



Features

- ▶ **Temperature stability down to 50ppb**
- ▶ **Single 12V supply (15V or 18V optional)**
- ▶ **Low profile compact package**
- ▶ **Standard European IEC CO-08 pin-out**
- ▶ **Custom options available**

Standard Models

The table shows the most common models. In most cases selecting one of these models will ensure the best combination of price / performance and availability.

Freq	Specification	Ageing per day	Temperature stability	Part No
5.0MHz	HCD310/BNDN	$\pm 5 \times 10^{-9}$	$\pm 5 \times 10^{-8}$ -20+60°C	MS08441
10.0MHz	HCD310/BNDN	$\pm 5 \times 10^{-9}$	$\pm 5 \times 10^{-8}$ -20+60°C	MS06244
13.0MHz	HCD310/BNDN	$\pm 5 \times 10^{-9}$	$\pm 5 \times 10^{-8}$ -20+60°C	MS08799
50.0MHz	HCD310/BNDN	$\pm 5 \times 10^{-9}$	$\pm 5 \times 10^{-8}$ -20+60°C	MA02777
5.0MHz	HCD311/BNDN	$\pm 5 \times 10^{-9}$	$\pm 5 \times 10^{-8}$ -20+60°C	MA05180
10.0MHz	HCD311/BNDN	$\pm 5 \times 10^{-9}$	$\pm 5 \times 10^{-8}$ -20+60°C	MA01432
50.0MHz	HCD311/BNDN	$\pm 5 \times 10^{-9}$	$\pm 5 \times 10^{-8}$ -20+60°C	MA05478

Specifications

HCD310: Sine wave output

HCD311: HCMOS / TTL compatible output

Parameters	Product		Option Codes
	HCD310	HCD311	
Frequency range: 5.0 ~ 60.0MHz 5.0 ~ 50.0MHz	■	■	
Ageing per day (at despatch): $< \pm 1 \times 10^{-8}$ $< \pm 5 \times 10^{-9}$	□ ■	□ ■	A B
Frequency stability: $\pm 5 \times 10^{-7}$ per year $\pm 1 \times 10^{-7}$ per 5% change in V_{DD}	■ ■	■ ■	
Temperature stability: $< \pm 1 \times 10^{-7}$ $< \pm 5 \times 10^{-8}$	□ ■	□ ■	M N
Operating temperature range: -20 to +60°C 0 to +70°C -20 to +70°C	■ □ □	■ □ □	D E F
Storage temperature range: -40 to +90°C	■	■	
Output waveform: Sine wave, 1.5V p-p $\pm 0.5V$ into 50Ω HCMOS / TTL compatible	■	■	
Frequency adjustment: $\pm 1 \times 10^{-5}$ typ (10MHz), +0.5 to +6.0V (sufficient for 10 years ageing min) Stabilised +6.0V supply provided	■	■	
Supply voltage (V_{DD}): +12V ($\pm 0.5V$) +15V ($\pm 0.5V$) +18V ($\pm 0.5V$)	■ □ □	■ □ □	N P R
Power consumption: 4.5W max at switch on 1.0W typ when stabilised at 25°C	■ ■	■ ■	
Warm up: $\pm 5 \times 10^{-8}$ after 10mins at +25°C	■	■	
Phase noise (@ 10.0MHz): $< -110dBc/Hz$ @ 10Hz $< -130dBc/Hz$ @ 100Hz $< -145dBc/Hz$ @ 1kHz $< -150dBc/Hz$ @ 10kHz $< -150dBc/Hz$ @ 50kHz	■ ■ ■ ■ ■	■ ■ ■ ■ ■	
Shock: IEC 68-2-27 Test Ea 50G for 11ms	■	■	
Vibration: IEC 68-2-06 Test Fc 10-55Hz, 1.5mm. 55-500Hz, 10G	■	■	

■ Standard. □ Optional - Please specify required code(s) when ordering

Ordering Information

Part No, or product name + option codes + frequency
eg: **HCD310/BNDN 10.0MHz**
HCD311/AMFP 20.0MHz

Option code X (eg HCD310/X) denotes a custom specification.

♦ See HCD210 for chassis-mounted version of HCD310