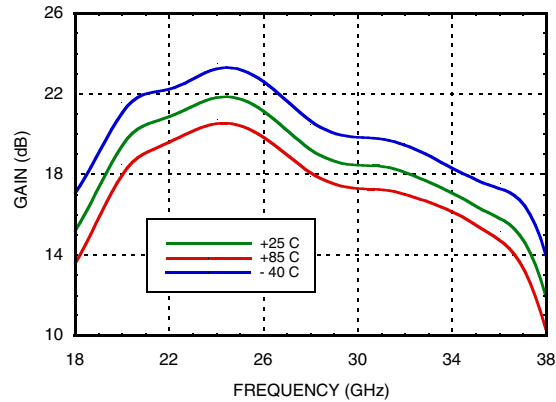
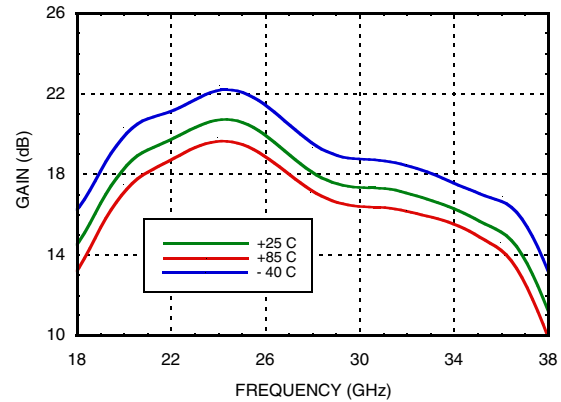


