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[Analog Devices Inc.](#)  
[HMC-C006](#)

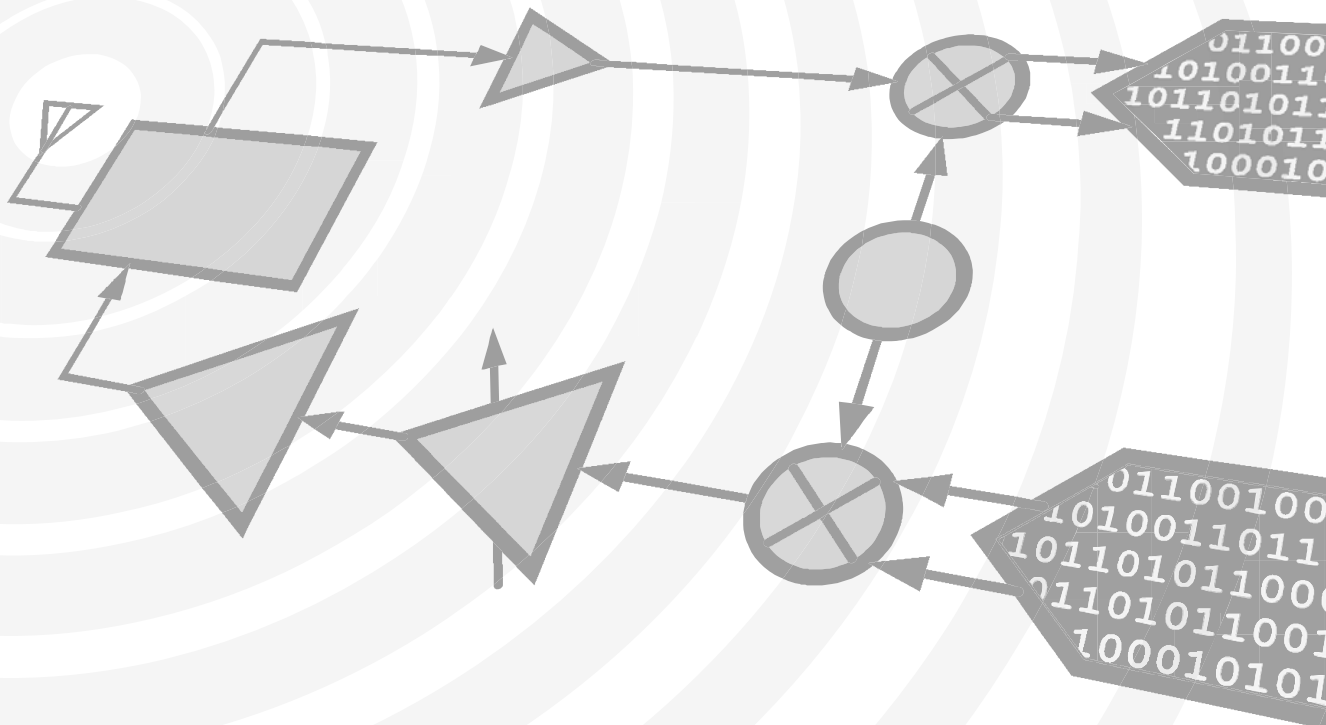
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# Analog Devices Welcomes Hittite Microwave Corporation

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## HMC-C006

### DIVIDE-BY-4 PRESCALER MODULE, 0.5 - 18 GHz

#### Features

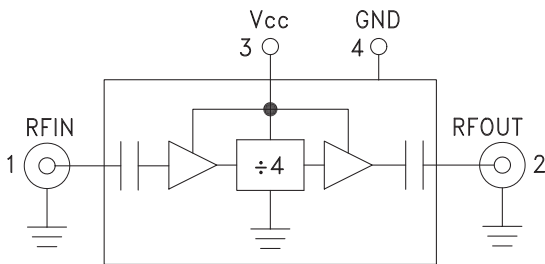
- Ultra Low SSB Phase Noise: -150 dBc/Hz
- Very Wide Bandwidth
- Output Power: -4 dBm
- Single DC Supply: +5V
- Hermetically Sealed Module
- Field Replaceable SMA Connectors
- 55 to +85 °C Operating Temperature

#### 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



#### General Description

The HMC-C006 is a low noise Divide-by-4 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 12 GHz	-20	-15	+10	dBm
	Fin = 12 to 15 GHz	-20	-15	+5	dBm
	Fin = 15 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		60		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)			93		mA

