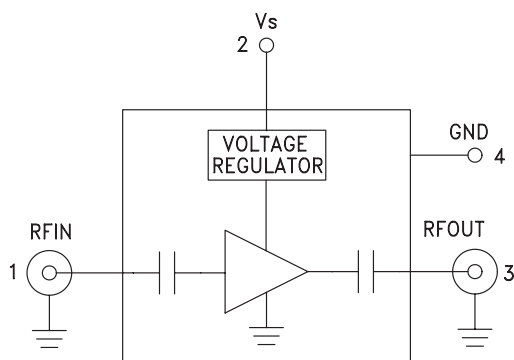


Typical Applications

The HMC-C016 Wideband LNA is ideal for:

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

Functional Diagram



Features

Noise Figure: 2 dB @ 16 GHz

Gain: 22 dB

P1dB Output Power: +14 dBm @ 16 GHz

50 Ohm Matched Input/Output

Regulated Supply

Hermetically Sealed Module

Field Replaceable SMA Connectors

-55 to +85°C Operating Temperature

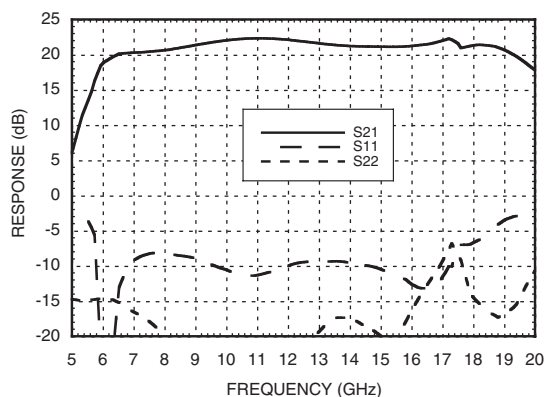
General Description

The HMC-C016 is a GaAs MMIC PHEMT Low Noise Amplifier in a miniature, hermetic module which operates between 7 and 17 GHz. This high dynamic range amplifier provides 22 dB of gain, 2 dB noise figure and up to +14 dBm of output power at 1 dB gain compression while operating from a single positive supply between +8 and +16 volts. The I/Os are internally matched to 50 Ohms and internally DC blocked for robust performance. The module features removable SMA connectors which can be detached to allow direct connection of the I/O pins to a microstrip or coplanar circuit.

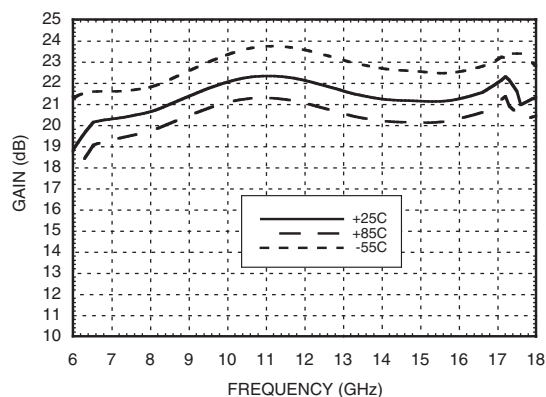
Electrical Specifications, $T_A = +25^\circ\text{C}$, $V_S = +8\text{V}$ to $+16\text{V}$

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	7 - 9			9 - 13			13 - 17			GHz
Gain	17.5	20.5		19	22		18	21		dB
Gain Variation Over Temperature		0.02	0.025		0.02	0.025		0.02	0.025	dB/°C
Noise Figure		3	4.5		2.5	3		2	3.0	dB
Input Return Loss		8			10			10		dB
Output Return Loss		20			25			15		dB
Output Power for 1 dB Compression (P1dB)	8	12		11	14		11	14		dBm
Saturated Output Power (Psat)		17			18			18		dBm
Output Third Order Intercept (IP3)		24			25			25		dBm
Supply Current		93			93			93		mA