**GaAs MMIC LOW NOISE
AMPLIFIER, 24 - 36 GHz**

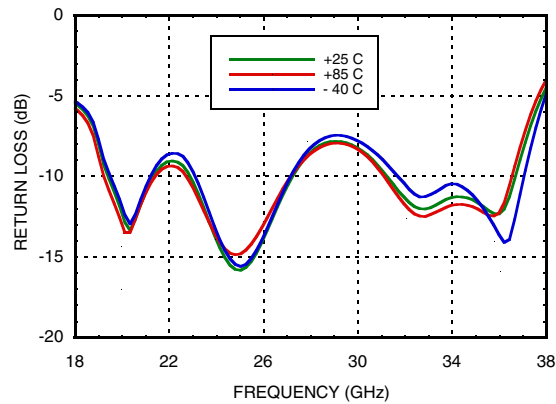
Gain vs. Temperature @ Vdd = +3V



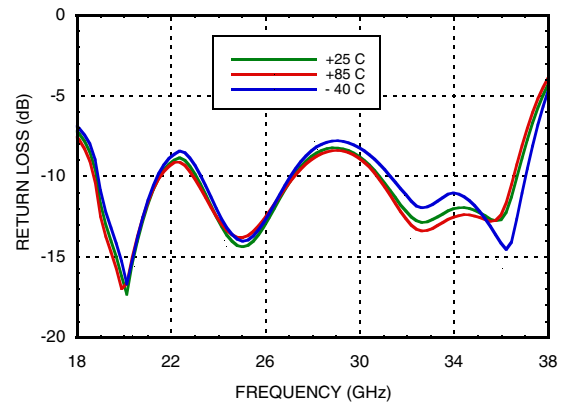
Gain vs. Temperature @ Vdd = +5V



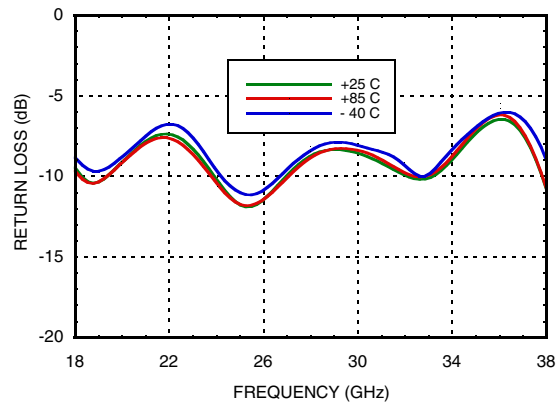
Input Return Loss @ Vdd = +3V



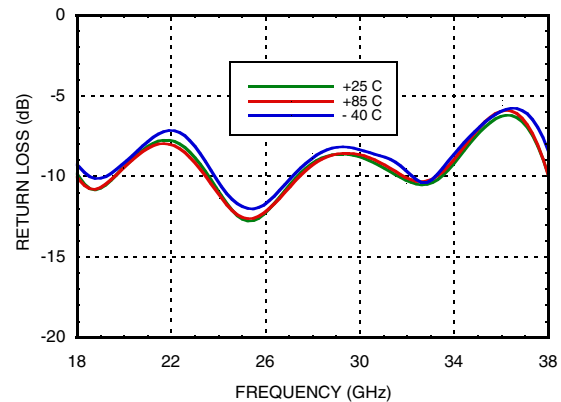
Input Return Loss @ Vdd = +5V

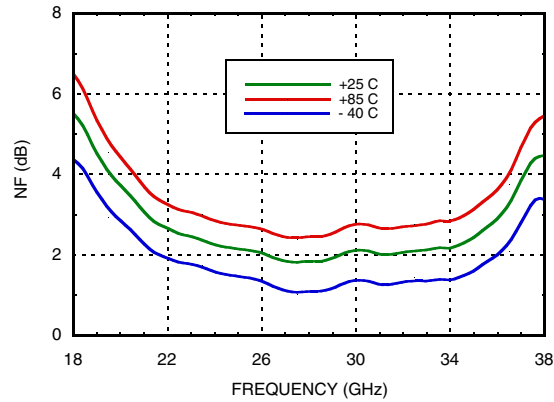
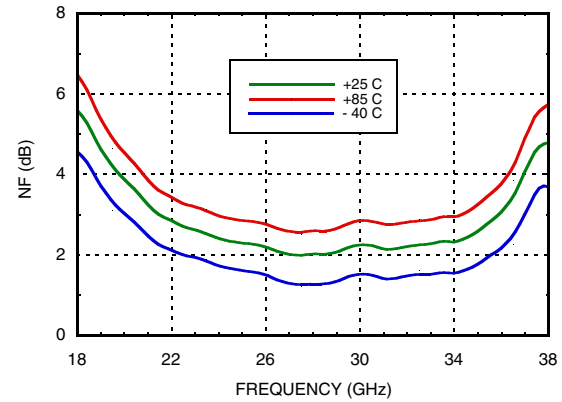
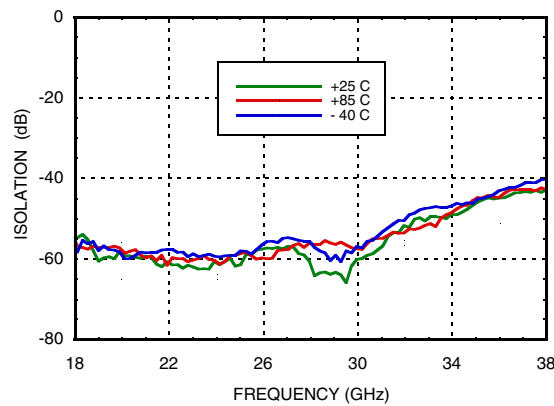
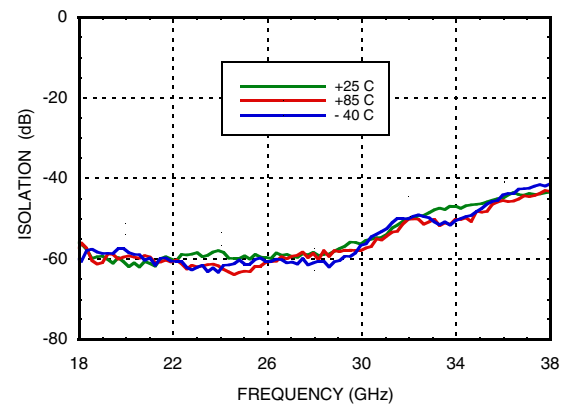
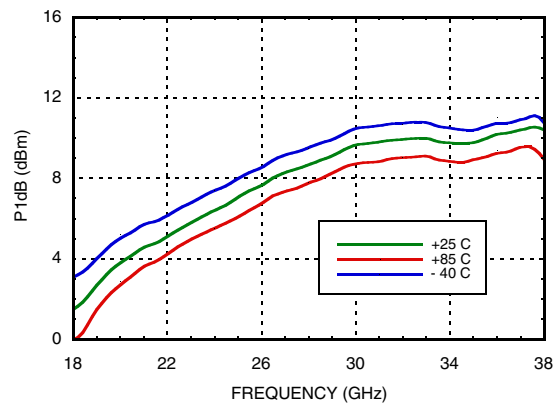
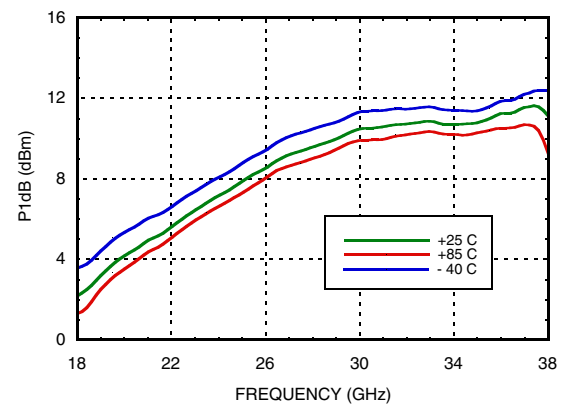


