HMC-C040

v01.0507

DIVIDE-BY-10 PRESCALER MODULE, 0.5 - 17.0 GHz

Features

Ultra Low SSB Phase Noise: -155 dBc/Hz

Very Wide Bandwidth

Output Power: -1 dBm

Single DC Supply: +5V @ 152mA

RoHS Compliant Hermetically Sealed Module

Field Replaceable SMA Connectors

-55 to +85 °C Operating Temperature

Typical Applications

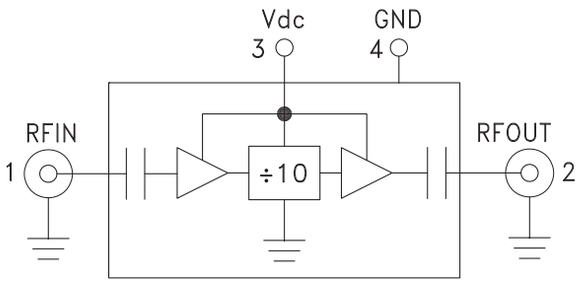
Prescaler for 0.5 to 17 GHz PLL Applications:

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

General Description

The HMC-C040 is a low noise Divide-by-10 Static Divider utilizing InGaP GaAs HBT technology packaged in a miniature, hermetic module with replaceable SMA connectors. This device operates from 0.5 to 17 GHz input frequency from a single +5V DC supply. The low additive SSB phase noise of -155 dBc/Hz at 100 kHz offset helps the user maintain excellent system noise performance.

Functional Diagram



Electrical Specifications, T_A = +25° C, 50 Ohm System, Vdc= +5V

Parameter	Conditions	Min.	Typ.	Max.	Units
Maximum Input Frequency		17	18		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 17 GHz	-20	-15	5	dBm
Output Power	Fin = 0.5 to 17 GHz	-4	-1		dBm
Reverse Leakage	Fin = 0.5 to 9 GHz		85		dB
Reverse Leakage	Fin = 9 to 17 GHz		70		dB
SSB Phase Noise (100 kHz offset)	Pin = 0 dBm, Fin = 4.8 GHz		-155		dBc/Hz
Output Transition Time	Pin = 0 dBm, Fout = 882 MHz		100		ps
Supply Current (Idc)			152		mA

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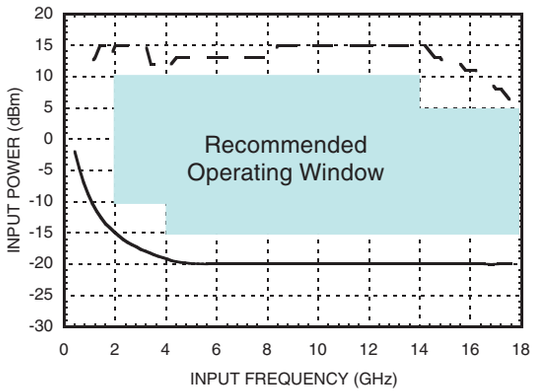
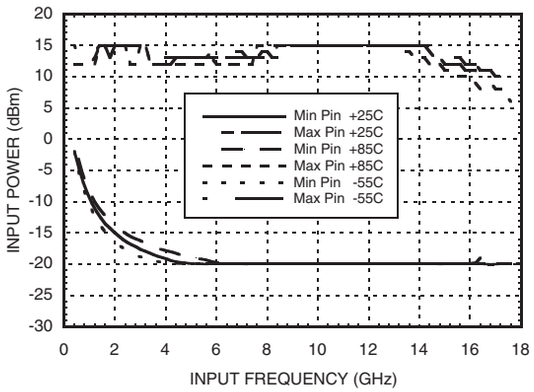
Phone: 781-329-4700 • Order online at www.analog.com
Application Support: Phone: 1-800-ANALOG-D

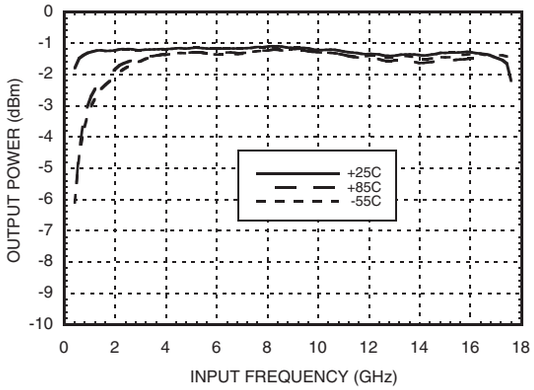
Input Sensitivity Window, T= 25 °C



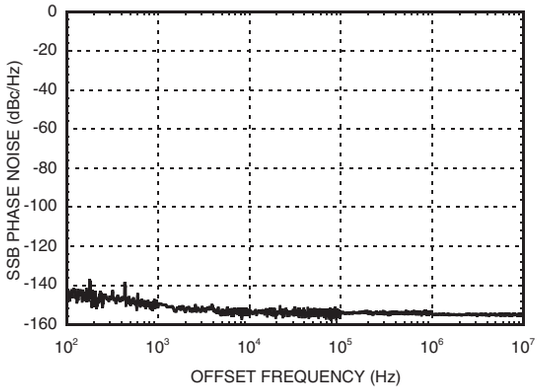
Input Sensitivity vs. Temperature



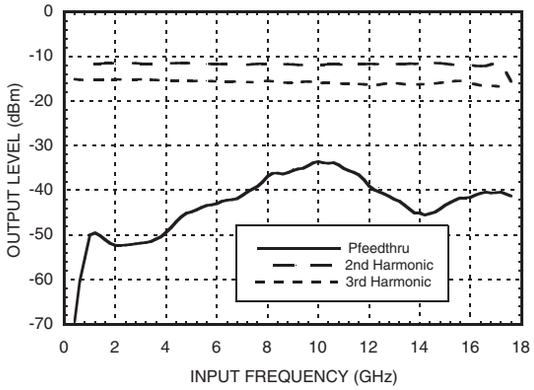
Output Power vs. Temperature



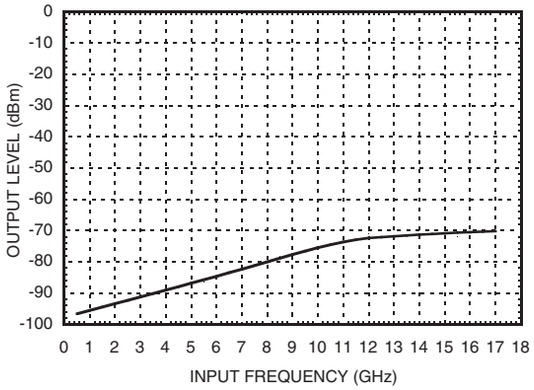
SSB Phase Noise Performance, Pin= 0 dBm, T= 25 °C



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



Reverse Leakage, Pin= 0 dBm, T= 25 °C



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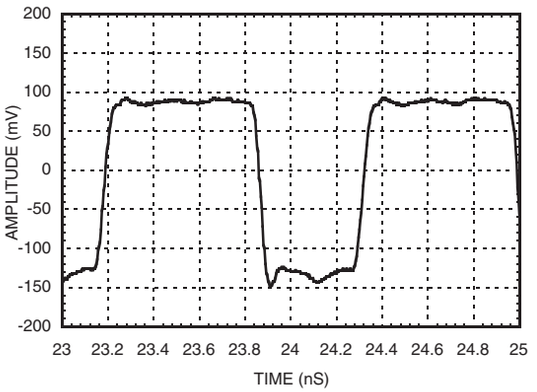
DIVIDE-BY-10 PRESCALER MODULE, 0.5 - 17.0 GHz

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



Absolute Maximum Ratings

Supply Voltage (Vdc)	+5.5V
RF Input (Vdc = +5V)	+13 dBm
Storage Temperature	-65 to +150 °C
Operating Temperature	-55 to +85 °C

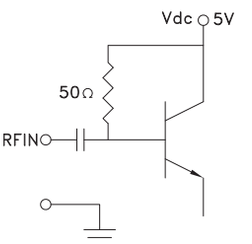
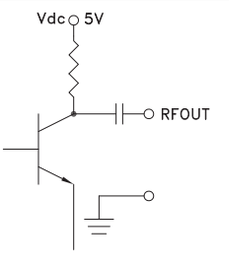
ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

