HCD 680

Features

- Temperature stability down to 3ppb
- Single 12V supply (15V ~ 30V optional)
- Standard US footprint and pin-out
- “Best in class” close-in phase noise option

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
HCD680/DRFN	10.0MHz	< 1×10^{-9}	< 1×10^{-8} -20+70°C
HCD680/FTFN	10.0MHz	< 2×10^{-10}	< 3×10^{-9} -20+70°C

Parameters HCD680		Standard / Optional	Code
Frequency range:	5.0 ~ 20.0MHz	Standard	
Ageing per day (at dispatch):	< 1×10^{-9}	Optional	D
	< 5×10^{-10}	Optional	E
	< 2×10^{-10}	Standard	F
	< 1×10^{-10}	Optional	G
Frequency stability:	< 1×10^{-7} per year (option D)	Optional	
	< 1×10^{-8} per year (option F)	Optional	
	< 1×10^{-9} per 10% change V_{DD}	Standard	
	< 5×10^{-10} per 10% change load	Standard	
Temperature stability:	< 1×10^{-8}	Standard	R
	< 5×10^{-9}	Optional	S
	< 3×10^{-9}	Standard	T
Operating temperature range:	-10 to +60°C	Optional	C
	-20 to +70°C	Standard	F
	-40 to +70°C	Optional	G
Storage temp:	-40 to +90°C	Standard	
Output waveform:	Sine wave, 7dBm (±2dBm) into 50Ω	Standard	
	Other options to +13dBm max	Optional	specify
Frequency adjustment:	±5×10^{-7} (typ) over +0.5 to +7.0V (sufficient for 10 years ageing min) Stabilised +7.0V supply provided	Standard	
Supply Voltage (V_{DD}):	+12.0V (±0.5V)	Standard	N
	+24.0V (±0.5V)	Optional	T
	Other options from 12 - 30V	Optional	specify
Power consumption:	5W max at switch on	Standard	
	1.2W typ (stabilised at 25°C)	Standard	
Warm up:	< ±1×10^{-8} after 8mins at +20°C	Standard	
Allan deviation (ADEV), 1sec:	< 5×10^{-13} (5.0MHz)	Standard	
	< 1×10^{-12} (10.0MHz)	Standard	
Close-in phase noise (@5MHz):	< -110dBc/Hz @1Hz, < -135 @10Hz	Standard	
	< -123dBc/Hz @1Hz, < -140 @10Hz	Optional	Z
	< -150dBc/Hz @ 100Hz	Standard	
Close-in phase noise (@10MHz):	< -95dBc/Hz @ 1Hz, < -130 @10Hz	Standard	
	< -108dBc/Hz @1Hz, < -135 @10Hz	Optional	Z
	< -145dBc/Hz @ 100Hz	Standard	
Far-out phase noise (all frequencies):	< -155dBc/Hz @ 1kHz	Standard	
	< -157dBc/Hz @ 10kHz	Standard	
	< -157dBc/Hz @ 100kHz	Standard	
Harmonics:	< -30dB wrt carrier	Standard	

Example Product Code

1: Daily Ageing Rate Code

3: Operating Temp. Range Code

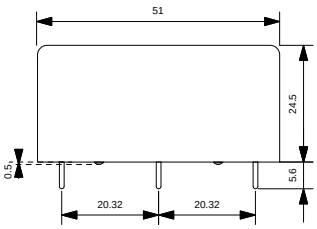
Oscillator Freq.

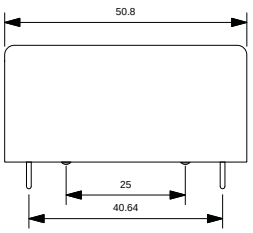
310 / BNDN 10.0MHz

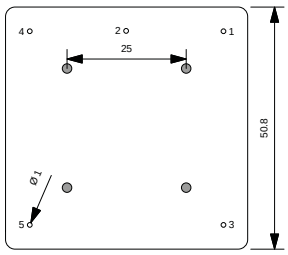
4: Operating Voltage Code

2: Temp. Stability Code

(See specification tables for availible options)







Pin	Connection
1	Freq. adjustment
2	Ref. voltage out
3	Supply
4	RF output
5	Ground & case

Scale 1:1, All Dimensions, mm