HMC-C036

v04.0310

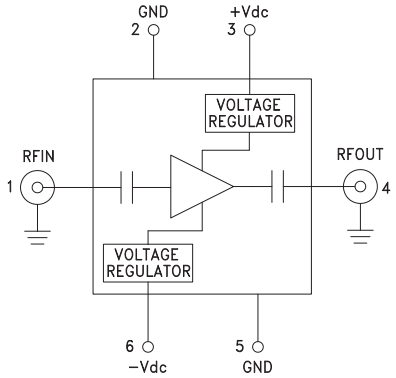
WIDEBAND POWER AMPLIFIER MODULE, 0.01 - 15 GHz

Typical Applications

The HMC-C036 Wideband PA is ideal for:

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

Functional Diagram



Features

Gain: 12 dB

P1dB Output Power: +28 dBm

Regulated Supply and Bias Sequencing

Hermetically Sealed Module

Field Replaceable SMA connectors

0 °C to +85 °C Operating Temperature

General Description

The HMC-C036 is a GaAs MMIC PHEMT Power Amplifier in a miniature, hermetic module with replaceable SMA connectors which operates between 0.01 GHz and 15 GHz. The amplifier provides 12 dB of gain, up to +36 dBm output IP3 and up to +28 dBm of output power at 1 dB gain compression. Gain flatness is excellent from 2 - 12 GHz making the HMC-C036 ideal for EW, ECM RADAR, Fiber Optic and test equipment applications. The wideband amplifier I/Os are internally matched to 50 Ohms and are DC blocked. Integrated voltage regulators allow for flexible biasing of both the negative and positive supply pins, while internal bias sequencing circuitry assures robust operation.

Electrical Specifications, T_A = +25° C, +Vdc = +11V to +16V, -Vdc = -3V to -12V

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range		0.5 - 6.0			6.0 - 12.0			12.0 - 15.0		GHz
Gain	9.5	12.5		9	12		8	11		dB
Gain Flatness		±0.3			±0.3			±0.6		dB
Gain Variation Over Temperature		0.02			0.02			0.02		dB/ °C
Noise Figure		4.5			4.5			7.0		dB
Input Return Loss		22			11			4		dB
Output Return Loss		13			12			10		dB
Output Power for 1 dB Compression (P1dB)	25	28		23	26		23	26		dBm
Saturated Output Power (Psat)		29			27			28		dBm
Output Third Order Intercept (IP3)		36			34			32		dBm
Positive Supply Current (+IDC)		360			360			360		mA
Negative Supply Current (-IDC)		-5.5			-5.5			-5.5		mA

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Phone: 781-329-4700 • Order online at www.analog.com
Application Support: Phone: 1-800-ANALOG-D

HMC-C036* PRODUCT PAGE QUICK LINKS

Last Content Update: 02/23/2017

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-C036 Data Sheet

TOOLS AND SIMULATIONS

- HMC-C036 S-Parameter

DESIGN RESOURCES

- HMC-C036 Material Declaration
- PCN-PDN Information
- Quality And Reliability
- Symbols and Footprints

DISCUSSIONS

View all HMC-C036 EngineerZone Discussions.

SAMPLE AND BUY

Visit the product page to see pricing options.

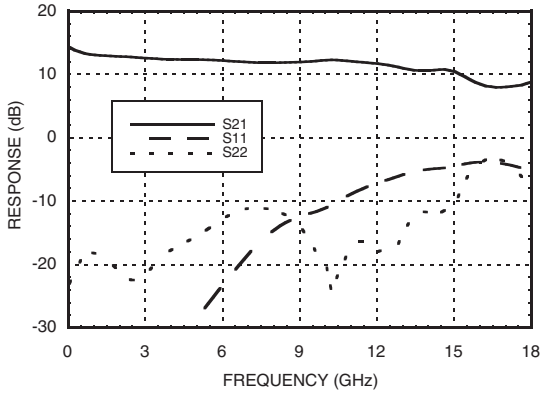
TECHNICAL SUPPORT

Submit a technical question or find your regional support number.

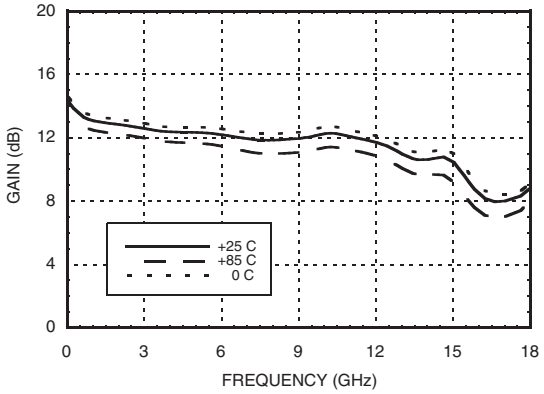
DOCUMENT FEEDBACK

Submit feedback for this data sheet.

