

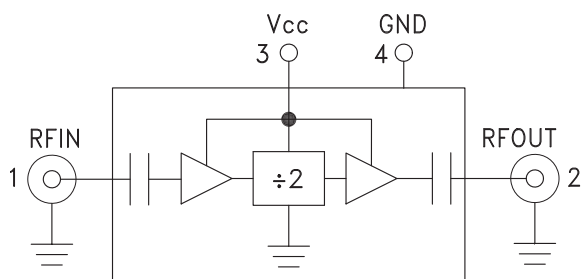


Typical Applications

Prescaler for 0.5 to 18 GHz PLL Applications:

- Point-to-Point / Multi-Point Radios
- VSAT Radios
- Fiber Optic
- Test Equipment
- Military & Space

Functional Diagram



Features

- Ultra Low SSB Phase Noise: -150 dBc/Hz
- Very Wide Bandwidth
- Output Power: -4 dBm
- Single DC Supply: +5V
- Hermetically Sealed Module
- Field Replaceable SMA Connectors
- 55 to +85 °C Operating Temperature

General Description

The HMC-C005 is a low noise Divide-by-2 Static Divider utilizing InGaP GaAs HBT technology packaged in a miniature, hermetic module with replaceable SMA connectors. This device operates from 0.5 to 18 GHz input frequency from a single +5V DC supply. The low additive SSB phase noise of -150 dBc/Hz at 100 kHz offset helps the user maintain excellent system noise performance.

Electrical Specifications, $T_A = +25^\circ\text{C}$, 50 Ohm System, $V_{CC} = +5V$

Parameter	Conditions	Min.	Typ.	Max.	Units
Maximum Input Frequency		18	19		GHz
Minimum Input Frequency	Sine Wave Input			0.5	GHz
Input Power Range	Fin = 2 to 4 GHz	-15	-10	+10	dBm
	Fin = 4 to 14 GHz	-20	-15	+10	dBm
	Fin = 14 to 16 GHz	-20	-15	+5	dBm
	Fin = 16 to 18 GHz	-15	-10	0	dBm
Output Power	Fin = 0.5 to 18 GHz	-7	-4		dBm
Reverse Leakage	Fin = 0.5 to 18 GHz		55		dB
SSB Phase Noise (100 kHz offset)	Pin = 0 dBm, Fin = 4.8 GHz		-150		dBc/Hz
Output Transition Time	Pin = 0 dBm, Fout = 882 MHz		100		ps
Supply Current (Icc)			75		mA

HMC-C005* PRODUCT PAGE QUICK LINKS

Last Content Update: 02/23/2017

COMPARABLE PARTS

View a parametric search of comparable parts.

DOCUMENTATION

Data Sheet

- HMC-C005 Data Sheet

REFERENCE MATERIALS

Technical Articles

- Wideband Amplifier and Prescaler Modules Cover DC to 20 GHz

DESIGN RESOURCES

- HMC-C005 Material Declaration
- PCN-PDN Information
- Quality And Reliability
- Symbols and Footprints

DISCUSSIONS

View all HMC-C005 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.

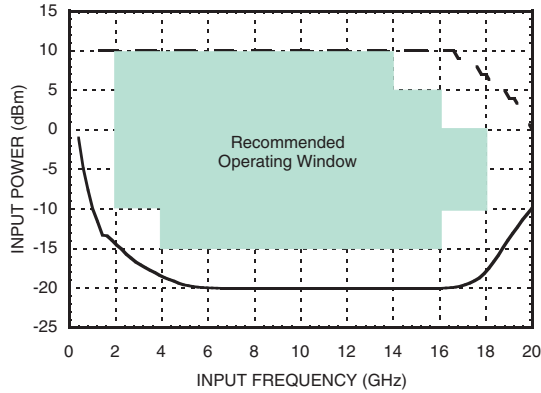
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Submit feedback for this data sheet.

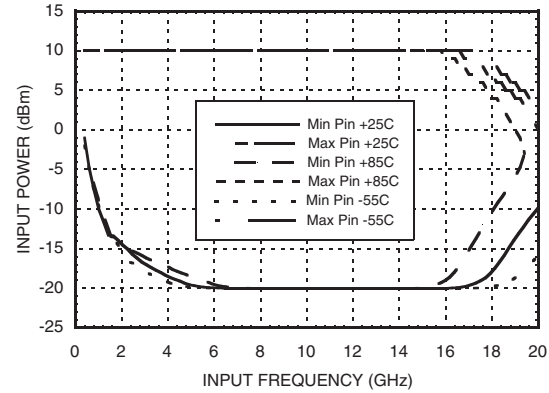
**DIVIDE-BY-2 PRESCALER
MODULE, 0.5 - 18 GHz**

