

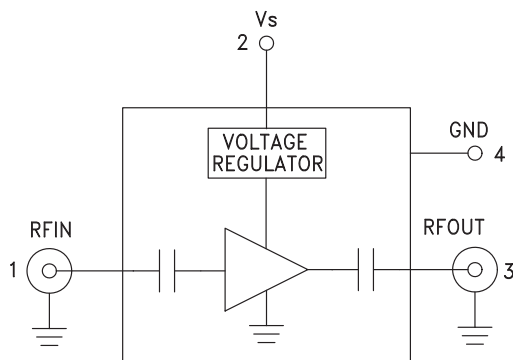


### Typical Applications

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

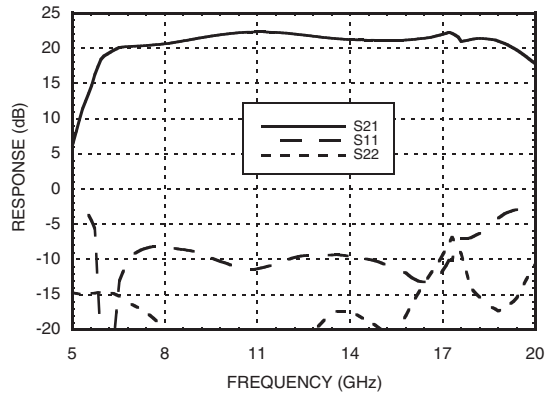
The HMC-C016 is a GaAs MMIC PHEMT Low Noise Amplifier in a miniature, hermetic module which operates between 7 and 17 GHz. This high dynamic range amplifier provides 22 dB of gain, 2 dB noise figure and up to +14 dBm of output power at 1 dB gain compression while operating from a single positive supply 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 $+16\text{V}$

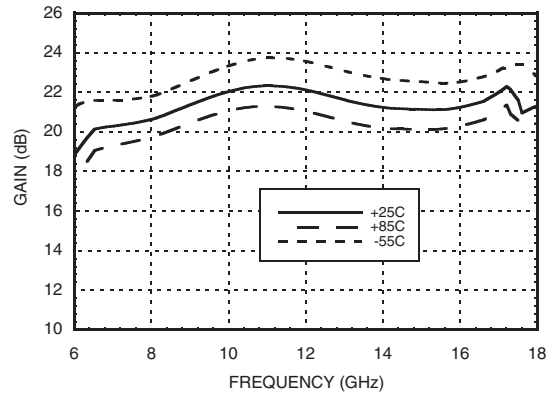
Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	7 - 9			9 - 13			13 - 17			GHz
Gain	17.5	20.5		19	22		18	21		dB
Gain Variation Over Temperature		0.02	0.025		0.02	0.025		0.02	0.025	dB/°C
Noise Figure		3	4.5		2.5	3		2	3.0	dB
Input Return Loss		8			10			10		dB
Output Return 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