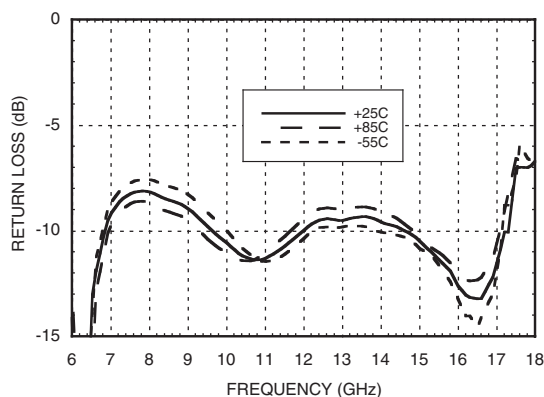
Gain & Return Loss



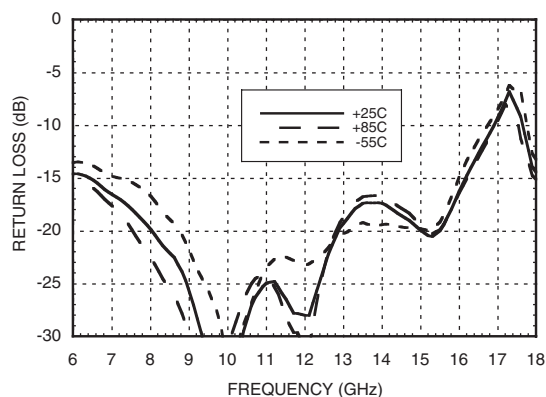
Gain vs. Temperature



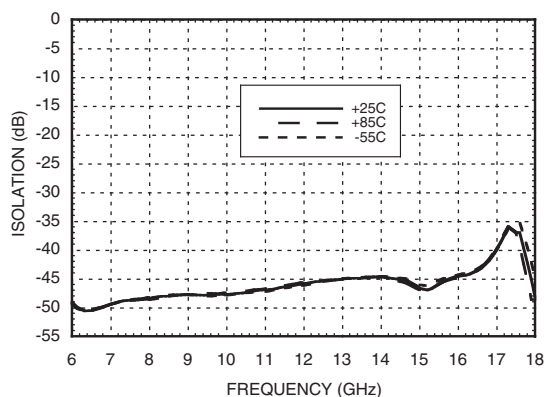
Input Return Loss vs. Temperature



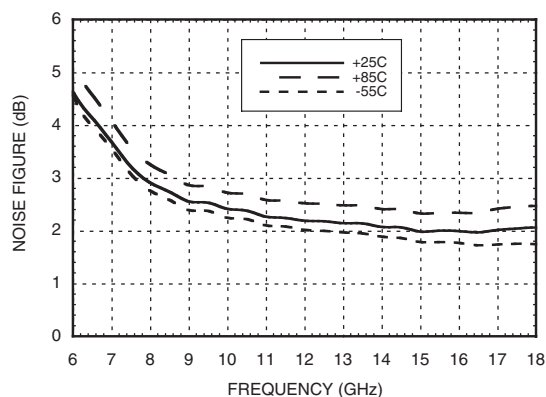
Output Return Loss vs. Temperature



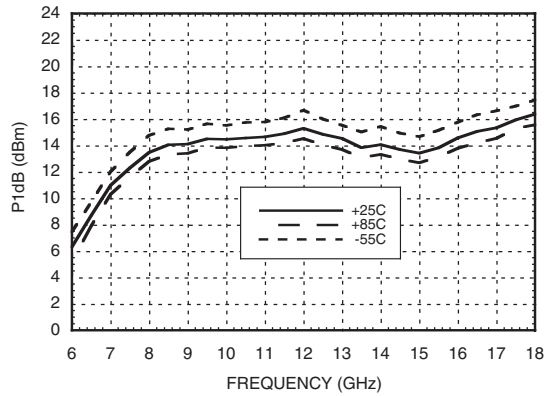
Reverse Isolation vs. Temperature



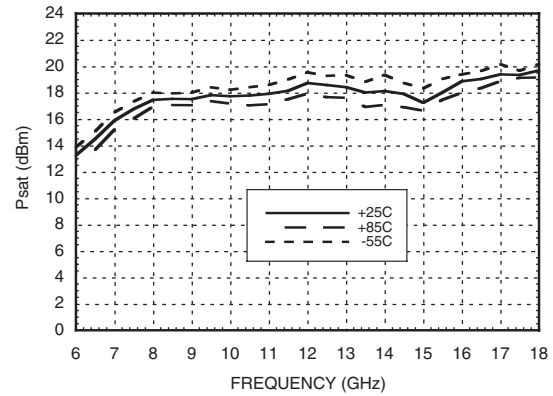
Noise Figure vs. Temperature



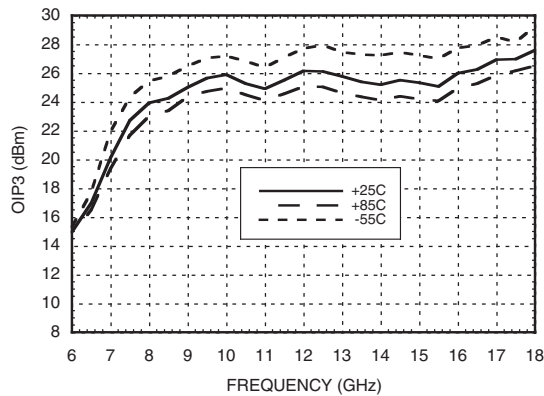
