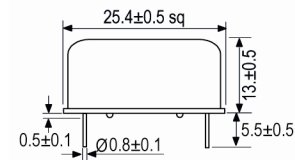
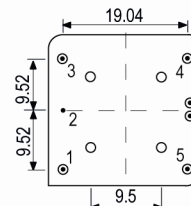


### Outline (mm)



#### Pin Connection

1. Output
2. GND
3. Voltage Control or N/C
4. Ref. Voltage Control or N/C
5. +Vs



Underside View

### Description

- Oven controlled hermetically sealed crystal oscillator.  
Reference voltage available.  
Low phase noise and low jitter optimised design.

Please note: This document is intended to illustrate the general capability and versatility of IQD's design. For specific enquiries please contact one of IQD's sales offices where we can tailor a unique specification to meet your needs.

### Frequency Parameters

- Frequency 4.0MHz to 20.0MHz
- Frequency Stability  $\pm 3.00\text{ppb}$  to  $\pm 5.00\text{ppb}$
- Developed Frequencies:  
10.0MHz 13.0MHz 16.3840MHz
- Frequency Tolerance Example:  $\pm 500\text{ppb}$   
Measurement at 25°C reference to nominal frequency.
- Frequency Stability vs Temperature Range:  
Tightest Stability:  $\pm 3\text{ppb}$  0 to 60°C  
Widest Temperature Range:  $\pm 5\text{ppb}$  -40 to 75°C
- For other frequency/specification combinations please contact our sales offices
- Ageing (typ @ 10.0MHz after 30 days continuous operation):  
Aging pr day:  $\pm 0.5\text{ppb}$   
After 1st year:  $\pm 50\text{ppb}$   
After 10 years:  $\pm 300\text{ppb}$
- Supply Voltage Coefficient Example:  $\pm 1\text{ppb}$  ref Vs $\pm 5\%$
- Load Coefficient Example:  $\pm 1\text{ppb}$  ref  $\pm 5\%$  load change

### Electrical Parameters

- Supply Voltage 3.3V
- Supply Voltage: Available in 5.0V and 3.3V
- Current Consumption:  
5.0V @ 25°C steady state, 200mA max  
5.0V Warm up, 500mA max  
3.3V @ 25°C steady state, 300mA max  
3.3V Warm up, 900mA max
- Reference Voltage Output (Pin 4): Customer specified value  
(A very stable DC output voltage, made available to the designer for use with a voltage divider circuit on the Voltage Control Input)

### Sales Office Contact Details:

UK: +44 (0)1460 270200

USA: +1 760 668 8935

Email: [info@iqdfrequencyproducts.com](mailto:info@iqdfrequencyproducts.com)

Web: [www.iqdfrequencyproducts.com](http://www.iqdfrequencyproducts.com)

### Frequency Adjustment

- Frequency Adjustment Range:  $\pm 500\text{ppb}$  to  $\pm 1500\text{ppb}$
- Control Voltage Example:  
For 3.3V supply:  $1.65\text{V} \pm 1.65\text{V}$   
For 5.0V supply:  $2.5\text{V} \pm 2.5\text{V}$
- Linearity Example: 10% max
- Slope (standard): Positive
- Input Impedance Example: 100k Ohms

### Operating Temperature Ranges

- 0 to 60°C
- -40 to 75°C

### Output Details

- Output Compatibility                      HCMOS/Sinewave
- Available with either HCMOS or Sinewave output
- HCMOS Typical Parameters (15pF load):  
Rise and fall time: 10ns max  
Duty Cycle 45/55%
- Sinewave Typical Parameters (50ohm load):  
Output Level: 6 to 10dBm  
Harmonic Suppression: -30dBc max  
Spurious Suppression: -60dBc max

### Noise Parameters

- Phase Noise typical figures @ 10.0MHz (dBc/Hz):

Offset	Typ	Max
1Hz	-90	-80
10Hz	-120	-110
100Hz	-140	-130
1kHz	-145	-140
10kHz	-150	-145
100kHz	-150	-145
- Allan Variance Example:  $1\text{E}-11$  for 1s

### Environmental Parameters

- Storage Temperature Range: -55 to 105°C
- Vibration: IEC 68-2-06 Test Fc, Test condition 0.75mm 10G acceleration 10Hz to 500Hz, one cycle per 30mins 2hrs test time
- Shock: IEC 68-2-27, 50G, 11ms, half sine, 3 times in 3 directions

### Ordering Information

- Minimum data needed to open an enquiry:-  
Frequency  
Model  
Supply Voltage  
Output  
Frequency Stability (over operating temperature range)  
Operating Temperature Range  
Frequency Adjustment  
Reference Voltage Output

### Compliance

- RoHS Status (2015/863/EU)            Compliant
- REACH Status                              Compliant
- MSL Rating (JDEC-STD-033):        Not Applicable

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**Packaging Details**

- Pack Style: Bulk      Supplied tube or box packaging  
Pack Size: 60

**Electrical Specification - example values 3.3V**

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppb	mA	ns	%
4.0MHz	20.0MHz	0 to 60	±3.0	-	10	45/55
		-40 to 75	±5.0	-	10	45/55

*This document was correct at the time of printing; please contact your local sales office for the latest version.*

[Click to view latest version on our website.](#)

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