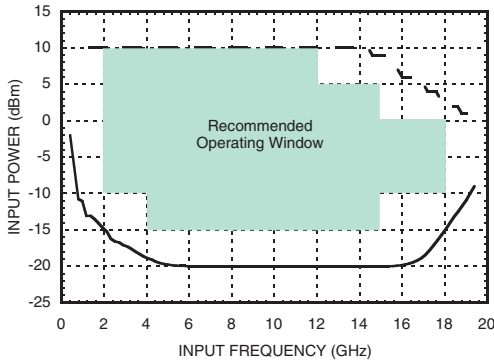
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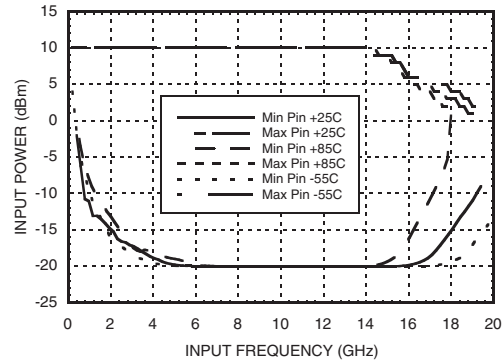
# HMC-C006

## DIVIDE-BY-4 PRESCALER MODULE, 0.5 - 18 GHz

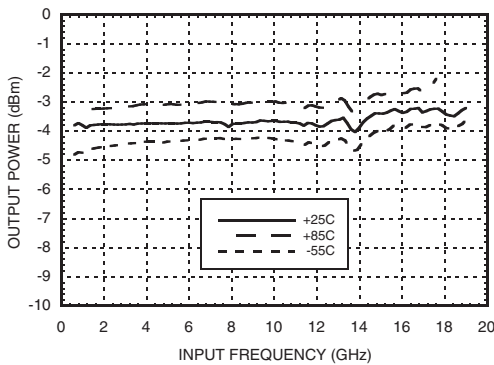
**Input Sensitivity Window, T= 25 °C**



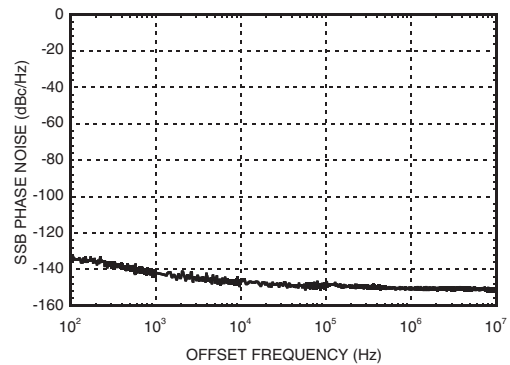
**Input Sensitivity vs. Temperature**



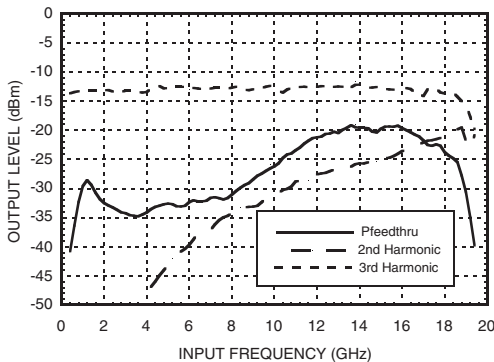
**Output Power vs. Temperature**



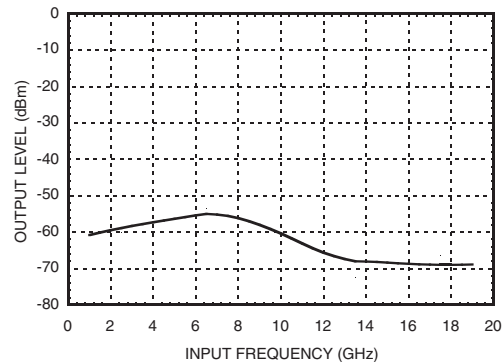
**SSB Phase Noise Performance, Pin= 0 dBm, T= 25 °C**



**Output Harmonic Content, Pin= 0 dBm, T= 25 °C**



**Reverse Leakage, Pin= 0 dBm, T= 25 °C**



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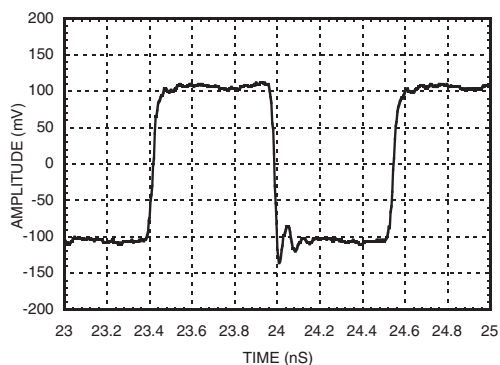


## HMC-C006

### DIVIDE-BY-4 PRESCALER MODULE, 0.5 - 18 GHz



**Output Voltage Waveform,**  
*Pin= 0 dBm, Fout= 882 MHz, T= 25 °C*



#### Absolute Maximum Ratings

Supply Voltage (Vcc)	+5.5V
RF Input (Vcc = +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. Vcc

Vcc	Icc (mA)
4.75	82
5.00	93
5.25	104

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	Vcc	Supply voltage 5V ± 0.25V.	
4	GND	Power supply ground.	