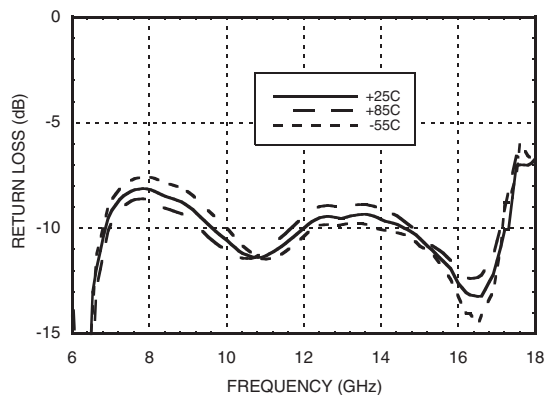
**Gain & Return Loss**



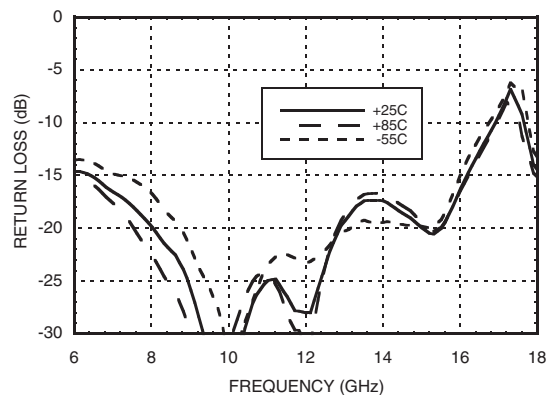
**Gain vs. Temperature**



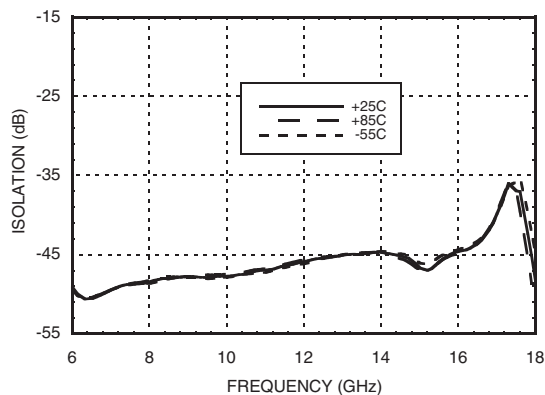
**Input Return Loss vs. Temperature**



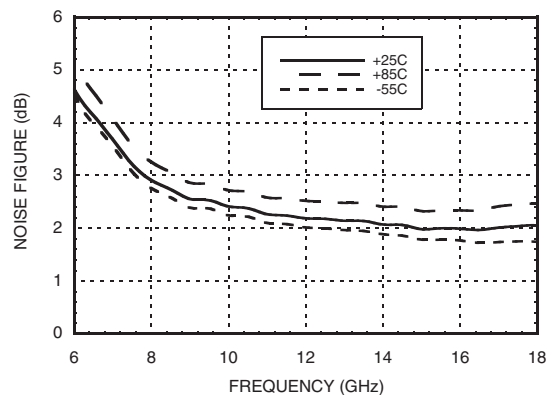
**Output Return Loss vs. Temperature**



**Reverse Isolation vs. Temperature**



**Noise Figure vs. Temperature**

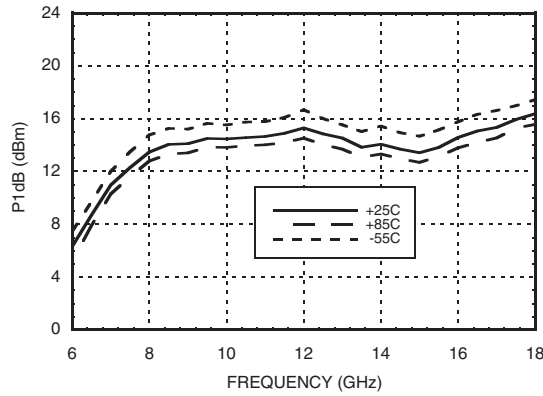


Information furnished by Analog Devices is believed to be accurate and reliable. However, no responsibility is assumed by Analog Devices for its use, nor for any infringements of patents or other rights of third parties that may result from its use. Specifications subject to change without notice. No license is granted by implication or otherwise under any patent or patent rights of Analog Devices. Trademarks and registered trademarks are the property of their respective owners.

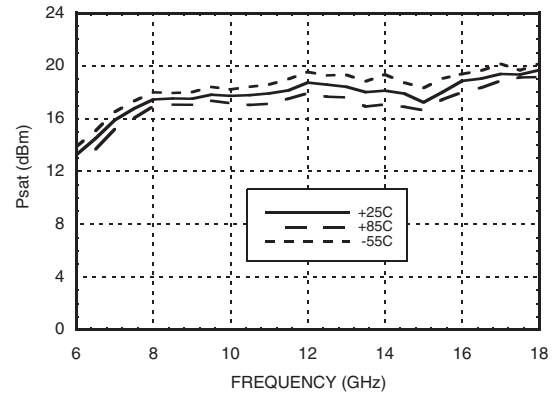
For price, delivery, and to place orders: Analog Devices, Inc., One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106 Phone: 781-329-4700 • Order online at [www.analog.com](http://www.analog.com) Application Support: Phone: 1-800-ANALOG-D



