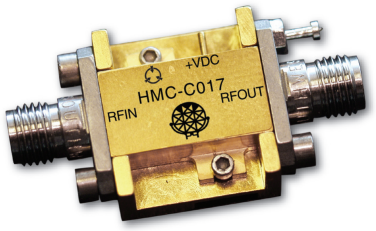
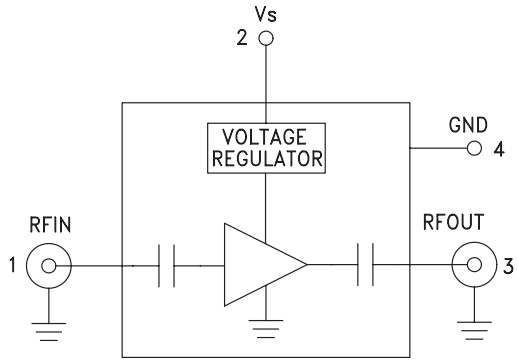


Typical Applications

The HMC-C017 Wideband LNA is ideal for:

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

Functional Diagram



Features

Noise Figure: 2.75 dB

Gain: 18 dB

P1dB Output Power: +14 dBm

50 Ohm Matched Input/Output

Regulated Supply: Vs = +8V to +16V

Hermetically Sealed Module

Field Replaceable 2.92 mm Connectors

-55 to +85˚C Operating Temperature

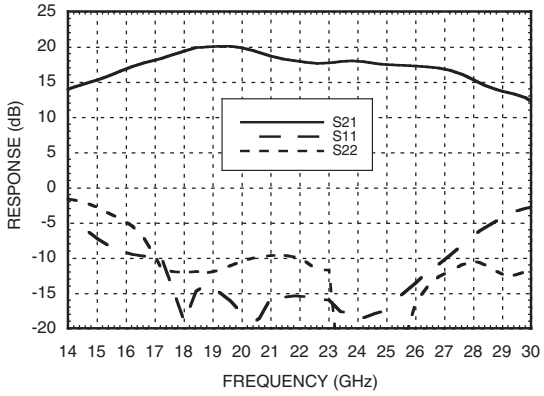
General Description

The HMC-C017 is a GaAs MMIC PHEMT Low Noise Amplifier in a miniature, hermetic module which operates between 17 and 27 GHz. This high dynamic range amplifier module provides 18 dB of gain, 2.75 dB noise figure and up to +25 dBm of output IP3 while the internal voltage regulator accepts a supply voltage from +8V to +16V. The wideband amplifier I/Os are internally matched to 50 Ohms and are internally 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.

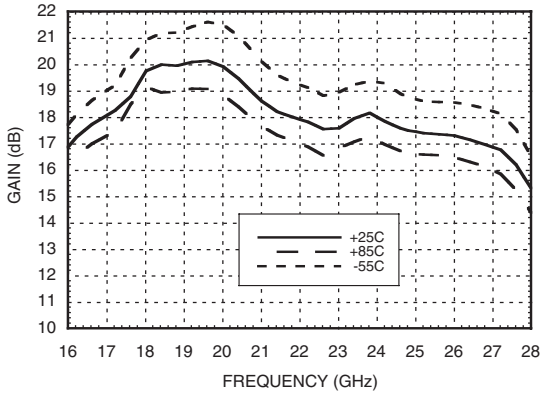
Electrical Specifications, T_A = +25° C, Vs= +8V to +16V

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range		17 - 22			22 - 27		GHz
Gain	16	19		14.5	17.5		dB
Gain Variation Over Temperature		0.015	0.025		0.015	0.025	dB/ °C
Noise Figure		2.75	3.25		3.0	4.0	dB
Input Return Loss		14			14		dB
Output Return Loss		10			13		dB
Output Power for 1 dB Compression (P1dB)	10.5	13.5		12	15		dBm
Saturated Output Power (Psat)		18			18.5		dBm
Output Third Order Intercept (IP3)		24			26		dBm
Supply Current		96			96		mA