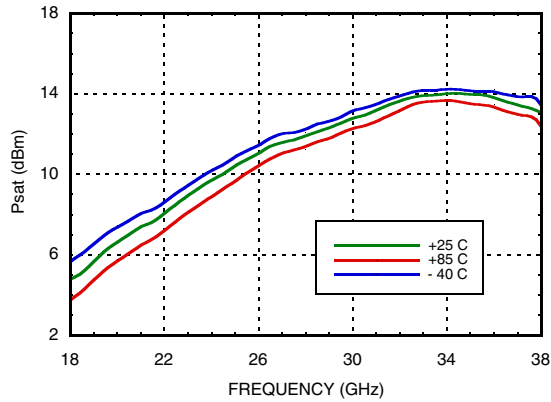
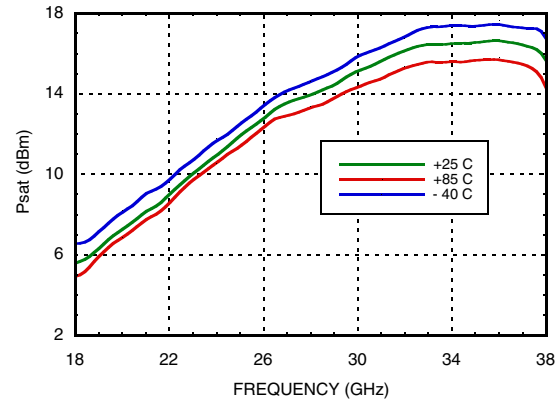
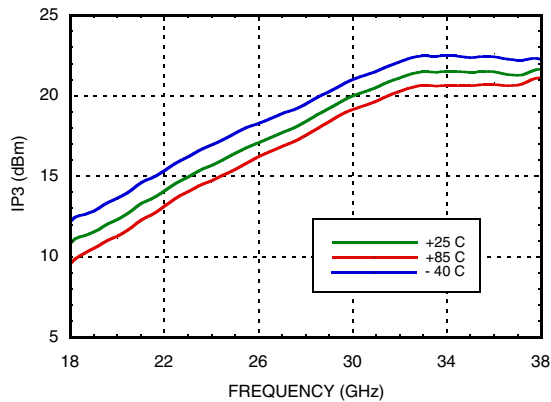
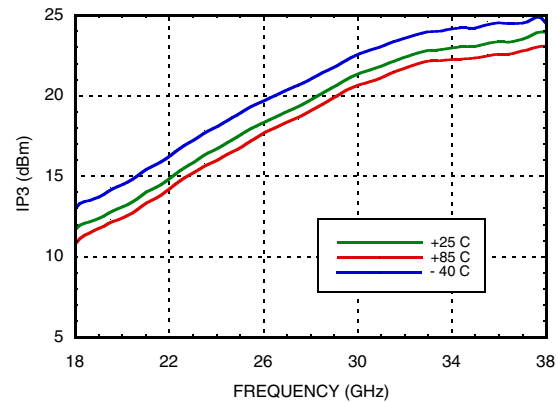
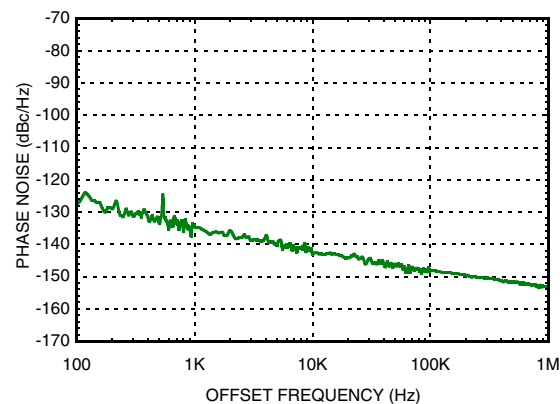
Output Return Loss @ Vdd = +3V