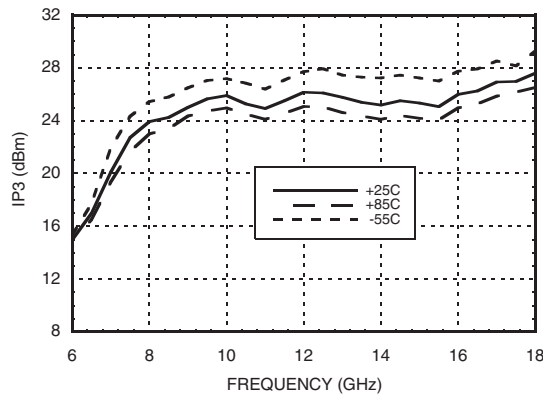
**P1dB vs. Temperature**



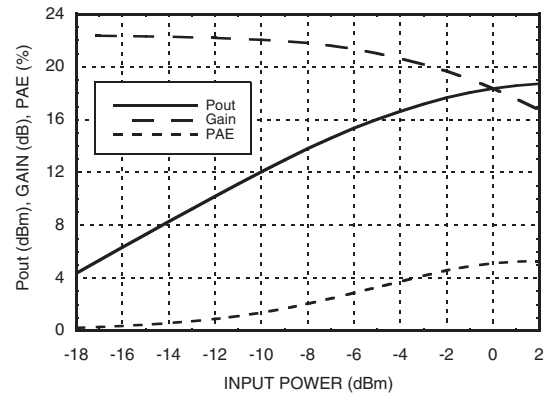
**Psat vs. Temperature**



**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



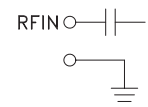
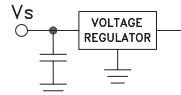
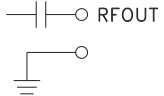

**ELECTROSTATIC SENSITIVE DEVICE  
OBSERVE HANDLING PRECAUTIONS**

Information furnished by Analog Devices is believed to be accurate and reliable. However, no responsibility is assumed by Analog Devices for its use, nor for any infringements of patents or other rights of third parties that may result from its use. Specifications subject to change without notice. No license is granted by implication or otherwise under any patent or patent rights of Analog Devices. Trademarks and registered trademarks are the property of their respective owners.

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](http://www.analog.com) Application Support: Phone: 1-800-ANALOG-D