P1dB vs. Temperature



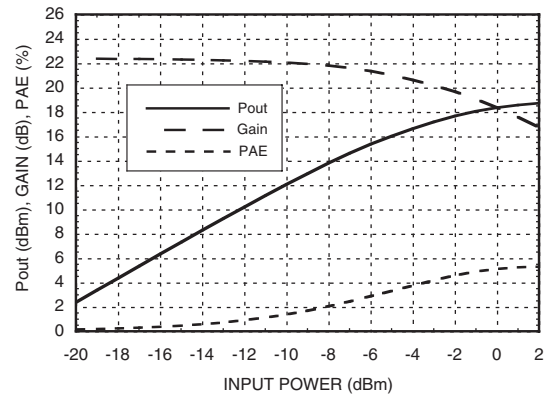
Psat vs. Temperature



Output IP3 vs. Temperature



Power Compression @ 12 GHz



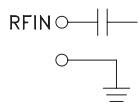
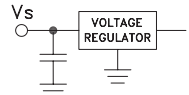
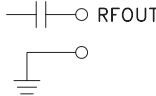
Absolute Maximum Ratings

Bias Supply Voltage (Vs)	-0.3 Vdc to +25 Vdc
RF Input Power (RFin)	+10 dBm
Storage Temperature	-65 to +150 °C
Operating Temperature	-55 to +85 °C