Output Return Loss @ Vdd = +5V



**GaAs MMIC LOW NOISE
AMPLIFIER, 24 - 36 GHz**
**Noise Figure
vs. Temperature @ Vdd = +3V**

**Noise Figure
vs. Temperature @ Vdd = +5V**

Isolation @ Vdd = +3V

Isolation @ Vdd = +5V

Output P1dB @ Vdd = +3V

Output P1dB @ Vdd = +5V


**GaAs MMIC LOW NOISE
AMPLIFIER, 24 - 36 GHz**
Psat @ Vdd = +3V

Psat @ Vdd = +5V

Output IP3 @ Vdd = +3V

Output IP3 @ Vdd = +5V

**Additive Phase Noise Vs Offset Frequency,
RF Frequency = 30 GHz,
RF Input Power = -8 dBm (P1dB)**


GaAs MMIC LOW NOISE AMPLIFIER, 24 - 36 GHz

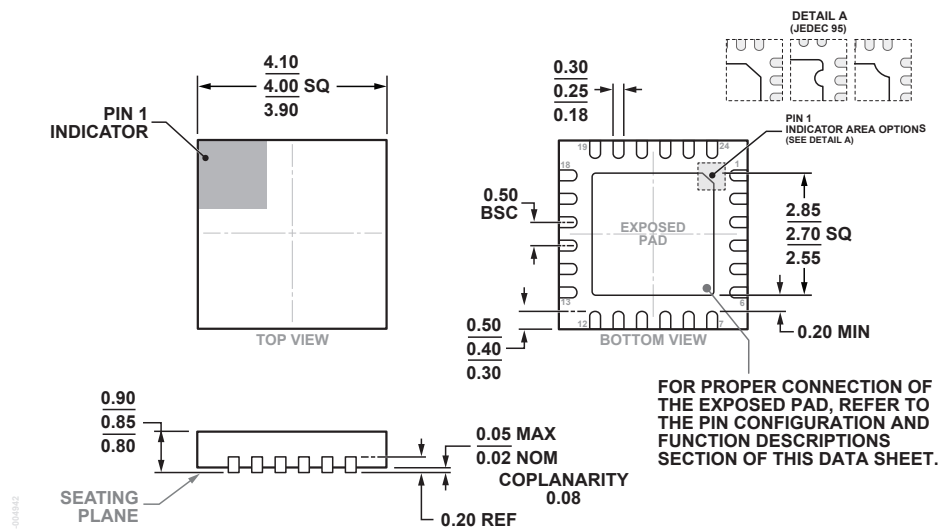
Absolute Maximum Ratings

Drain Bias Voltage (Vdd1, Vdd2)	+5.5 Vdc
RF Input Power (RFIN)(Vdd = +3 Vdc)	-5 dBm
Channel Temperature	175 °C
Continuous P _{diss} (T = 85 °C) (derate 7.7 mW/°C above 85 °C)	0.7 W
Thermal Resistance (channel to ground paddle)	130 °C/W
Storage Temperature	-65 to +150 °C
Operating Temperature	-40 to +85 °C



ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

Outline Drawing



COMPLIANT TO JEDEC STANDARDS MO-220-VGGD-8.

