



# HCD 311

## Features

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

## Standard Models

The table below shows the most common models; in most cases selecting one of these will ensure best combination of price, performance and availability.

Product Code	Freq	Ageing per day	Temp stability
HCD311/BNDN	5.0MHz	$< 5 \times 10^{-9}$	$< 5 \times 10^{-8}$ -20+60°C
HCD311/BNDN	10.0MHz	$< 5 \times 10^{-9}$	$< 5 \times 10^{-8}$ -20+60°C
HCD311/BNDN	50.0MHz	$< 5 \times 10^{-9}$	$< 5 \times 10^{-8}$ -20+60°C

Parameters HCD311		Standard / Optional	Code
Frequency range:	5.0 ~ 50.0MHz	Standard	
Ageing per day (at dispatch):	$< 1 \times 10^{-8}$	Optional	A
	$< 5 \times 10^{-9}$	Standard	B
Frequency stability:	$< 5 \times 10^{-7}$ per year max	Standard	
	$< 5 \times 10^{-8}$ per 5% change $V_{DD}$	Standard	
Temperature stability:	$< 1 \times 10^{-7}$	Optional	M
	$< 5 \times 10^{-8}$	Standard	N
Operating temperature range:	-20 to +60°C	Standard	D
	0 to +70°C	Optional	E
	-20 to +70°C	Optional	F
Storage temp:	-40 to +90°C	Standard	
Output waveform:	HCMOS / TTL compatible	Standard	
Frequency adjustment:	$\pm 5 \times 10^{-6}$ typ (10MHz), +0.5 to +6.0V (sufficient for 10 years ageing min) Stabilised +6.0V supply provided	Standard	
Supply Voltage ( $V_{DD}$ ):	+12.0V ( $\pm 0.5$ V)	Standard	N
	+15.0V ( $\pm 0.5$ V)	Optional	P
	+18.0V ( $\pm 0.5$ V)	Optional	R
Power consumption:	4.5W max at switch on	Standard	
	1.0W typ (stabilised at 25°C)	Standard	
Warm up:	$\pm 5 \times 10^{-8}$ after 10mins at 25°C	Standard	
Phase noise (@10MHz):	$< -110$ dBc/Hz @ 10Hz	Standard	
	$< -130$ dBc/Hz @ 100Hz	Standard	
	$< -145$ dBc/Hz @ 1kHz	Standard	
	$< -150$ dBc/Hz @ 10kHz	Standard	
	$< -150$ dBc/Hz @ 50kHz	Standard	
Shock:	IEC68-2-27 Test Ea 50G for 11ms	Standard	
Vibration:	IEC68-2-06 Test Fc 10-55Hz, 1.5mm, 55-500Hz, 10G	Standard	

