

ISSUE 1; February 2017

### Description

- Voltage controlled crystal oscillator in a ceramic package with a hermetically sealed metal lid

### Frequency Parameters

- Frequency: 1.0MHz to 60.0MHz
- Frequency Stability:  $\pm 20.00\text{ppm}$  to  $\pm 50.00\text{ppm}$
- Ageing (@ 25°C):  $\pm 3\text{ppm}$  max

### Electrical Parameters

- Supply Voltage: 3.3V  $\pm 5\%$

### Frequency Adjustment

- Pulling:  $\pm 100\text{ppm}$  min
- Control Voltage: 1.65V  $\pm 1.35\text{V}$
- Input Impedance: 100k $\Omega$  min
- Linearity:  $\pm 10\%$  max

### Operating Temperature Ranges

- 0 to 70°C
- 40 to 85°C

### Output Details

- Output Compatibility: HCMOS
- Drive Capability: 15pF max
- Start Up Time: 10ms max

### Output Control

- Standby Operation:  
Logic '1' (>70% Vs) to pad 2 enables oscillator output  
Logic '0' (<30% Vs) to pad 2 disables oscillator output: when disabled the oscillator output goes to the high impedance state  
No connection pad 2 enables oscillator output

### Output Levels

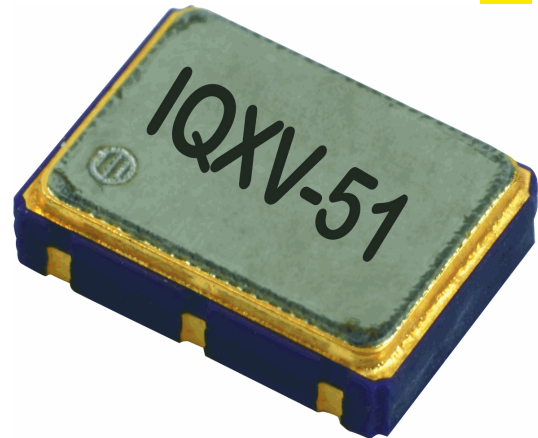
- VoH: >90% of Vs
- VoL: <10% of Vs

### Noise Parameters

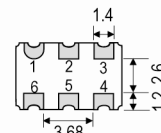
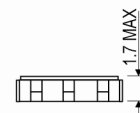
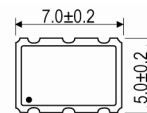
- Period Jitter (pk-pk): 100ps max
- Period Jitter (one sigma): 25ps max

### Environmental Parameters

- Storage Temperature Range: -55 to 125°C
- Drop: 1.2m drop (3 times) onto a hard surface
- Vibration: 1.5mm amplitude, 10-55-10Hz, full sine wave, 2mins in 3 mutually perpendicular planes, duration 2hrs in each plane



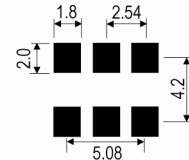
### Outline (mm)



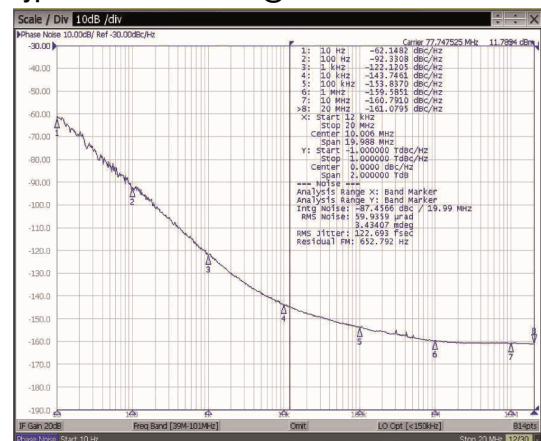
Underside View

- Pad Connections
- Voltage Control
  - Standby Operation
  - GND
  - Output
  - N/C
  - +Vs

### Solder Pad Layout



### Typical Phase Noise Plot @ 77.76MHz



### Sales Office Contact Details:

UK: +44 (0)1460 270200  
Germany: 0800 1808 443

France: 0800 901 383  
USA: +1.760.318.2824

Email: [info@iqdfrequencyproducts.com](mailto:info@iqdfrequencyproducts.com)  
Web: [www.iqdfrequencyproducts.com](http://www.iqdfrequencyproducts.com)

### Ordering Information

- Example  
10.0MHz IQXV-51  
HCMOS  $\pm 50$ ppm -40 to 85C 3.3V  $\pm 100$ ppm min
- Frequency\*  
Model\*  
Output  
Frequency Stability (over operating temperature range)\*  
Operating Temperature Range\*  
Supply Voltage  
Pullability  
(\*minimum required)

### Compliance

- RoHS Status (2011/65/EU)      Compliant
- REACH Status                      Compliant
- MSL Rating (JDEC-STD-033):    Not Applicable

### Packaging Details

- Pack Style: Bulk      Loose in bulk pack  
Pack Size: 1
- Pack Style: Reel      Tape & reel in accordance with EIA-481-D  
Pack Size: 1,000

### Electrical Specification - maximum limiting values 3.3V $\pm 5\%$

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
1.0MHz	20.0MHz	0 to 70	$\pm 20.0$	10	10	45/55%
		-40 to 85	$\pm 25.0$	10	10	45/55%
20.000001MHz	40.0MHz	0 to 70	$\pm 20.0$	15	8	45/55%
		-40 to 85	$\pm 25.0$	15	8	45/55%
40.000001MHz	60.0MHz	0 to 70	$\pm 20.0$	25	5	45/55%
		-40 to 85	$\pm 25.0$	25	5	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.](#)

### Sales Office Contact Details:

UK: +44 (0)1460 270200  
Germany: 0800 1808 443

France: 0800 901 383  
USA: +1.760.318.2824

Email: [info@iqdfrequencyproducts.com](mailto:info@iqdfrequencyproducts.com)  
Web: [www.iqdfrequencyproducts.com](http://www.iqdfrequencyproducts.com)