24-Lead Lead Frame Chip Scale Package [LFCSP]
4 mm × 4 mm Body and 0.85 mm Package Height
(CP-24-16)
Dimensions shown in millimeters.

Package Information

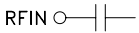
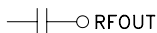
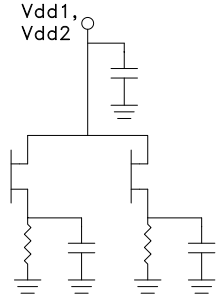
Part Number	Package Body Material	Lead Finish	MSL Rating	Package Marking ^[1]
HMC263LP4E	RoHS-compliant Low Stress Injection Molded Plastic	100% matte Sn	MSL3 ^[2]	H263 XXXX

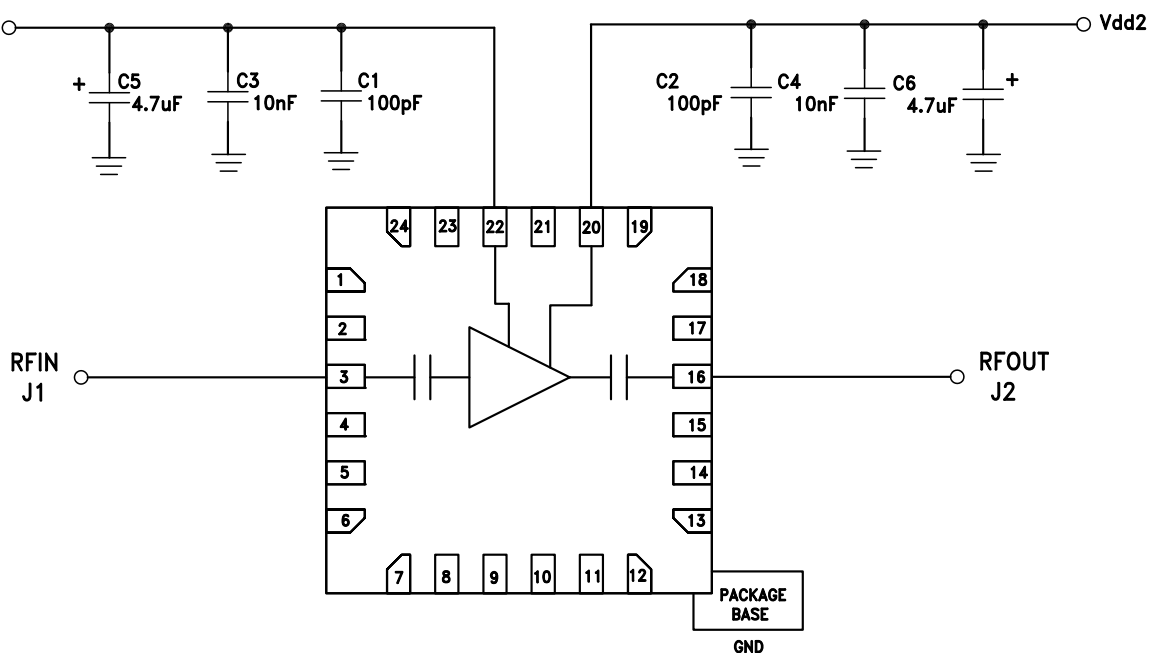
[1] 4-Digit lot number XXXX

[2] Max peak reflow temperature of 260 °C

For price, delivery, and to place orders: Analog Devices, Inc., One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106
Phone: 781-329-4700 • Order online at www.analog.com
Application Support: Phone: 1-800-ANALOG-D

