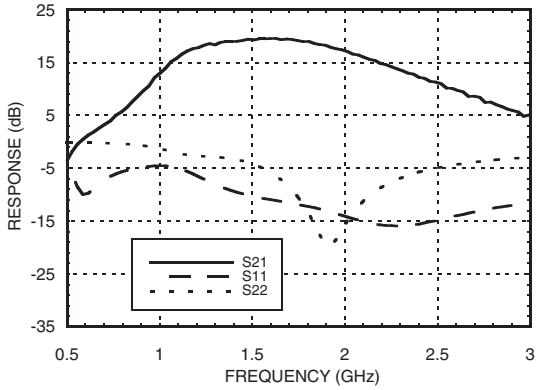
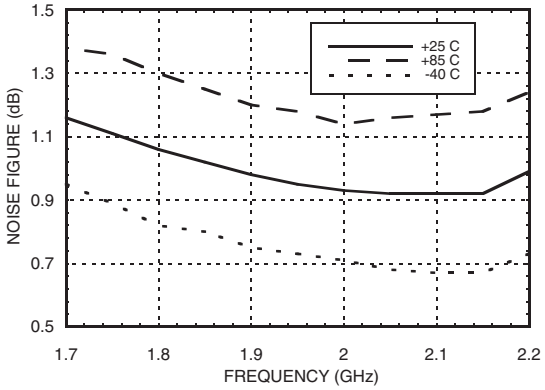
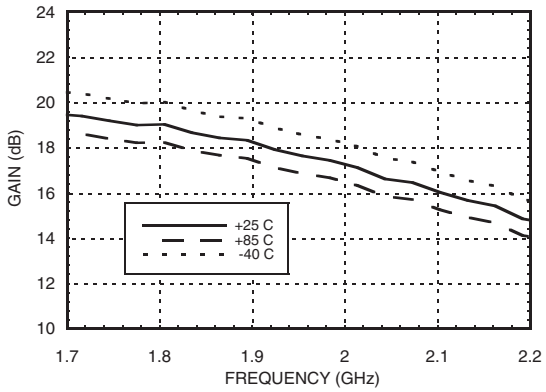
Broadband Gain & Return Loss