Typical Supply Current vs. Vdc

Vdc	Idc (mA)
4.75	138
5.00	152
5.25	138

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

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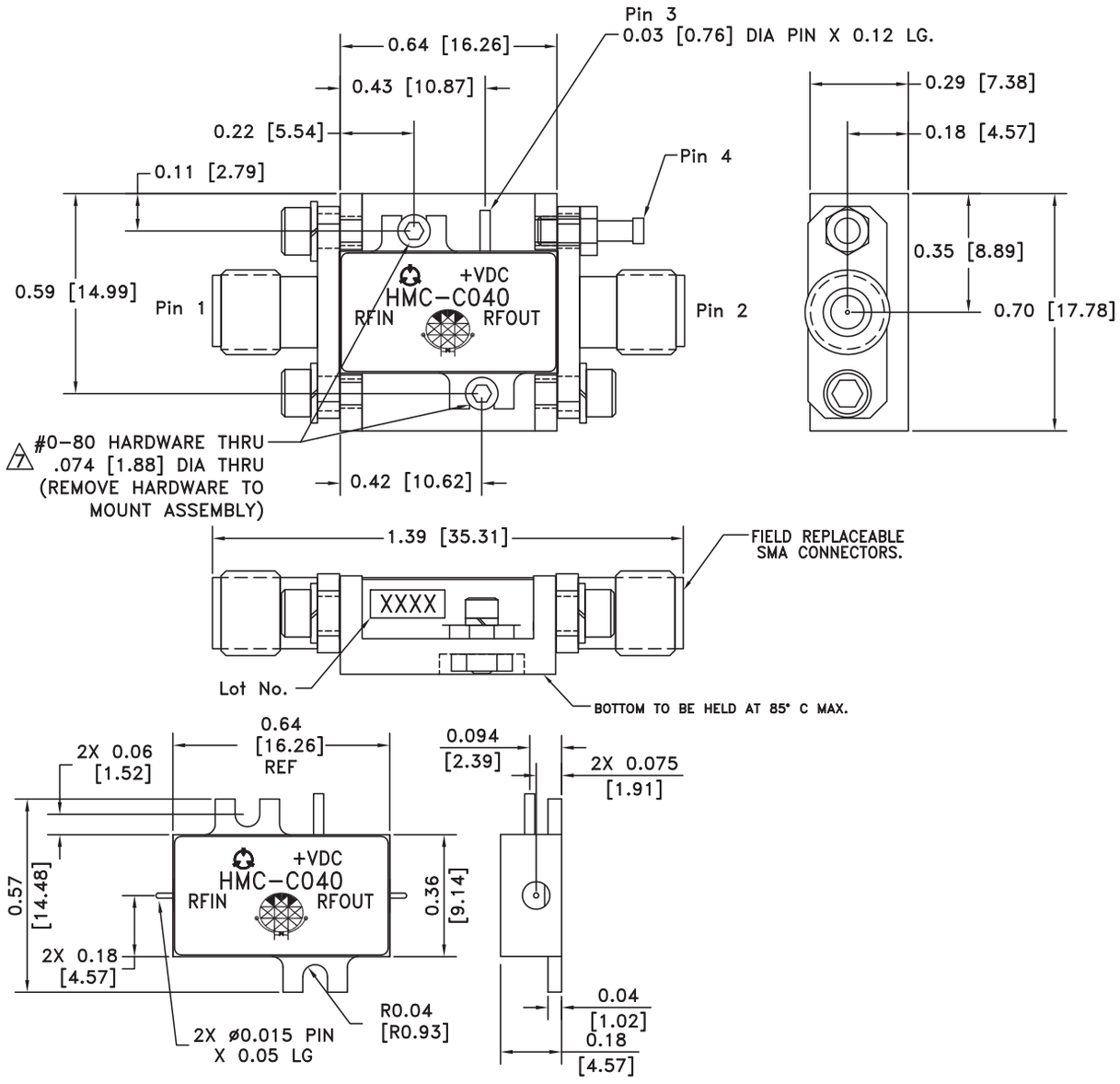
Outline Drawing



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

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