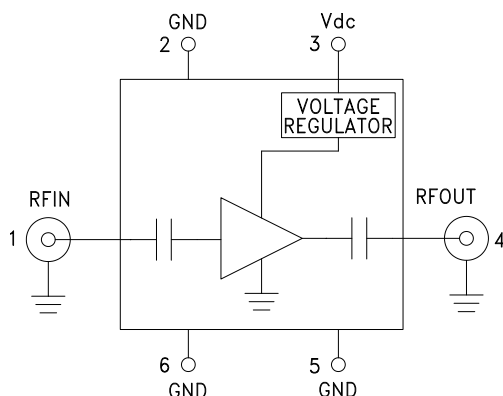


Typical Applications

The HMC-C045 LNA is ideal for:

- Telecom Infrastructure
- Microwave Radio & VSAT
- Military & Space
- Test Instrumentation

Functional Diagram



Features

Noise Figure: 1.2 dB @ 2.4 GHz

Gain: 26 dB

OIP3: +26 dBm

P1dB Output Power: +15.5 dBm

50 Ohm Matched Input/Output

Hermetically Sealed Module

Field Replaceable SMA Connectors

-55 °C to +85 °C Operating Temperature

General Description

The HMC-C045 is a GaAs MMIC pHEMT Low Noise Amplifier in a miniature, hermetic module which operates between 1.8 and 4.2 GHz. This high dynamic range low noise amplifier module provides 26 dB of gain, sub-2 dB noise figure and up to +26 dBm of output IP3 while operating from a single positive supply between +8V and +15V. The amplifier I/Os are internally matched to 50 Ohms and DC blocked for robust performance. The module features removable coaxial connectors which can be detached to allow direct connection of the I/O pins to a microstrip or coplanar circuit.

Electrical Specifications, $T_A = +25^\circ\text{C}$, $V_{dc} = +12\text{V}$

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range		1.8 - 4.2			2.0 - 3.8		GHz
Gain	23	26		23	26		dB
Gain Variation Over Temperature		0.03	0.05		0.03	0.05	dB/ °C
Noise Figure		1.2	2.5		1.2	2.0	dB
Input Return Loss		13			13		dB
Output Return Loss		13			13		dB
Output Power for 1 dB Compression (P1dB)	12.5	15.5		12.5	15.5		dBm
Saturated Output Power (Psat)		17.5			17.5		dBm
Output Third Order Intercept (IP3)		26			26		dBm
Supply Current		105	140		105	140	mA

HMC-C045* PRODUCT PAGE QUICK LINKS

Last Content Update: 11/29/2017

COMPARABLE PARTS

View a parametric search of comparable parts.

DOCUMENTATION

Application Notes

- AN-1363: Meeting Biasing Requirements of Externally Biased RF/Microwave Amplifiers with Active Bias Controllers

Data Sheet

- HMC-C045 Data Sheet

TOOLS AND SIMULATIONS

- HMC-C045 S-Parameter

DESIGN RESOURCES

- HMC-C045 Material Declaration
- PCN-PDN Information
- Quality And Reliability
- Symbols and Footprints

DISCUSSIONS

View all HMC-C045 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.

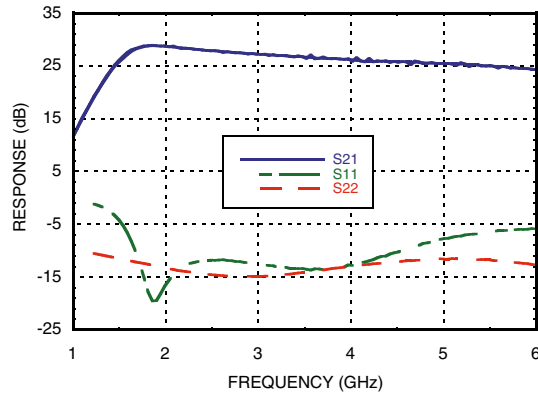
DOCUMENT FEEDBACK

Submit feedback for this data sheet.