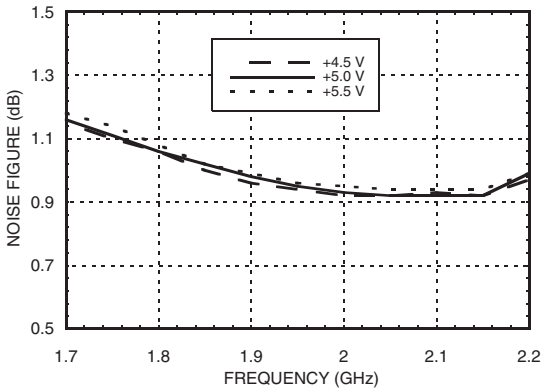
Noise Figure vs. Temperature



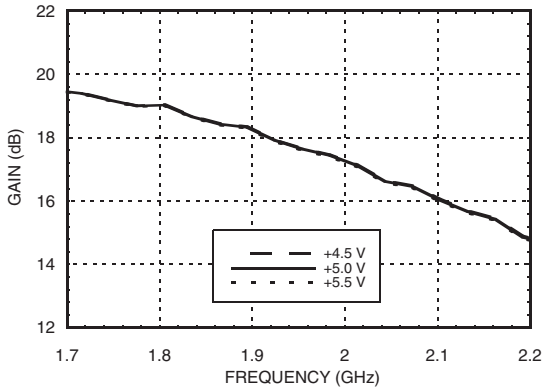
Gain vs. Temperature



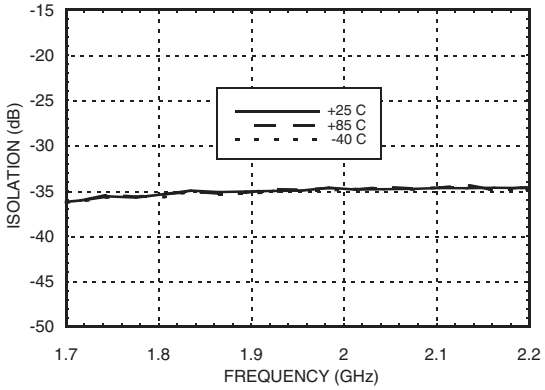
Noise Figure vs. Vdd



Gain vs. Vdd



Reverse Isolation vs. Temperature



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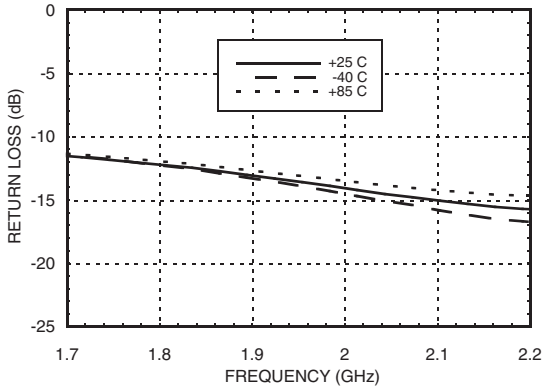
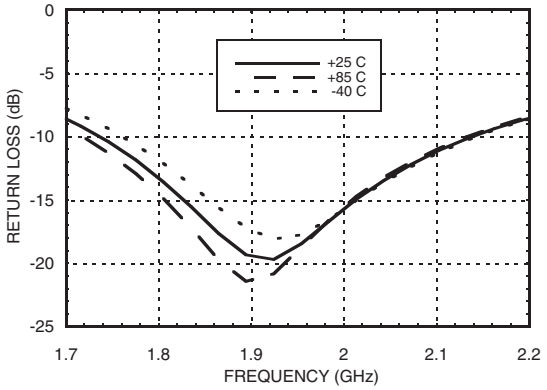
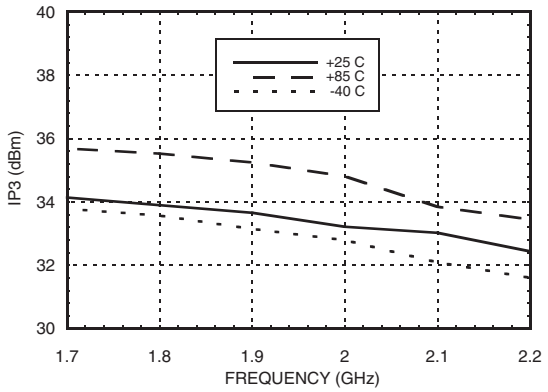
Input Return Loss vs. Temperature