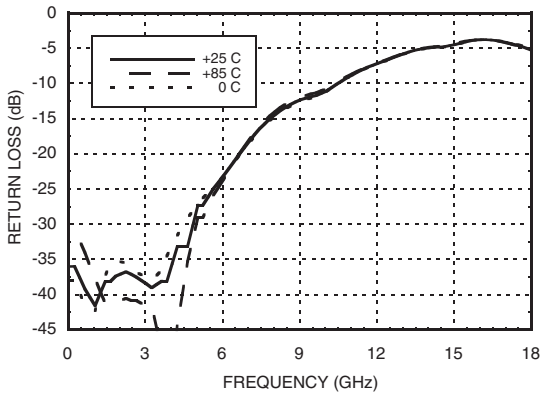
Gain & Return Loss



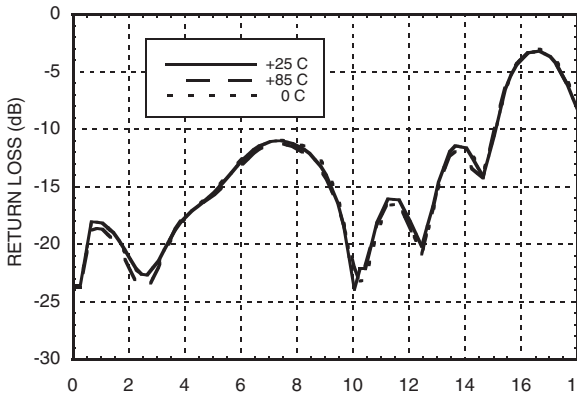
Gain vs. Temperature



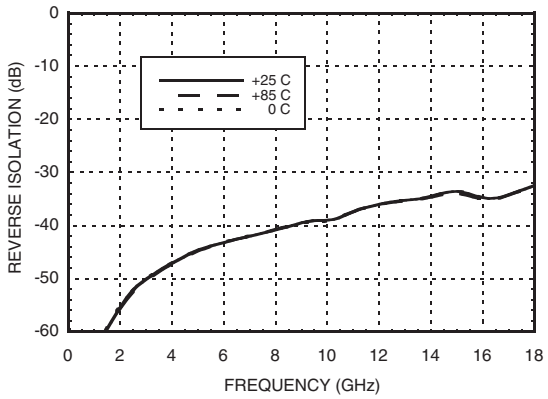
Input Return Loss vs. Temperature



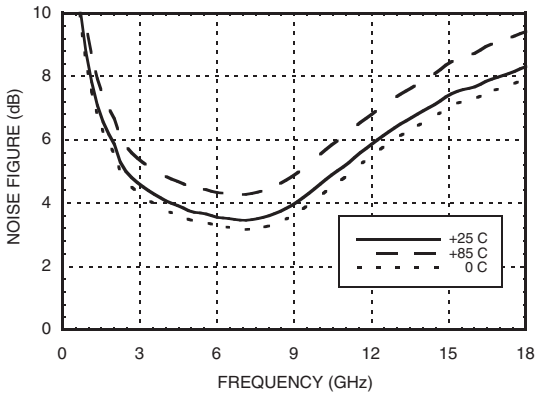
Output Return Loss vs. Temperature



Reverse Isolation vs. Temperature



Noise Figure vs. Temperature



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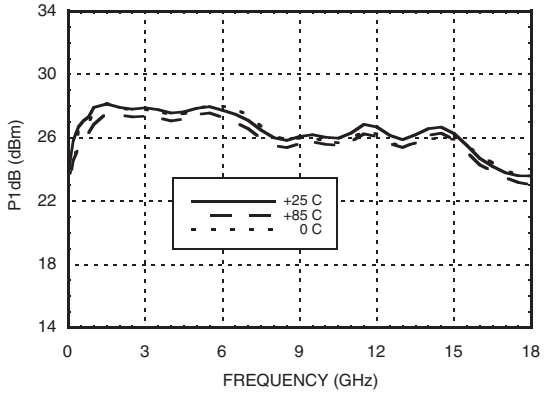
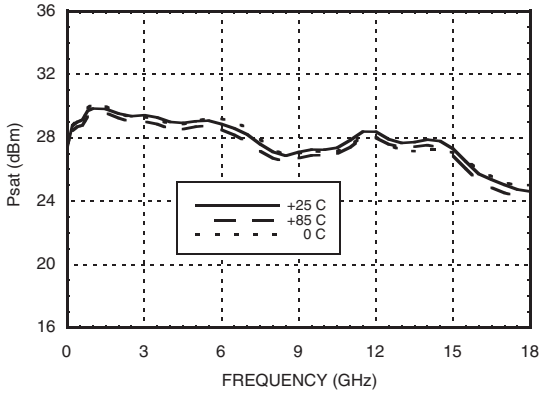
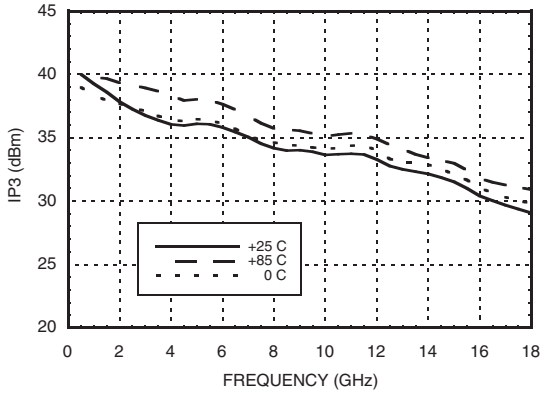