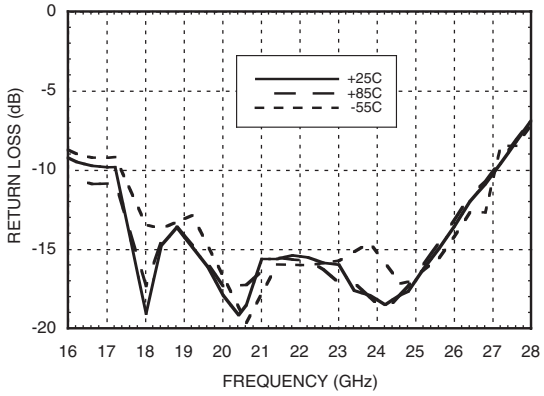
Gain & Return Loss



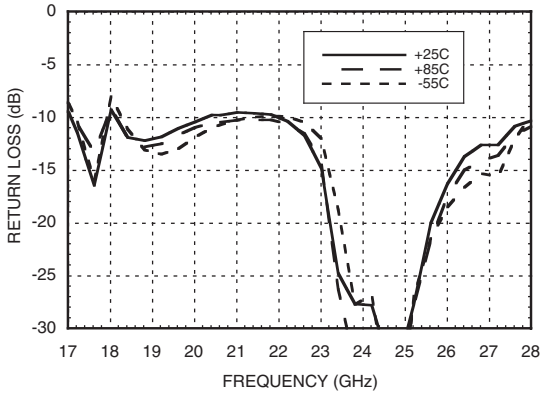
Gain vs. Temperature



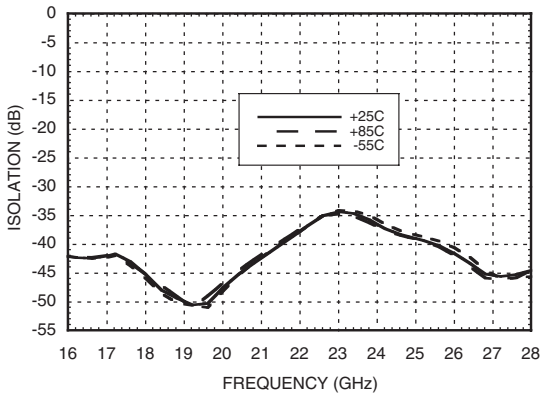
Input Return Loss vs. Temperature



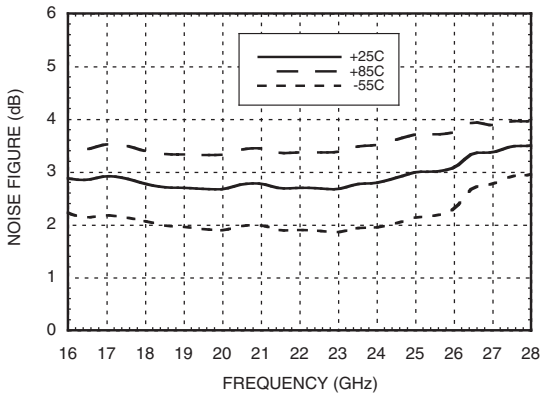
Output Return Loss vs. Temperature



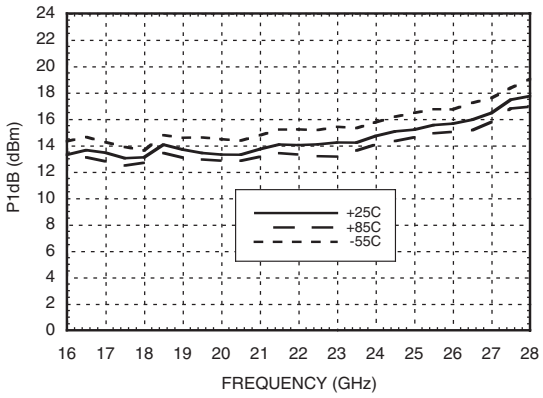
Reverse Isolation vs. Temperature



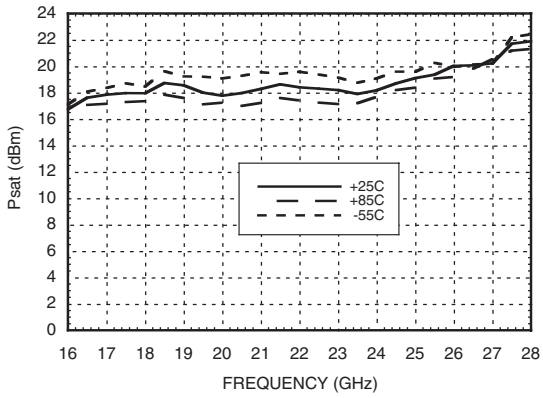
Noise Figure vs. Temperature



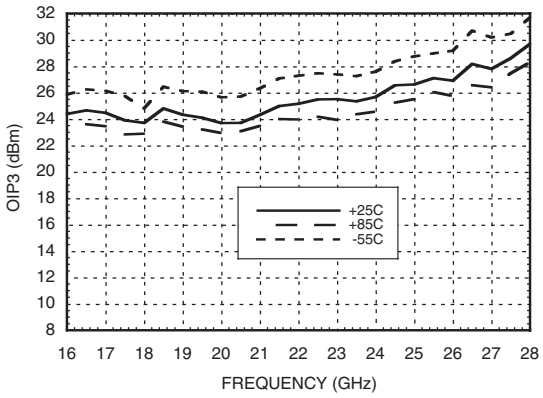
P1dB vs. Temperature



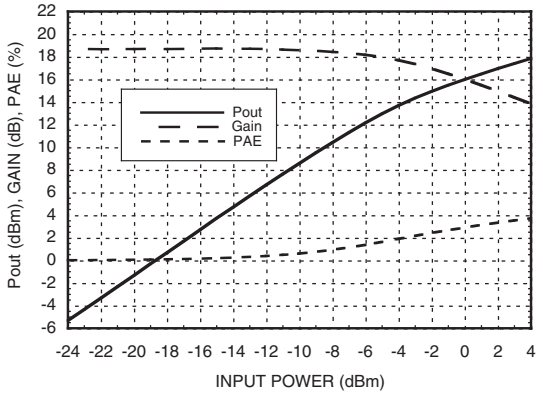
Psat vs. Temperature



Output IP3 vs. Temperature



Power Compression @ 21 GHz

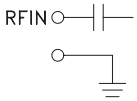
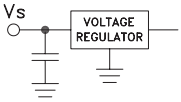
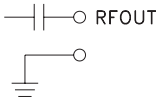