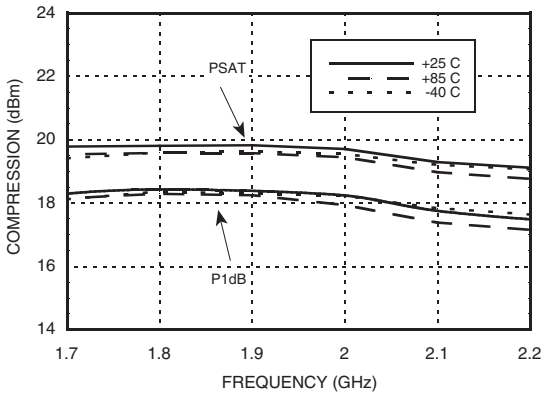
Output Return Loss vs. Temperature



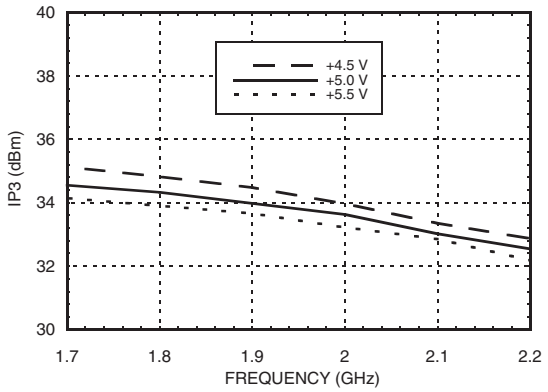
Output IP3 vs. Temperature



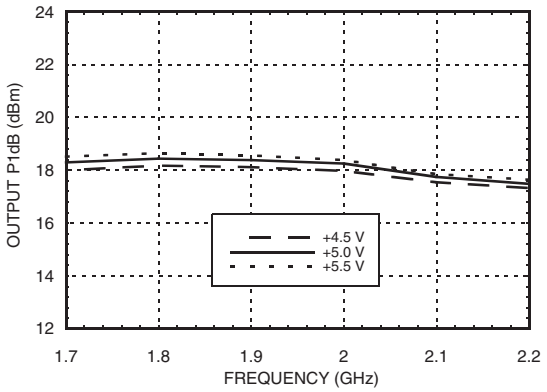
P1dB & PSAT vs. Temperature



Output IP3 vs. Vdd



P1dB vs. Vdd



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Absolute Maximum Ratings

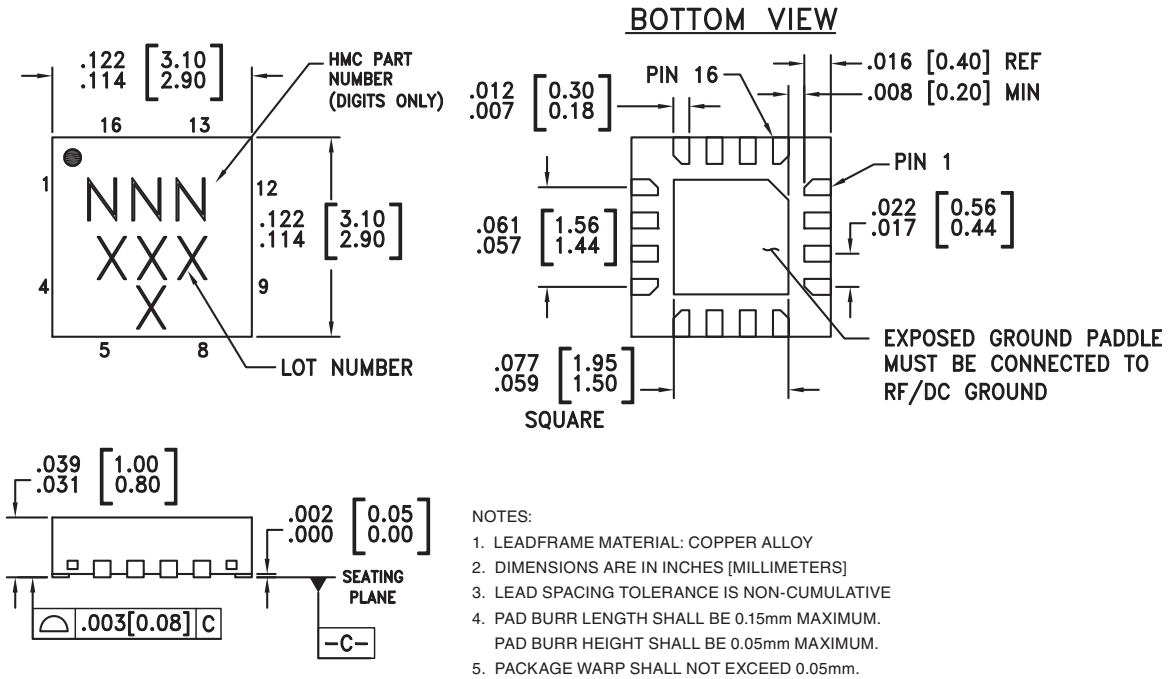
Drain Bias Voltage (Vdd1, Vdd2)	+8.0 Vdc
RF Input Power (RFIN)(Vs = +5.0 Vdc)	+10 dBm
Channel Temperature	150 °C
Continuous Pdiss (T = 85 °C) (derate 15.6 mW/°C above 85 °C)	1.015 W
Thermal Resistance (channel to ground paddle)	64.1 °C/W
Storage Temperature	-65 to +150 °C
Operating Temperature	-40 to +85 °C

