



## Features

- ▀ Temperature stability down to 20ppb
- ▀ Single 5V oven & oscillator supply
- ▀ Low height compact package
- ▀ Standard European IEC CO-08 pin-out
- ▀ Custom options available

## Standard Models

Freq	Specification	Ageing per day	Temperature stability	Part No
16.3840MHz	HCD331/BNDL	$\pm 5 \times 10^{-9}$	$\pm 5 \times 10^{-8}$ -20+60°C	MA05207
19.440MHz	HCD331/BNDL	$\pm 5 \times 10^{-9}$	$\pm 5 \times 10^{-8}$ -20+60°C	MA05208

## Specifications

Parameters	Product	Option Codes
	HCD331	
<b>Frequency range:</b> 13.0 ~ 20.0MHz	■	
<b>Ageing per day (at despatch):</b> $< \pm 1 \times 10^{-8}$ $< \pm 5 \times 10^{-9}$ ■ $< \pm 3 \times 10^{-9}$ □	□ ■ □	A B C
<b>Frequency stability:</b> $< \pm 3 \times 10^{-7}$ per year ■ $< \pm 5 \times 10^{-8}$ per 10% change in $V_{DD}$ ■	■ ■	
<b>Temperature stability:</b> $< \pm 1 \times 10^{-7}$ $< \pm 5 \times 10^{-8}$ ■ $< \pm 2 \times 10^{-8}$ □	□ ■ □	M N P
<b>Operating temperature range:</b> 0 to +50°C □ -20 to +60°C ■ -20 to +70°C □	□ ■ □	A D F
<b>Storage temperature range:</b> -40 to +90°C	■	
<b>Output waveform:</b> 50pF HCMOS, 45:55 duty	■	
<b>Frequency adjustment:</b> $\pm 1 \times 10^{-5}$ (typ) over +0.5 to +4.0V (sufficient for 15 years ageing min) Stabilised +4.0V supply provided	■	
<b>Supply voltage (<math>V_{DD}</math>):</b> +5.0V ( $\pm 0.25$ V)	■	L
<b>Power consumption:</b> 4.5W max at switch on ■ 1.0W typ when stabilised at 25°C ■	■ ■	
<b>Warm up:</b> $< \pm 5 \times 10^{-8}$ after 10mins at +25°C	■	
<b>Phase noise (@ 10.0MHz):</b> $< -100$ dBc/Hz @ 10Hz ■ $< -120$ dBc/Hz @ 100Hz ■ $< -135$ dBc/Hz @ 1kHz ■ $< -150$ dBc/Hz @ 10kHz ■ $< -150$ dBc/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

## Ordering Information

Part No, or product name + option codes + frequency

eg: **HCD331/BNDL 16.3840MHz**

**HCD331/CMAL 19.440MHz**

Option code X (eg HCD331/X) denotes a custom specification.