Absolute Maximum Ratings

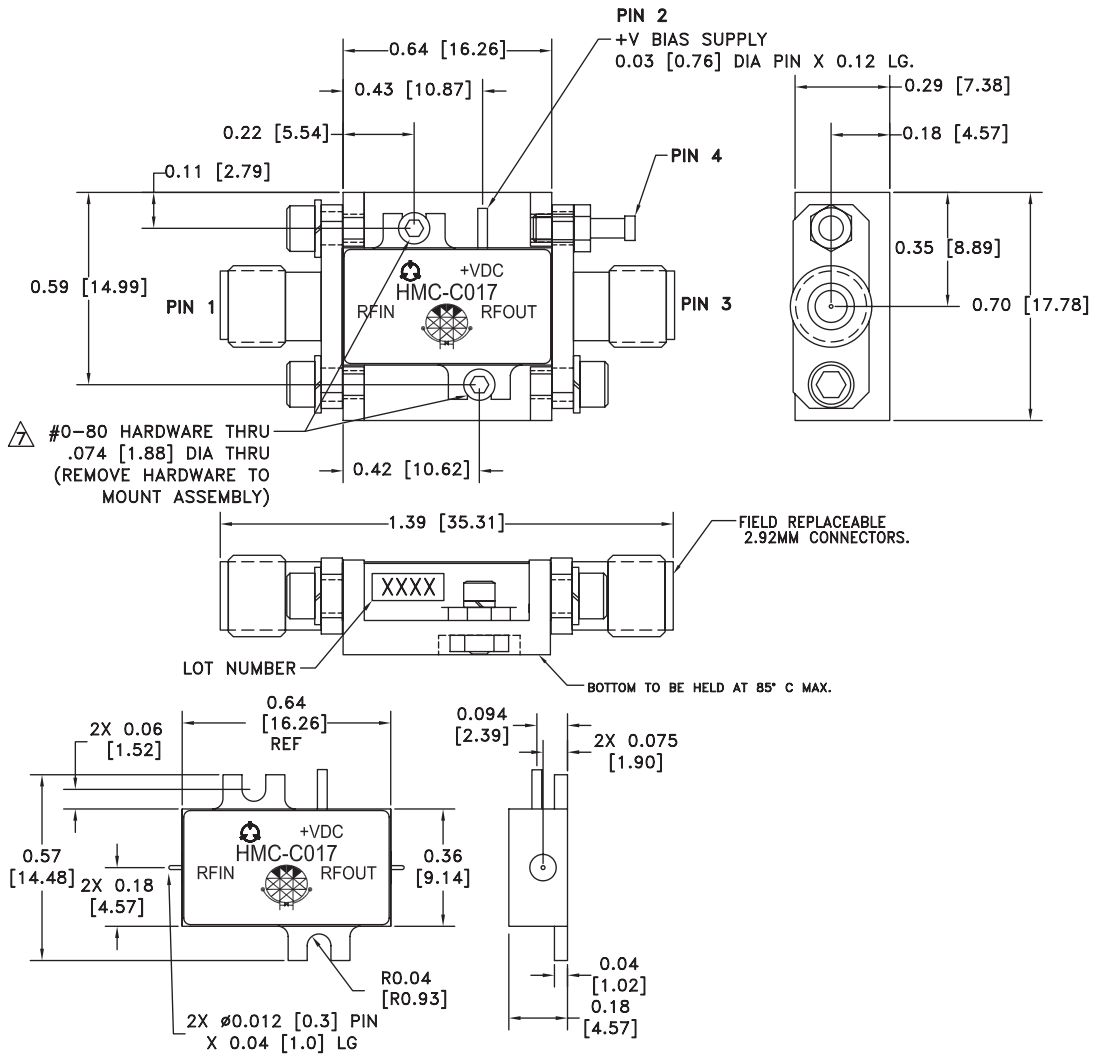
Bias Supply Voltage (Vs)	-0.3 Vdc to +25 Vdc
RF Input Power (RFin)	+10 dBm
Storage Temperature	-65 to +150 °C
Operating Temperature	-55 to +85 °C

ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

Pin Descriptions

Pin Number	Function	Description	Interface Schematic
1	RFIN & RF Ground	RF input connector, coaxial female, field replaceable. This pin is AC coupled and matched to 50 Ohms from 17 - 27 GHz.	
2	Vs	Power supply voltage for the amplifier.	
3	RFOUT & RF Ground	RF output connector, coaxial female, field replaceable. This pin is AC coupled and matched to 50 Ohms from 17 - 27 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 2.92mm CONNECTORS. TENSOLITE 231CCSF OR EQUIVALENT.

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

Notes: