

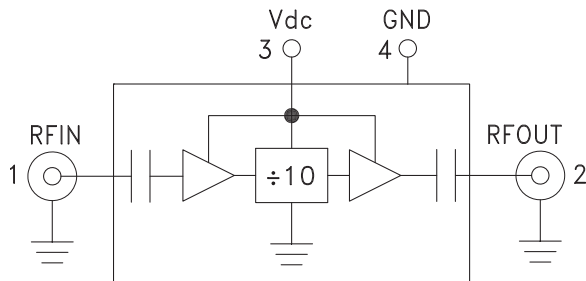


Typical Applications

Prescaler for 0.5 to 17 GHz PLL Applications:

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

Functional Diagram



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

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.

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

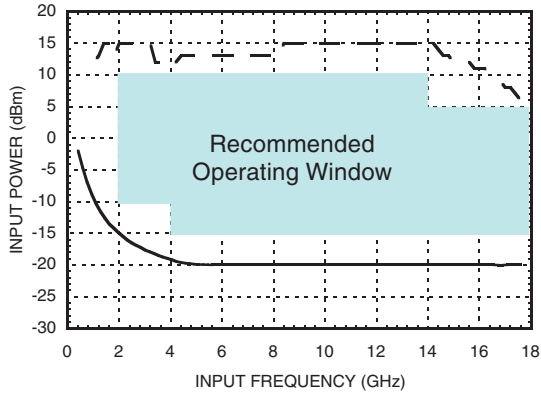
Parameter	Conditions	Min.	Typ.	Max.	Units
Maximum Input Frequency		17	18		GHz
Minimum Input Frequency	Sine Wave Input			0.5	GHz
Input Power Range	$F_{in} = 2$ to 4 GHz	-15	-10	+10	dBm
	$F_{in} = 4$ to 14 GHz	-20	-15	+10	dBm
	$F_{in} = 14$ to 17 GHz	-20	-15	5	dBm
Output Power	$F_{in} = 0.5$ to 17 GHz	-4	-1		dBm
Reverse Leakage	$F_{in} = 0.5$ to 9 GHz		85		dB
Reverse Leakage	$F_{in} = 9$ to 17 GHz		70		dB
SSB Phase Noise (100 kHz offset)	$P_{in} = 0$ dBm, $F_{in} = 4.8$ GHz		-155		dBc/Hz
Output Transition Time	$P_{in} = 0$ dBm, $F_{out} = 882$ MHz		100		ps
Supply Current (I_{dc})			152		mA

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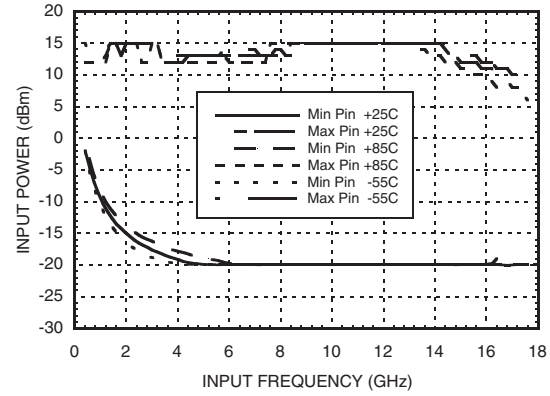


DIVIDE-BY-10 PRESCALER MODULE, 0.5 - 17.0 GHz

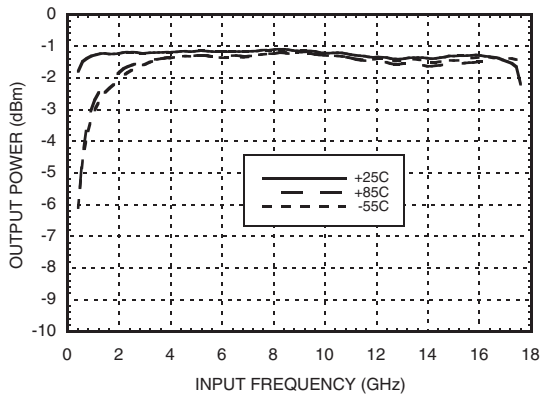
Input Sensitivity Window, T= 25 °C



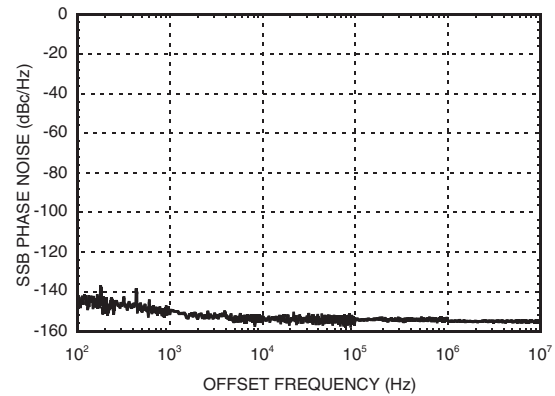
Input Sensitivity vs. Temperature



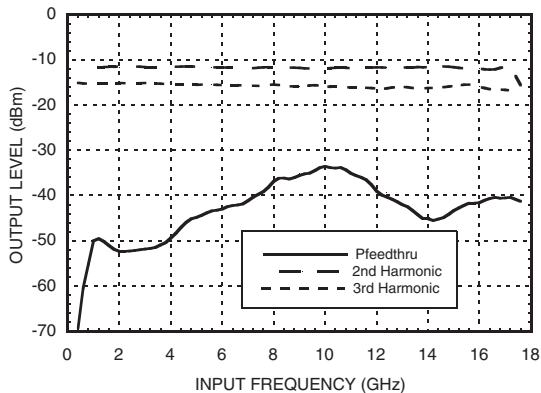
Output Power vs. Temperature



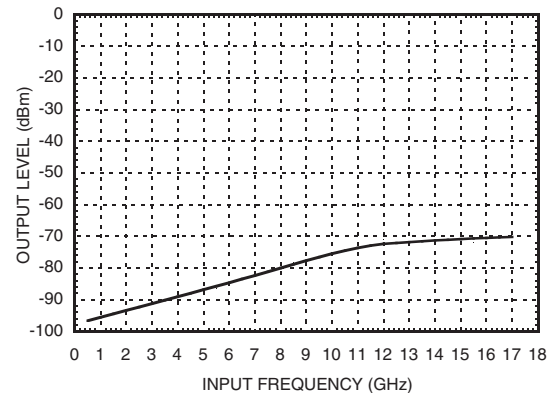
SSB Phase Noise Performance, Pin= 0 dBm, T= 25 °C



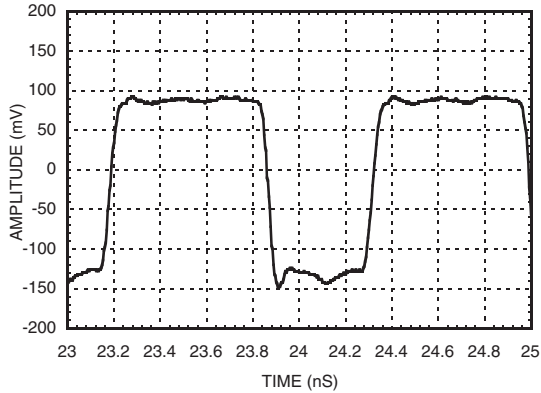
Output Harmonic Content, Pin= 0 dBm, T= 25 °C



Reverse Leakage, Pin= 0 dBm, T= 25 °C



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**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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