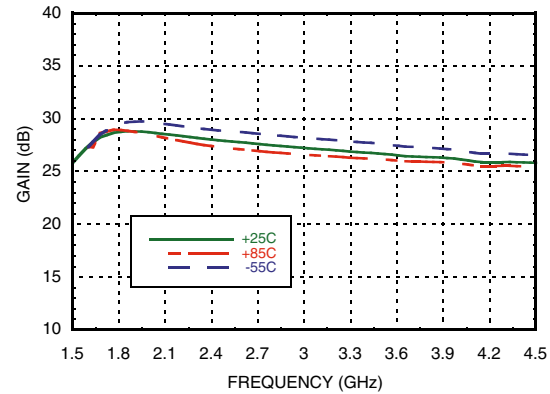


**LOW NOISE AMPLIFIER
MODULE, 1.8 - 4.2 GHz**

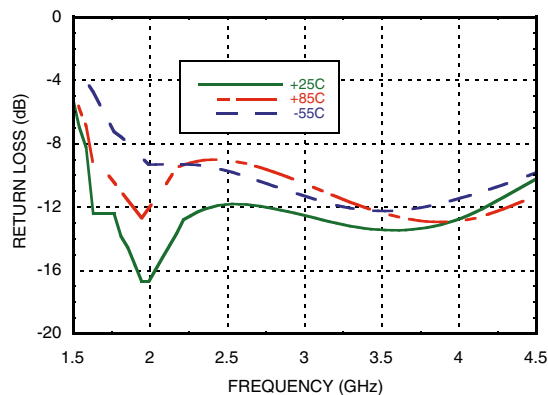
Broadband Gain & Return Loss



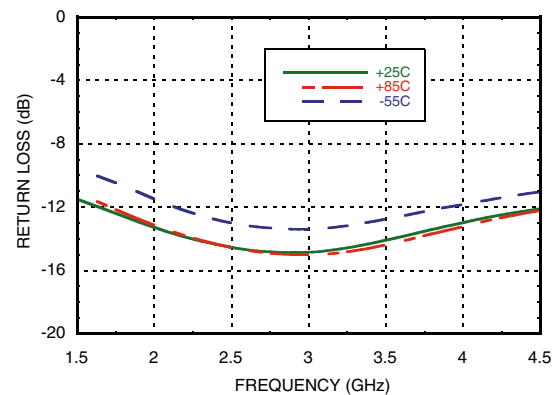
Gain vs. Temperature



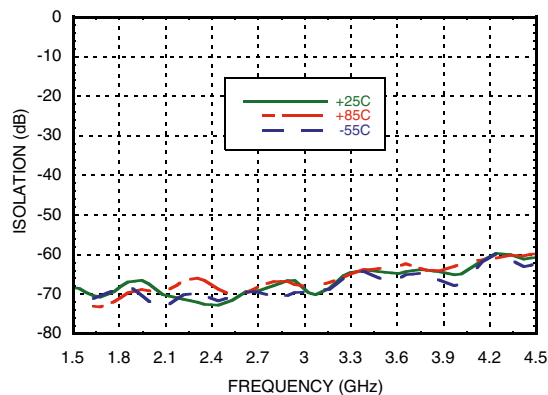
Input Return Loss vs. Temperature



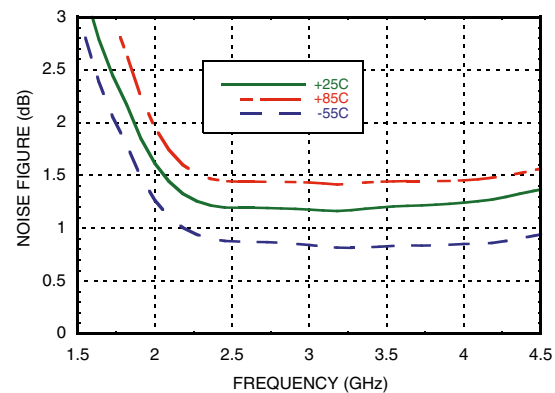
Output Return Loss vs. Temperature



Reverse Isolation vs. Temperature

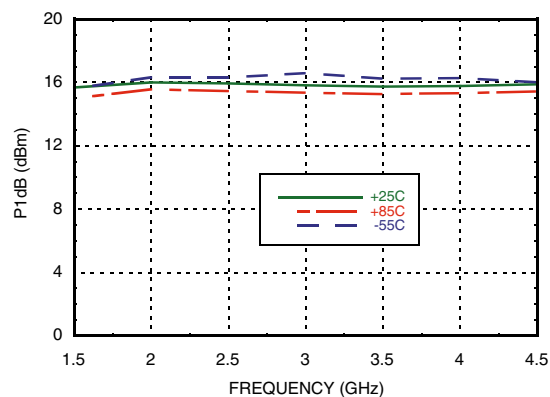
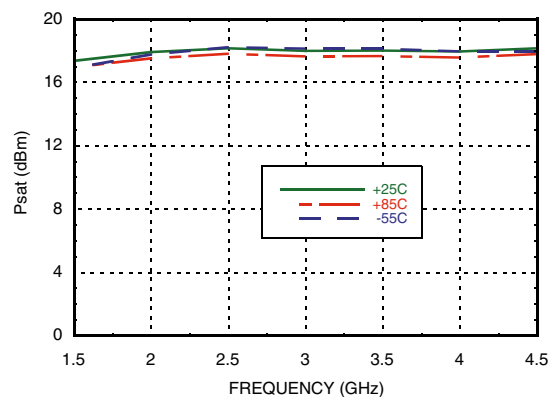
