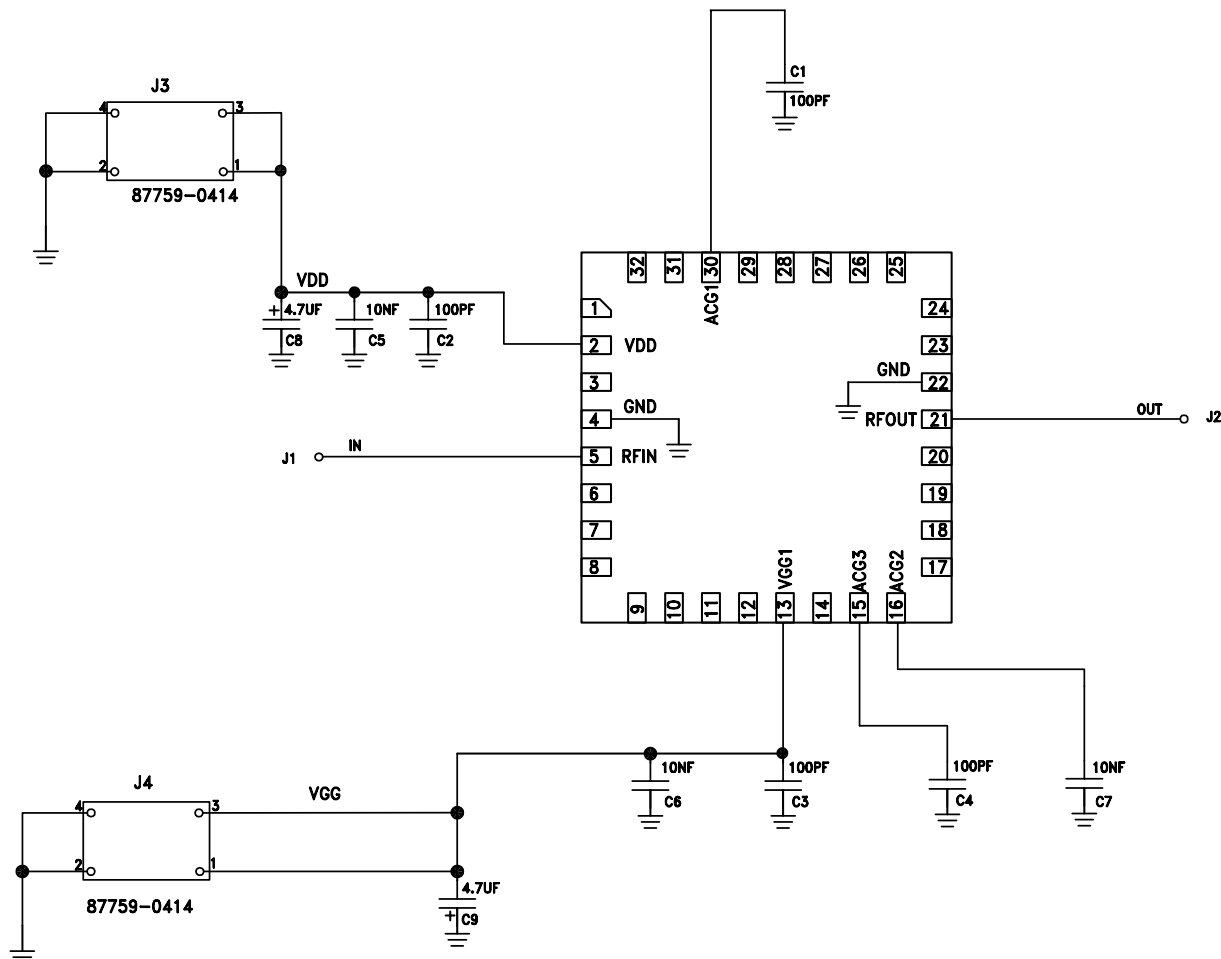


List of Materials for Evaluation PCB EV1HMC1049LP5 [1]

Item	Description
J1, J2, J5, J6	PCB Mount SMA RF Connector.
J3, J4	DC Pins.
C1 - C4	100 pF Capacitor, 0402 Pkg.
C5 - C7	10000 pF Capacitor, 0402 Pkg.
C8 - C9	4.7 uF Capacitor, Tantalum.
U1	HMC1049LP5E.
PCB [1]	600-00541-00-1 Evaluation PCB.

[1] Circuit Board Material: Rogers 4350 or Arlon 25FR

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 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.

Evaluation PCB Schematic




**Стандарт
Электрон
Связь**

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

Собственная эффективная логистика и склад в обеспечивает надежную поставку продукции в точно указанные сроки по всей России.

Мы осуществляем техническую поддержку нашим клиентам и предпродажную проверку качества продукции. На все поставляемые продукты мы предоставляем гарантию .

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Минимальные сроки поставки, гибкие цены, неограниченный ассортимент и индивидуальный подход к клиентам являются основой для выстраивания долгосрочного и эффективного сотрудничества с предприятиями радиоэлектронной промышленности, предприятиями ВПК и научно-исследовательскими институтами России.

С нами вы становитесь еще успешнее!

Наши контакты:

Телефон: +7 812 627 14 35

Электронная почта: sales@st-electron.ru

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Промышленная ул, дом № 19, литера Н,
помещение 100-Н Офис 331