Typical Supply Current vs. Vdd

Vdd (Vdc)	Idd (mA)
+4.5	135
+5.0	136
+5.5	137

ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

Outline Drawing



NOTES:

1. LEADFRAME MATERIAL: COPPER ALLOY
2. DIMENSIONS ARE IN INCHES [MILLIMETERS]
3. LEAD SPACING TOLERANCE IS NON-CUMULATIVE
4. PAD BURR LENGTH SHALL BE 0.15mm MAXIMUM. PAD BURR HEIGHT SHALL BE 0.05mm MAXIMUM.
5. PACKAGE WARP SHALL NOT EXCEED 0.05mm.
6. ALL GROUND LEADS AND GROUND PADDLE MUST BE SOLDERED TO PCB RF GROUND.
7. REFER TO HITTITE APPLICATION NOTE FOR SUGGESTED LAND PATTERN.

Package Information

Part Number	Package Body Material	Lead Finish	MSL Rating	Package Marking [3]
HMC375LP3	Low Stress Injection Molded Plastic	Sn/Pb Solder	MSL1 [1]	375 XXXX
HMC375LP3E	RoHS-compliant Low Stress Injection Molded Plastic	100% matte Sn	MSL1 [2]	375 XXXX

[1] Max peak reflow temperature of 235 °C
[2] Max peak reflow temperature of 260 °C
[3] 4-Digit lot number XXXX

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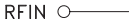
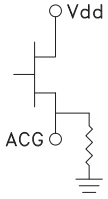
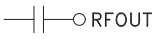
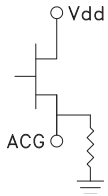
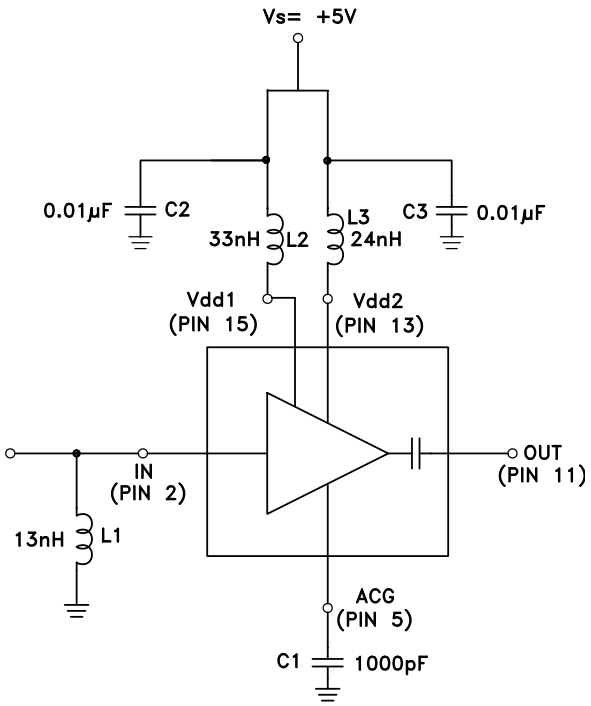
Pin Descriptions

Pin Number	Function	Description	Interface Schematic
1, 3, 4, 6-10, 12, 14, 16	N/C	No connection necessary. These pins may be connected to RF/DC ground.	
2	RFIN	This pin is matched to 50 Ohms with a 13 nH inductor to ground. See Application Circuit.	
5	ACG	AC Ground - An external capacitor of 0.01µF to ground is required for low frequency bypassing. See Application Circuit for further details.	
11	RFOUT	This pin is AC coupled and matched to 50 Ohms.	
13,15	Vdd2, Vdd1	Power supply voltage. Choke inductor and bypass capacitor are required. See application circuit.	
	GND	Package bottom must be connected to RF/DC ground.	