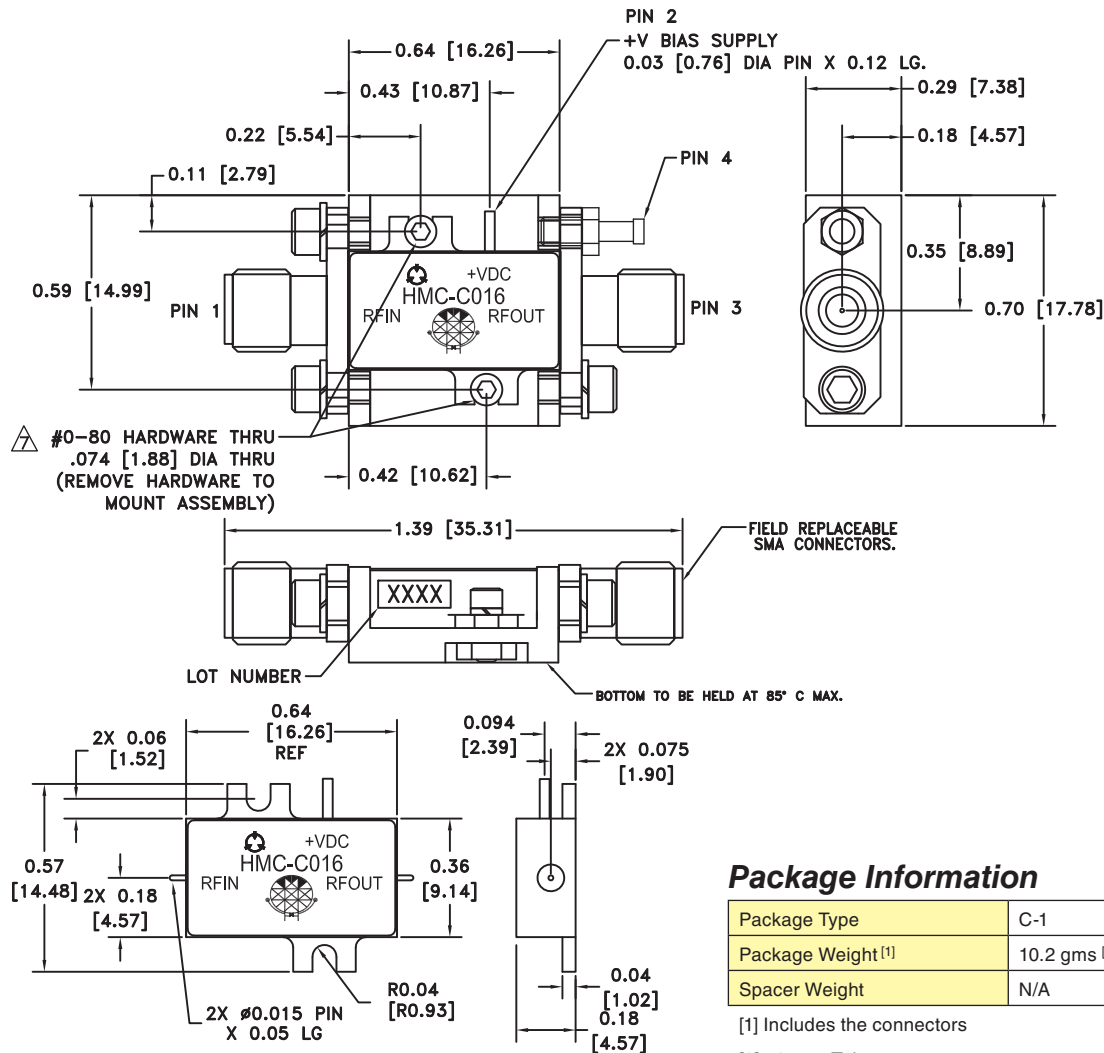


### Pin Descriptions

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.	
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.	
4	GND	Power supply ground.	



**Outline Drawing**



**Package Information**

Package Type	C-1
Package Weight <sup>[1]</sup>	10.2 gms <sup>[2]</sup>
Spacer Weight	N/A

[1] Includes the connectors

[2] ±1 gms Tolerance

**NOTES:**

1. PACKAGE, LEADS, COVER MATERIAL: KOVAR™
2. SPACER MATERIAL: ALUMINUM
3. PLATING: ELECTROLYTIC GOLD 50 MICRONS MIN., OVER ELECTROLYTIC NICKEL 75 MICRONS MIN.
4. ALL DIMENSIONS ARE IN INCHES [MILLIMETERS].
5. TOLERANCES ±.005 [0.13] UNLESS OTHERWISE SPECIFIED.
6. FIELD REPLACEABLE SMA CONNECTORS.  
TENSOLITE 5602 - 5CCSF OR EQUIVALENT.

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

**Notes:**

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Sub-GHz Modules](#) category:*

*Click to view products by [Analog Devices](#) manufacturer:*

Other Similar products are found below :

[HMC-C024](#) [nRF24L01P-MODULE-SMA](#) [CMD-KEY2-418-CRE](#) [V640-A90](#) [SM1231E868](#) [HMC-C582](#) [SM-MN-00-HF-RC](#) [HMC-C031](#)  
[LoRa Node Kit\(US\)](#) [Sierra HL7588 4G KIT\(US\)](#) [WISE-4610-S672NA](#) [EC21AUFA-MINIPCIE](#) [EC21EUGA-MINIPCIE](#) [CS-EASYSWITCH-](#)  
[25](#) [EC21JFB-MINIPCIE](#) [DL-RFM96-433M](#) [Ra-07H-V1.1](#) [Ra-07](#) [Ra-01SH](#) [Ra-01S-T](#) [Ra-01SH-T](#) [CMD-HHCP-418-MD](#) [CMD-HHLR-418-](#)  
[MD](#) [2095000000200](#) [XB9X-DMRS-031](#) [20911051101](#) [COM-13909](#) [HMC-C033](#) [COM-13910](#) [WRL-14498](#) [SX1276RF1KAS](#) [HMC-C011](#)  
[HMC-C014](#) [HMC-C050](#) [HMC-C001](#) [HMC-C006](#) [HMC-C030](#) [HMC-C021](#) [HMC-C041](#) [HMC-C042](#) [HMC-C048](#) [HMC-C051](#) [HMC-C072](#)  
[HMC-C088](#) [702-W](#) [HUM-900-PRC](#) [ISP4520-EU-ST](#) [ZCTR-06](#) [RXM-433-LR](#) [TXM-433-LC](#)