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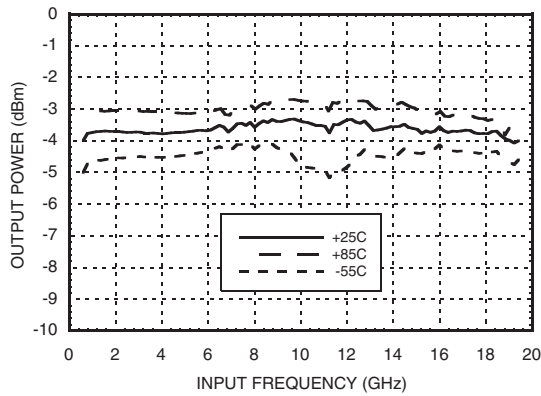
Input Sensitivity Window, $T = 25\text{ }^{\circ}\text{C}$



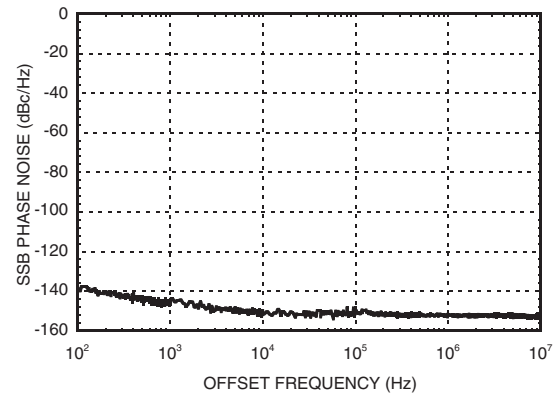
Input Sensitivity vs. Temperature



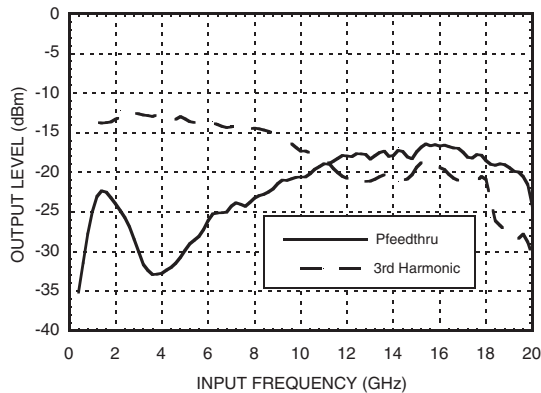
Output Power vs. Temperature



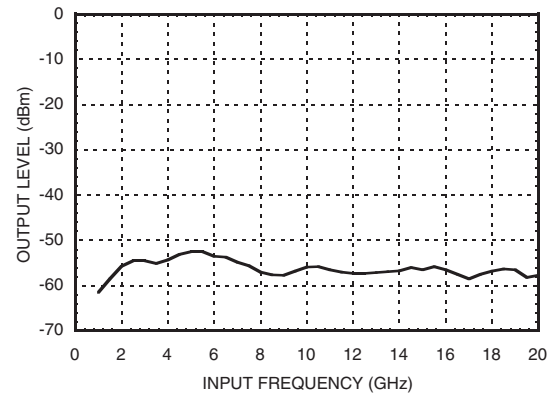
**SSB Phase Noise Performance,
 $P_{in} = 0\text{ dBm}$, $T = 25\text{ }^{\circ}\text{C}$**



**Output Harmonic Content,
 $P_{in} = 0\text{ dBm}$, $T = 25\text{ }^{\circ}\text{C}$**

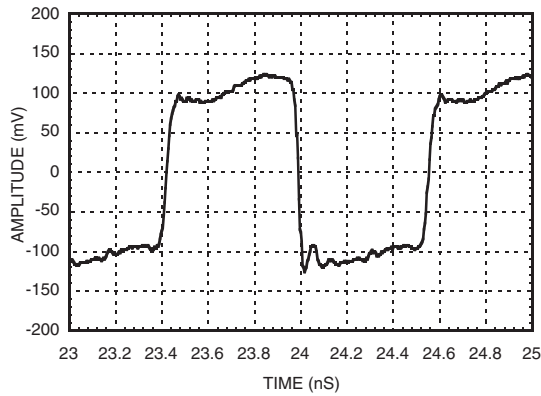


Reverse Leakage, $P_{in} = 0\text{ dBm}$, $T = 25\text{ }^{\circ}\text{C}$



**DIVIDE-BY-2 PRESCALER
MODULE, 0.5 - 18 GHz**


Output Voltage Waveform,
 $P_{in} = 0 \text{ dBm}$, $F_{out} = 882 \text{ MHz}$, $T = 25^\circ \text{C}$


Absolute Maximum Ratings

Supply Voltage (V_{cc})	+5.5V
RF Input ($V_{cc} = +5V$)	+13 dBm
Storage Temperature	-65 to +150 °C
Operating Temperature	-55 to +85 °C
ESD Sensitivity (HBM)	Class 1A



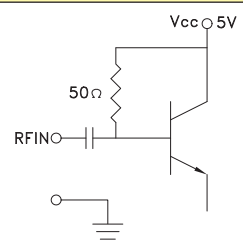
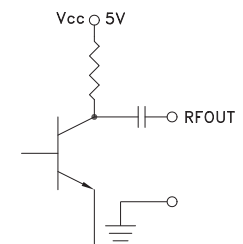

ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

Typical Supply Current vs. V_{cc}

V_{cc}	I_{cc} (mA)
4.75	66
5.00	75
5.25	84

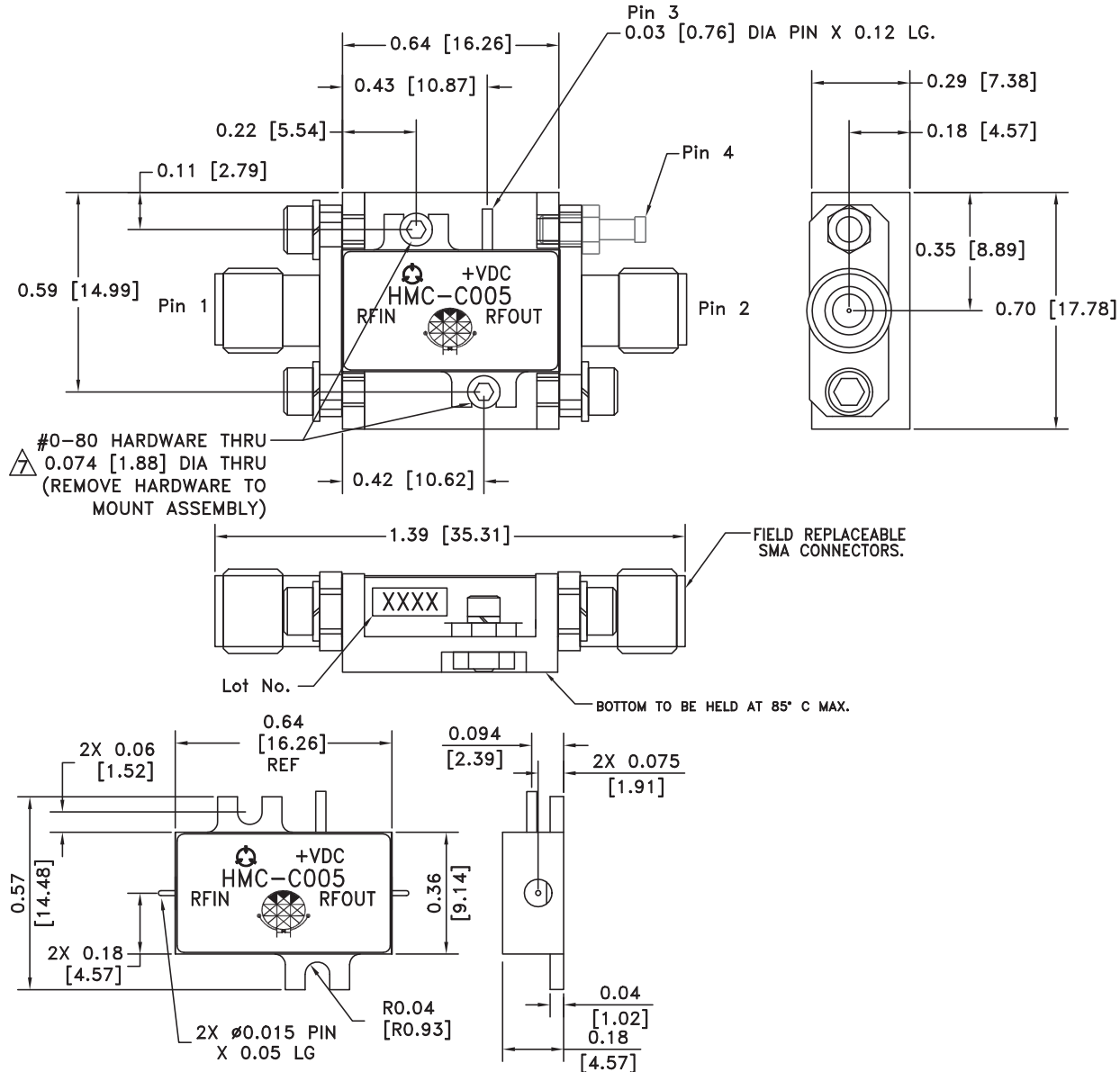
Note: Divider will operate over full voltage range shown above

Pin Description

Pin Number	Function	Description	Interface Schematic
1	RFIN & RF Ground	RF input connector, SMA female, field replaceable. RF Input is AC coupled.	
2	RFOUT & RF Ground	RF output connector, SMA female, field replaceable. Divided output is AC coupled..	
3	V_{cc}	Supply voltage 5V \pm 0.25V.	
4	GND	Power supply ground.	

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**DIVIDE-BY-2 PRESCALER
MODULE, 0.5 - 18 GHz**
Outline Drawing

Package Information


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

[1] Includes the connectors

[2] ±1 gms Tolerance

NOTES:

1. PACKAGE, LEADS, COVER MATERIAL: KOVAR™
2. BRACKET 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.