Application Circuit



Note: L1, L2, L3 and C1 should be located as close to pins as possible.

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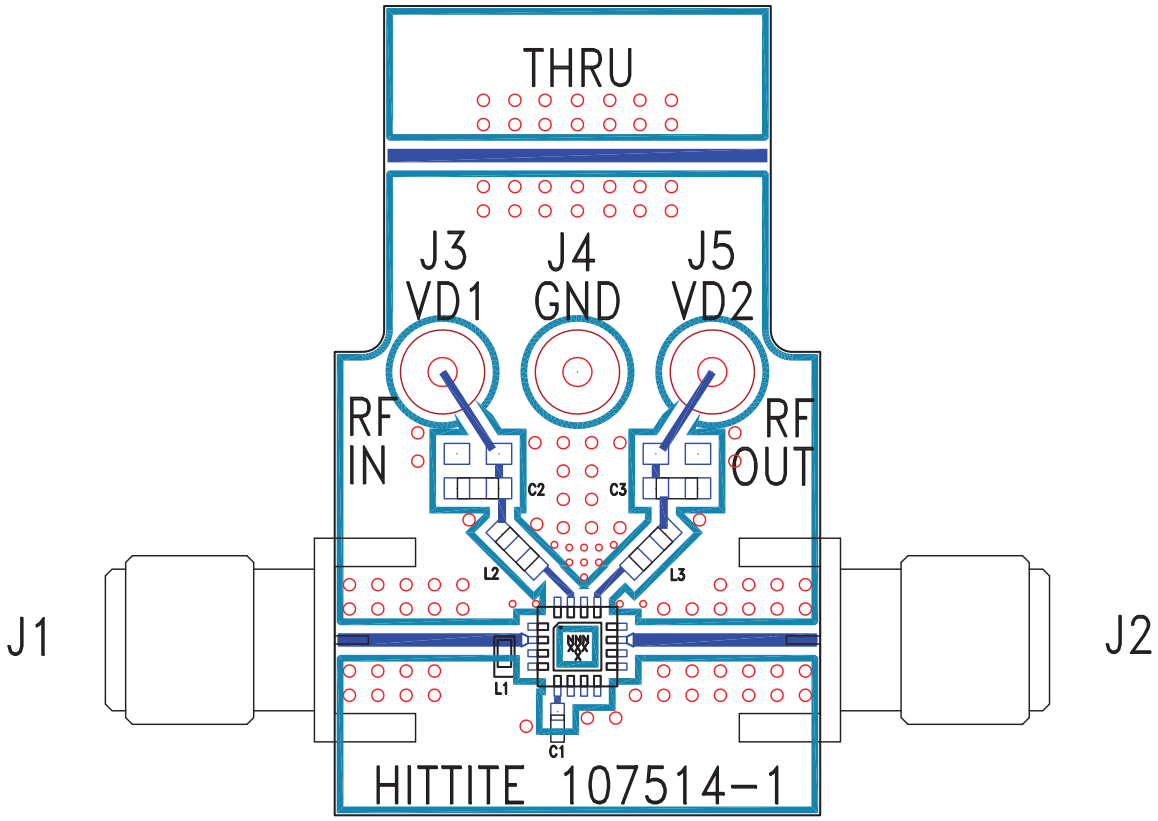
Evaluation PCB



List of Materials for Evaluation PCB 107726 [1]

Item	Description
J1 - J2	PCB Mount SMA RF Connector
J3 - J4	DC Pin
C1	1000 pF Capacitor, 0402 Pkg.
C2, C3	10000 pF Capacitor, 0603 Pkg.
L1	13nH Inductor, 0402 Pkg.
L2	33nH Inductor, 0603 Pkg.
L3	24nH Inductor, 0402 Pkg.
U1	HMC375LP3 / HMC375LP3E Amplifier
PCB [2]	107514 Evaluation PCB

[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 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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