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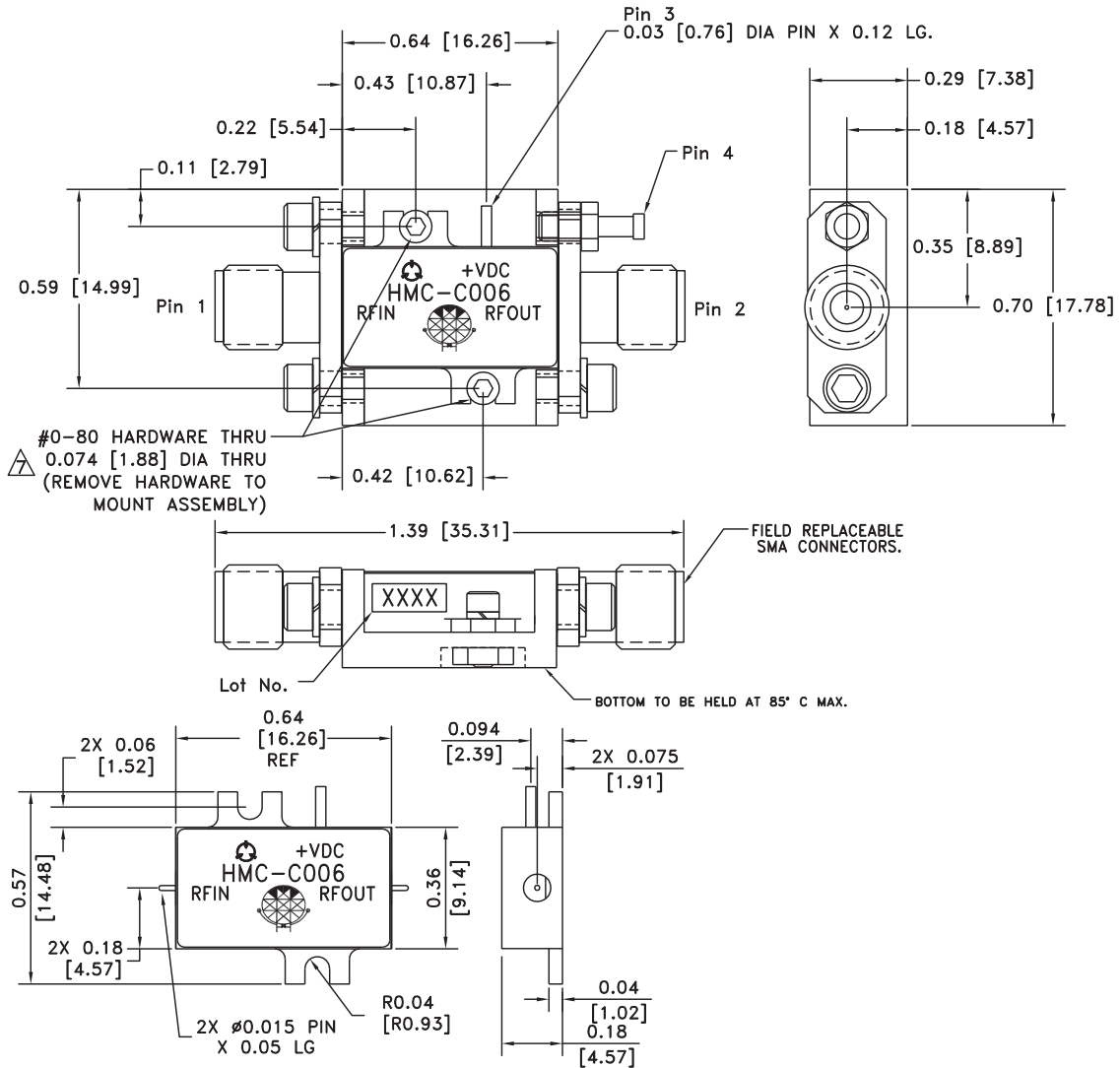


**HMC-C006**

**DIVIDE-BY-4 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. TENSOLITE 5602 - 5CCSF OR EQUIVALENT.
- △ TO MOUNT MODULE TO SYSTEM PLATFORM REPLACE 0-80 HARDWARE WITH DESIRED MOUNTING SCREWS.

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