P1dB vs. Temperature



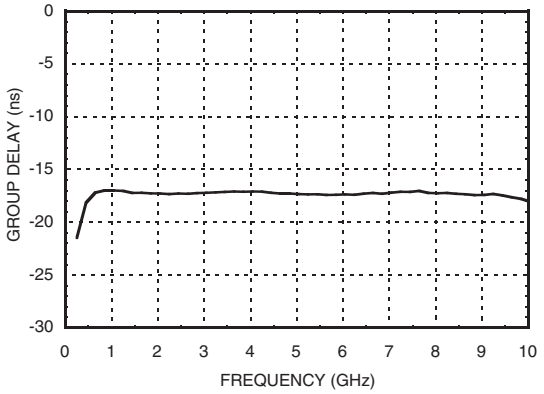
Psat vs. Temperature



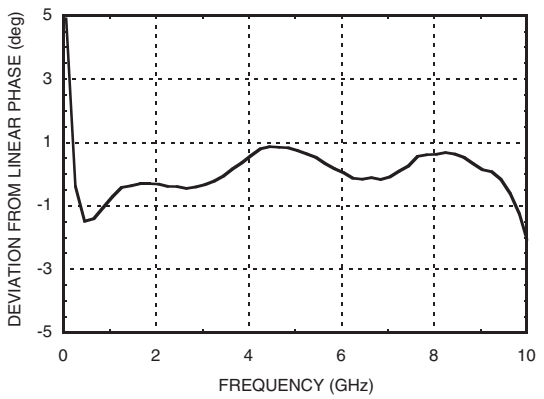
Output IP3 vs. Temperature



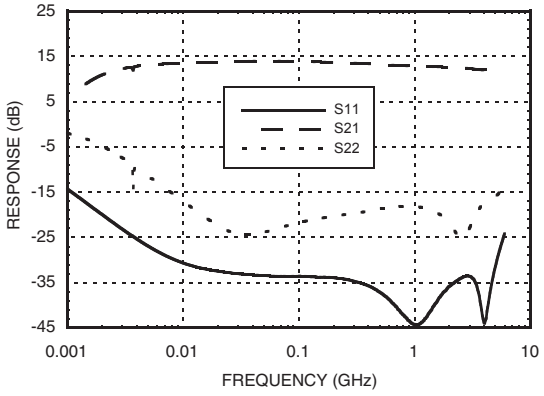
Group Delay



Deviation from Linear Phase



Low Frequency Gain & Return Loss



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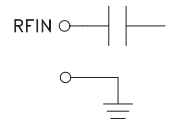
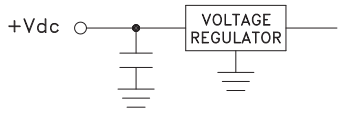
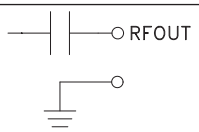
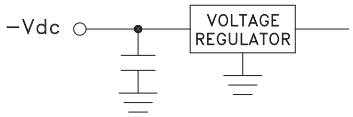
Absolute Maximum Ratings