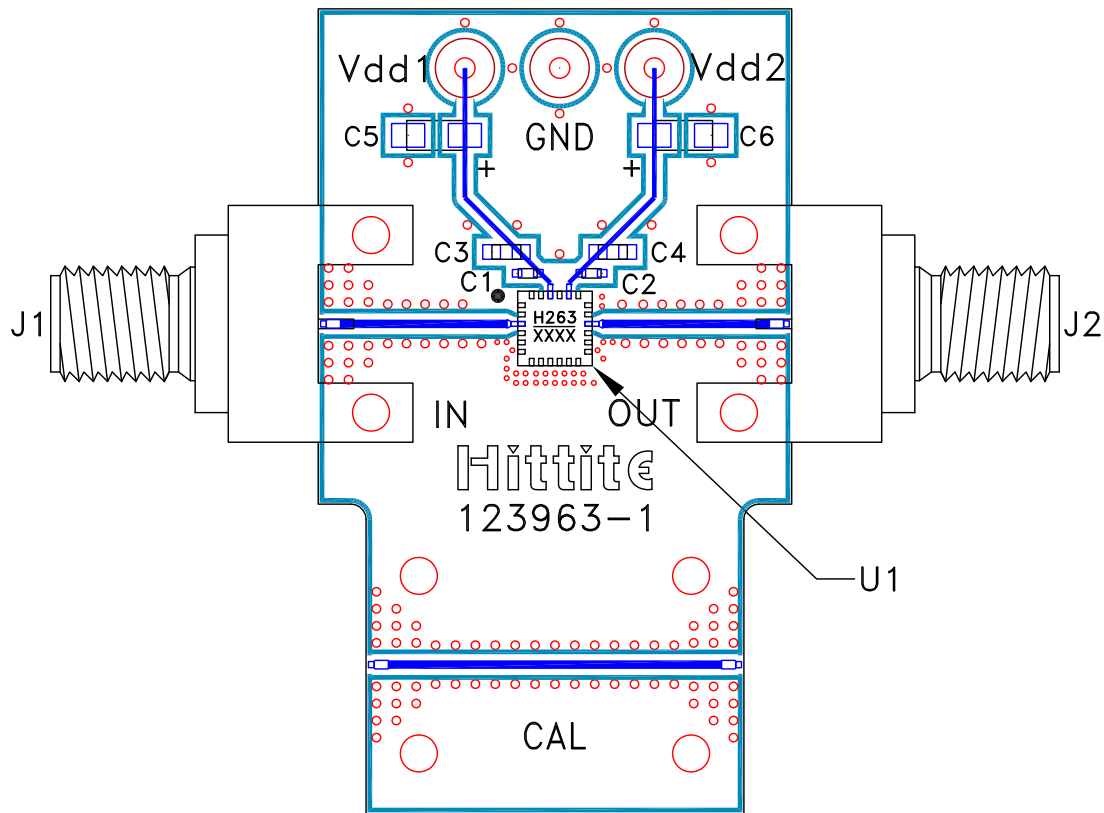
**GaAs MMIC LOW NOISE
AMPLIFIER, 24 - 36 GHz**
Pin Description

Pin Number	Function	Description	Interface Schematic
1, 2, 4 - 7, 12 - 15, 17 - 19, 24	GND	Package bottom has exposed metal paddle that must be connected to RF/DC ground.	
3	RFIN	This pin is AC coupled and matched to 50 Ohm.	
8 - 11, 21, 23	N/C	Not connected.	
16	RFOUT	This pin is AC coupled and matched to 50 Ohm.	
22, 20	Vdd1, Vdd2	Power supply for the 4-stage amplifier. See application circuit for required external components.	

Application Circuit


**GaAs MMIC LOW NOISE
AMPLIFIER, 24 - 36 GHz**

Evaluation PCB



List of Materials for Evaluation PCB 123965 ^[1]

Item	Description
J1, J2	PCB Mount K Connector
J3 - J5	DC Pin
C1, C2	100 pF Capacitor, 0402 Pkg.
C3, C4	10 nF Capacitor, 0603 Pkg.
C5, C6	4.7 μ F Capacitor, Tantalum
U1	HMC263LP4E
PCB ^[2]	123963 Evaluation PCB

[1] Reference this number when ordering complete evaluation PCB

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

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 package bottom 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 board should be mounted to an appropriate heat sink. The evaluation circuit board shown is available from Analog Devices, upon request.