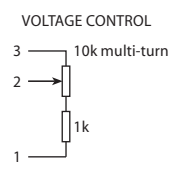


PIN	CONNECTION
1	Ground
2	Freq adjustment
3	Ref voltage out
4	Supply
5	RF output



## Features

- ▶ Temperature stability down to 1ppb
- ▶ Single 12V supply (12V ~ 30V optional)
- ▶ Standard European pin-out
- ▶ Custom options available

## Standard Models

Freq	Specification	Ageing per day	Temperature stability	Part No
5.0MHz	HCD660/DRFN	< 1x10 <sup>-9</sup>	< 1x10 <sup>-8</sup> -20+70°C	MS06938
5.0MHz	HCD660/FTFN	< 2x10 <sup>-10</sup>	< 3x10 <sup>-9</sup> -20+70°C	MS06940
10.0MHz	HCD660/DRFN	< 1x10 <sup>-9</sup>	< 1x10 <sup>-8</sup> -20+70°C	MS06937
10.0MHz	HCD660/FTFN	< 2x10 <sup>-10</sup>	< 3x10 <sup>-9</sup> -20+70°C	MS06939

## Specifications

Parameters	Product	Option Codes
	HCD660	
Frequency range:	5.0 ~ 20.0MHz	■
Ageing per day (at despatch):	< 1x10 <sup>-9</sup> < 5x10 <sup>-10</sup> < 2x10 <sup>-10</sup>	■ □ ■ D E F
Frequency stability:	< 1x10 <sup>-7</sup> per year (option D) < 2x10 <sup>-8</sup> per year (option F) < 1x10 <sup>-9</sup> per 10% change in V <sub>DD</sub> < 5x10 <sup>-10</sup> per 10% change in load	□ □ ■ ■ R S T V
Temperature stability:	< 1x10 <sup>-8</sup> < 5x10 <sup>-9</sup> < 3x10 <sup>-9</sup> < 1x10 <sup>-9</sup>	■ □ ■ □ R S T V
Operating temperature range:	-10 to +60°C -20 to +70°C -40 to +70°C	□ ■ □ C F G
Storage temperature range:	-40 to +90°C	■
Output waveform:	Sine wave, 7dBm (±1dBm) into 50Ω Other options to +13dBm max	■ □ specify
Frequency adjustment:	±5x10 <sup>-7</sup> (typ) over +0.5 to +7.0V (sufficient for 10 years ageing min) Stabilised +7.0V supply provided	■
Supply voltage (V <sub>DD</sub> ):	+12V (±0.5V) Other options from 12~30V	■ □ N specify
Power consumption:	5.0W max at switch on 1.2W typ when stabilised at 25°C	■ ■
Warm up:	< 1x10 <sup>-8</sup> after 8mins at +20°C	■
Allan deviation (ADEV), 1 sec:	< 5x10 <sup>-13</sup> (5.0MHz) < 1x10 <sup>-12</sup> (10.0MHz)	■ ■
Close-in phase noise (@ 5.0MHz):	< -110 dBc/Hz @ 1Hz, < -135 @ 10Hz < -123 dBc/Hz @ 1Hz, < -140 @ 10Hz < -150 dBc/Hz @ 100Hz	■ □ ■ Z
Close-in phase noise (@ 10.0MHz):	< -95 dBc/Hz @ 1Hz, < -130 @ 10Hz < -108 dBc/Hz @ 1Hz, < -135 @ 10Hz < -145 dBc/Hz @ 100Hz	■ □ ■ Z
Far-out phase noise (all freqs):	< -155 dBc/Hz @ 1kHz < -157 dBc/Hz @ 10kHz < -157 dBc/Hz @ 100kHz	■ ■ ■
Harmonics:	< -30dB wrt carrier	■

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

## Ordering Information

Part No, or product name + option codes + frequency  
 eg: **HCD660/FTFN 10.0MHz**  
 Option code X (eg HCD660/X) denotes a custom specification.