



## Specifications

**HCD310: Sine wave output**  
**HCD311: HCMOS / TTL compatible output**

Parameters	Product		Option Codes
	HCD310	HCD311	
<b>Frequency range:</b> 5.0 ~ 60.0MHz 5.0 ~ 50.0MHz	■	■	
<b>Ageing per day (at despatch):</b> < ±1x10 <sup>-8</sup> < ±5x10 <sup>-9</sup>	□ ■	□ ■	A B
<b>Frequency stability:</b> ±5x10 <sup>-7</sup> per year ±1x10 <sup>-7</sup> per 5% change in V <sub>DD</sub>	■ ■	■ ■	
<b>Temperature stability:</b> < ±1x10 <sup>-7</sup> < ±5x10 <sup>-8</sup>	□ ■	□ ■	M N
<b>Operating temperature range:</b> -20 to +60°C 0 to +70°C -20 to +70°C	■ □ □	■ □ □	D E F
<b>Storage temperature range:</b> -40 to +90°C	■	■	
<b>Output waveform:</b> Sine wave, 1.5V p-p ±0.5V into 50Ω HCMOS / TTL compatible	■	■	
<b>Frequency adjustment:</b> ±1x10 <sup>-5</sup> typ (10MHz), +0.5 to +6.0V (sufficient for 10 years ageing min) Stabilised +6.0V supply provided	■	■	
<b>Supply voltage (V<sub>DD</sub>):</b> +12V (±0.5V) +15V (±0.5V) +18V (±0.5V)	■ □ □	■ □ □	N P R
<b>Power consumption:</b> 4.5W max at switch on 1.0W typ when stabilised at 25°C	■ ■	■ ■	
<b>Warm up:</b> ±5x10 <sup>-8</sup> after 10mins at +25°C	■	■	
<b>Phase noise (@ 10.0MHz):</b> < -110dBc/Hz @ 10Hz < -130dBc/Hz @ 100Hz < -145dBc/Hz @ 1kHz < -150dBc/Hz @ 10kHz < -150dBc/Hz @ 50kHz	■ ■ ■ ■ ■	■ ■ ■ ■ ■	
<b>Shock:</b> IEC 68-2-27 Test Ea 50G for 11ms	■	■	
<b>Vibration:</b> IEC 68-2-06 Test Fc 10-55Hz, 1.5mm. 55-500Hz, 10G	■	■	

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

## 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	±5x10 <sup>-9</sup>	±5x10 <sup>-8</sup> -20+60°C	MS08441
10.0MHz	HCD310/BNDN	±5x10 <sup>-9</sup>	±5x10 <sup>-8</sup> -20+60°C	MS06244
13.0MHz	HCD310/BNDN	±5x10 <sup>-9</sup>	±5x10 <sup>-8</sup> -20+60°C	MS08799
50.0MHz	HCD310/BNDN	±5x10 <sup>-9</sup>	±5x10 <sup>-8</sup> -20+60°C	MA02777
5.0MHz	HCD311/BNDN	±5x10 <sup>-9</sup>	±5x10 <sup>-8</sup> -20+60°C	MA05180
10.0MHz	HCD311/BNDN	±5x10 <sup>-9</sup>	±5x10 <sup>-8</sup> -20+60°C	MA01432
50.0MHz	HCD311/BNDN	±5x10 <sup>-9</sup>	±5x10 <sup>-8</sup> -20+60°C	MA05478

## 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