Positive Bias Supply Voltage (+Vdc)	+17V Max
Negative Bias Supply (-Vdc)	-16V Min.
Maximum RF Input Power	
Peak	24 dBm
CW @ 0.01 - 6 GHz	22 dBm
CW @ 6 - 12 GHz	21 dBm
CW @ 12 - 20 GHz	18 dBm
Storage Temperature	-65 to +150 °C
Operating Temperature	0 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.	
2, 5	GND	Power supply ground.	
3	+Vdc	Positive power supply voltage for the amplifier.	
4	RFOUT & RF Ground	RF output connector, SMA female. This pin is AC coupled and matched to 50 Ohms.	
6	-Vdc	Negative power supply voltage for the amplifier	

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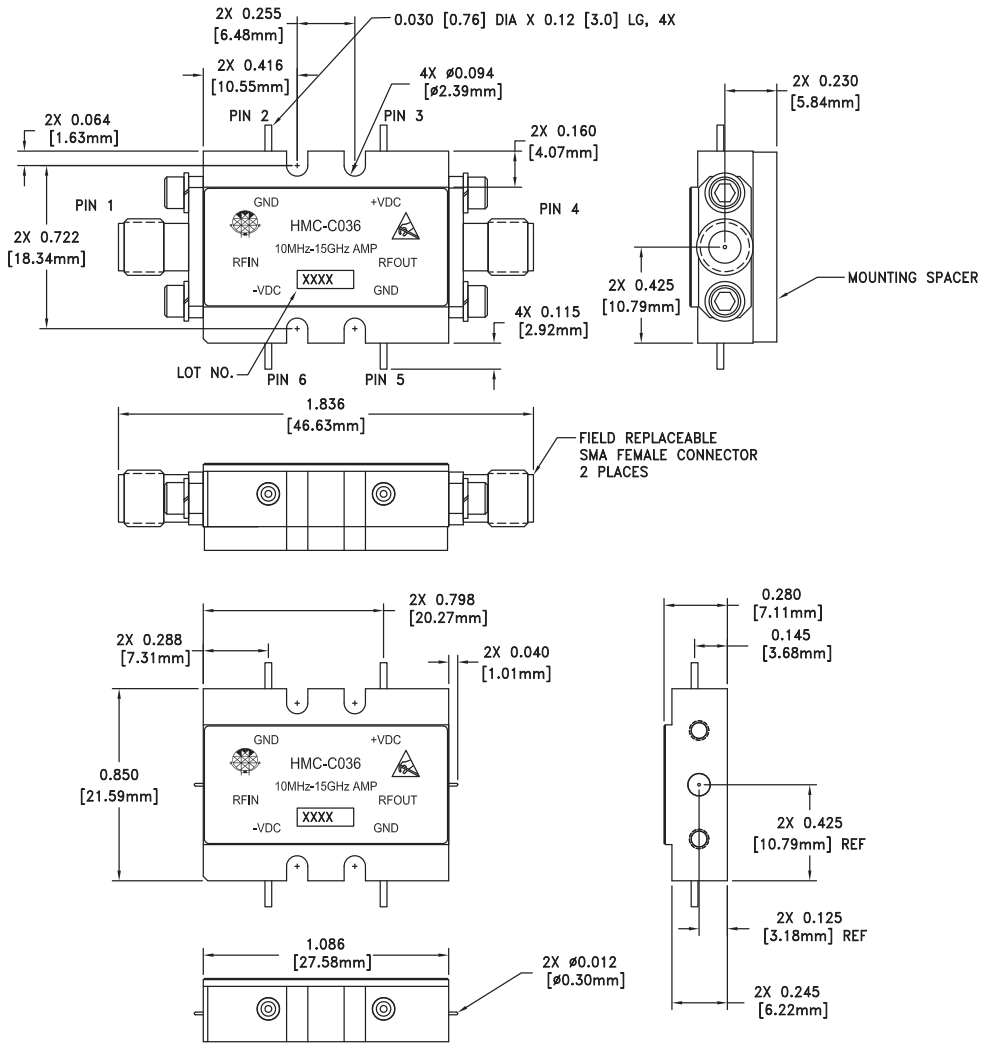
Outline Drawing



VIEW SHOWN WITH CONNECTORS REMOVED

Package Information

Package Type	C-10B
Package Weight [1]	23.1 gms [2]
Spacer Weight	N/A

[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 2.92mm CONNECTORS
   TENSOLITE 231CCSF OR EQUIVALENT

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