

ISSUE 2; September 2019

### Description

- Voltage controlled crystal oscillator in a ceramic package with a hermetically sealed metal lid
- Developed Frequencies:  
2.048MHz, 6.176MHz, 7.3728MHz, 10.0MHz, 10.245MHz, 10.7MHz, 12.16MHz, 12.288MHz, 14.1875MHz, 16.0MHz, 16.384MHz, 18.432MHz, 19.44MHz, 20.0MHz, 22.5792MHz, 24.145 MHz, 24.576MHz, 25.0MHz, 25.6MHz, 26.0MHz, 27.0MHz, 27.095MHz, 27.145MHz, 28.224MHz.
- 28.375MHz, 29.0MHz, 30.0MHz, 30.6875MHz, 30.72MHz, 32.0MHz, 32.286713MHz, 32.768MHz, 33.333333MHz, 35.328MHz, 38.88MHz, 39.0MHz, 40.0MHz, 44.736MHz, 49.152MHz, 50.0MHz, 51.0MHz, 54.0MHz, 57.6MHz, 61.44MHz, 65.36MHz, 70.656MHz, 74.1758MHz, 74.176MHz, 74.25MHz, 80.0MHz

### Frequency Parameters

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

### 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

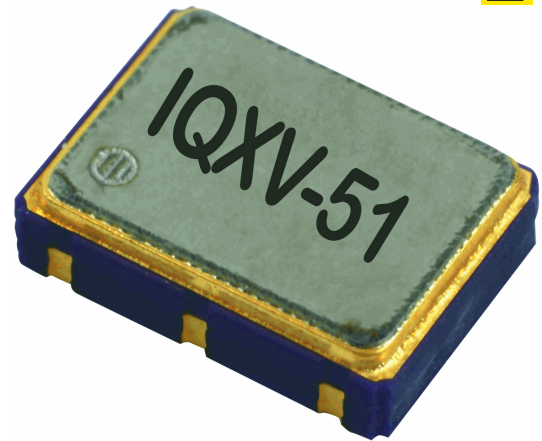
- Output Compatibility: HCMOS
- Drive Capability: 15pF max
- VoH: >90% of Vs
- VoL: <10% of Vs
- Start Up Time: 10ms max

### Output Control

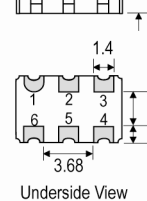
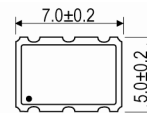
- Standby Operation:  
Logic '1' (>70% Vs) to pad 2 enables oscillator output  
Logic '0' (<30% Vs) to pad 2 disables oscillator output: when disabled the oscillator output goes to the high impedance state  
No connection pad 2 enables oscillator output

### Noise Parameters

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

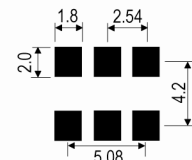


### Outline (mm)

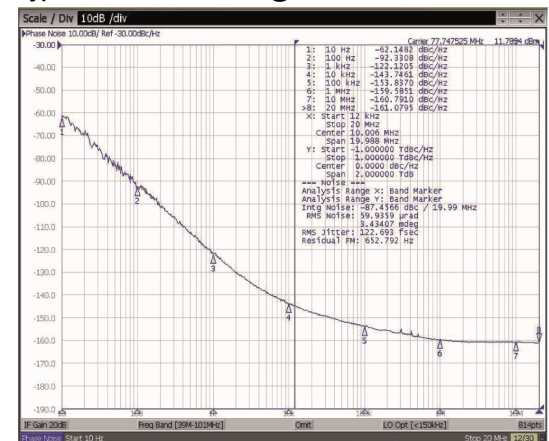


- Pad Connections
1. Voltage Control
  2. Standby Operation
  3. GND
  4. Output
  5. N/C
  6. +Vs

### Solder Pad Layout



### Typical Phase Noise Plot @ 77.76MHz



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### 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

### Ordering Information

- Example  
10.0MHz IQXV-51  
HCMOS ±50ppm -40 to 85C 3.3V ±100ppm 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: Reel      Tape & reel in accordance with EIA-481-D  
Pack Size: 1,000
- Pack Style: Bulk      Loose in bulk pack  
Pack Size: 1

### Electrical Specification - maximum limiting values 3.3V ±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	±20.0	10	10	45/55%
		-40 to 85	±25.0	10	10	45/55%
20.000001MHz	40.0MHz	0 to 70	±20.0	15	8	45/55%
		-40 to 85	±25.0	15	8	45/55%
40.000001MHz	60.0MHz	0 to 70	±20.0	25	5	45/55%
		-40 to 85	±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.*

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