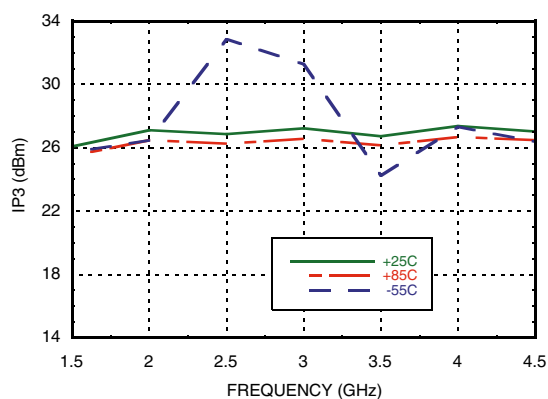


Noise Figure vs. Temperature





LOW NOISE AMPLIFIER MODULE, 1.8 - 4.2 GHz

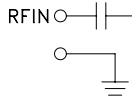

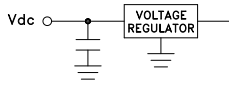
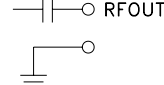
Output P1dB vs. Temperature

Output Psat vs. Temperature

Output IP3 vs. Temperature

Absolute Maximum Ratings

Bias Supply Voltage (Vdc)	+15 Vdc
RF Input Power (RFIN)	+0 dBm
Storage Temperature	-65 to +150 °C
Operating Temperature	-55 to +85 °C



**ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS**

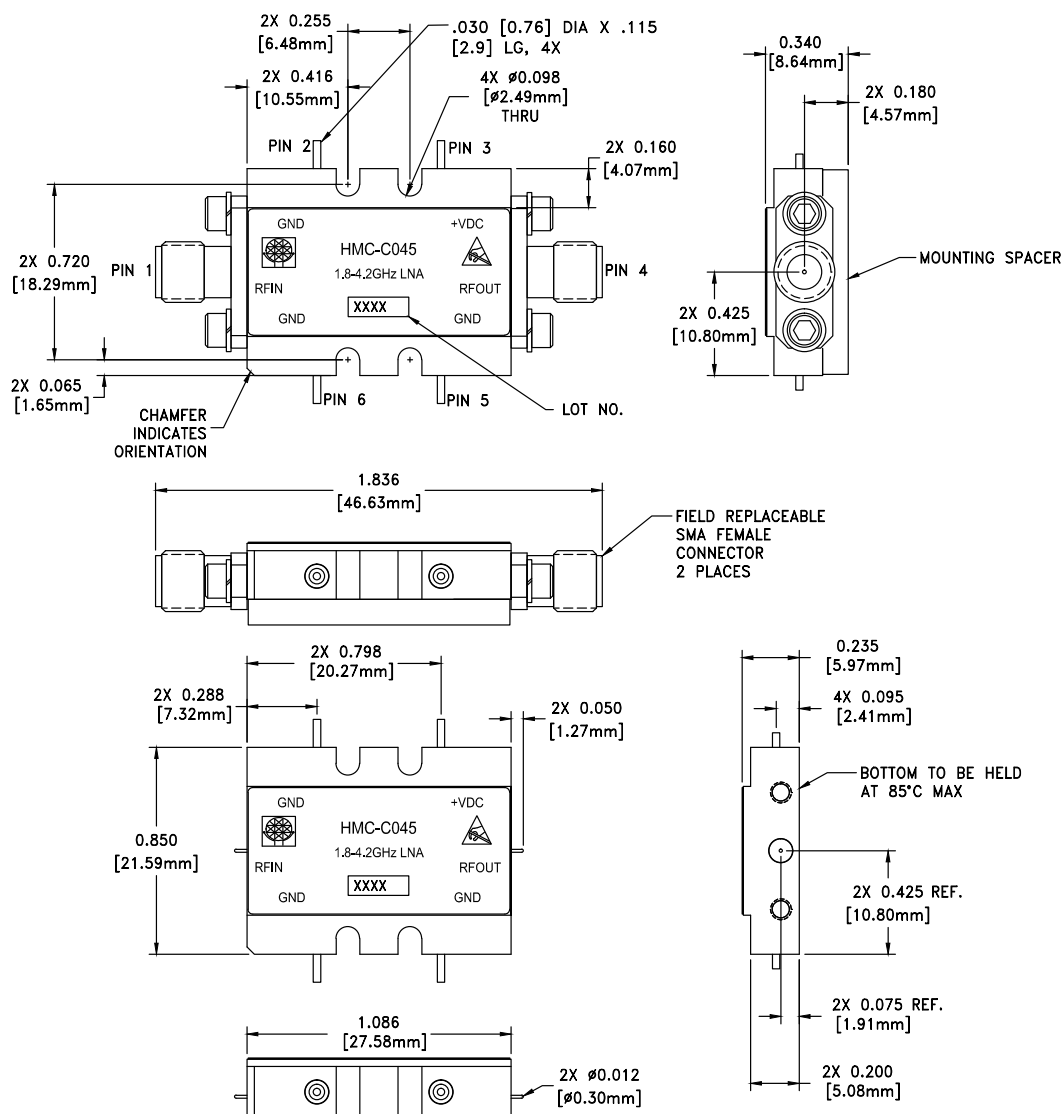

**LOW NOISE AMPLIFIER
MODULE, 1.8 - 4.2 GHz**
Pin Descriptions

Pin Number	Function	Description	Interface Schematic
1	RFIN & RF Ground	RF input connector, coaxial female, field replaceable. This pin is AC coupled and matched to 50 Ohms.	
2, 5, 6	GND	One of these pins must be connected to power supply ground.	
3	Vdc	Power supply voltage for the amplifier.	
4	RFOUT & RF Ground	RF output connector, coaxial female, field replaceable. This pin is AC coupled and matched to 50 Ohms.	



LOW NOISE AMPLIFIER MODULE, 1.8 - 4.2 GHz

Outline Drawing



VIEW SHOWN WITH CONNECTORS AND MOUNTING SPACER REMOVED

Package Information

Package Type	C-10
Package Weight ^[1]	18.7 gms ^[2]
Spacer Weight	3.3 gms ^[2]

[1] Includes the connectors

[2] ± 1 gms Tolerance

NOTES:

1. PACKAGE, LEADS, COVER MATERIAL: KOVAR™
2. FINISH: GOLD PLATE OVER NICKEL PLATE
3. ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]
4. TOLERANCES:
 - 4.1 .XX = ±0.02
 - 4.2 .XXX = ±0.010
5. FIELD REPLACEABLE SMA CONNECTORS

**LOW NOISE AMPLIFIER
MODULE, 1.8 - 4.2 GHz****Notes:**