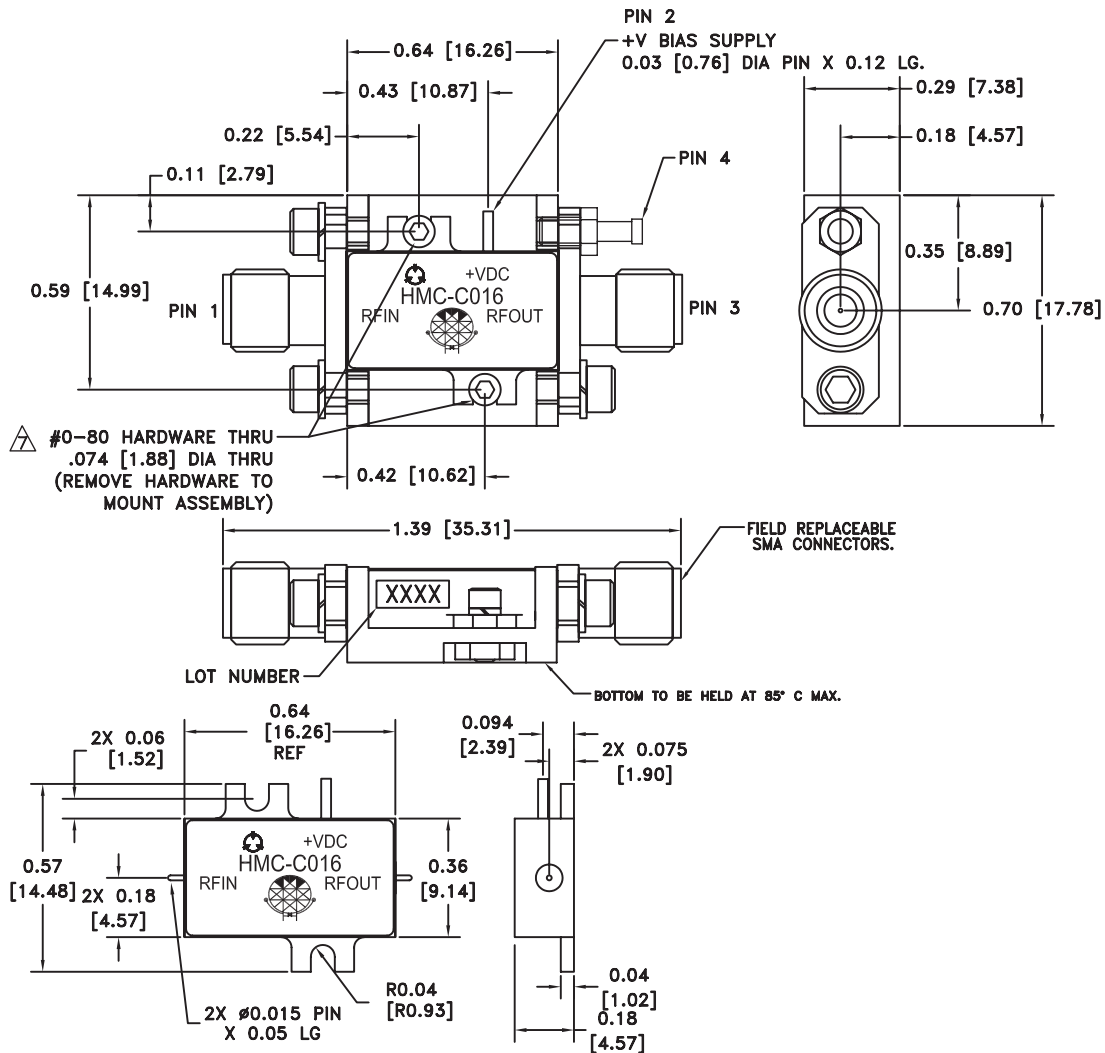


ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

Pin Descriptions

Pin Number	Function	Description	Interface Schematic
1	RFIN & RF Ground	RF input connector, SMA female, field replaceable. This pin is AC coupled and matched to 50 Ohms from 7 - 17 GHz.	
2	Vs	Power supply voltage for the amplifier.	
3	RFOUT & RF Ground	RF output connector, SMA female, field replaceable. This pin is AC coupled and matched to 50 Ohms from 7 - 17 GHz.	
4	GND	Power supply ground.	

Outline Drawing



NOTES:

1. PACKAGE, LEADS, COVER MATERIAL: KOVAR™
2. SPACER MATERIAL: ALUMINUM
3. PLATING: ELECTROLYTIC GOLD 50 MICROINCHES MIN., OVER ELECTROLYTIC NICKEL 75 MICROINCHES MIN.
4. ALL DIMENSIONS ARE IN INCHES [MILLIMETERS].
5. TOLERANCES ±.005 [0.13] UNLESS OTHERWISE SPECIFIED.
6. FIELD REPLACEABLE SMA CONNECTORS.

△ TO MOUNT MODULE TO SYSTEM PLATFORM REPLACE 0-80 HARDWARE WITH DESIRED MOUNTING SCREWS.

Notes: