

ISSUE 1; September 2021

### Description

- Voltage Controlled Crystal Oscillator (VCXO) with a LVPECL output in a hermetically sealed ceramic package with a metal lid.



### Frequency Parameters

- Frequency: 40.0MHz to 170.0MHz
- Frequency Stability:  $\pm 25.00\text{ppm}$  to  $\pm 50.00\text{ppm}$
- Ageing:  $\pm 2\text{ppm}$  max per year @ 25°C
- Frequency Stability: Inclusive of tolerance @ 25°C, operating temperature range, supply voltage variation and load variation, with VC = 1.65V.

### Electrical Parameters

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

### Frequency Adjustment

- Pulling:  $\pm 100\text{ppm}$  min
- Control Voltage: 1.65V  $\pm 1.5\text{V}$
- Input Impedance: 5M $\Omega$  min
- Transfer Sense: Positive

### Operating Temperature Ranges

- -10 to 70°C
- -40 to 85°C

### Output Details

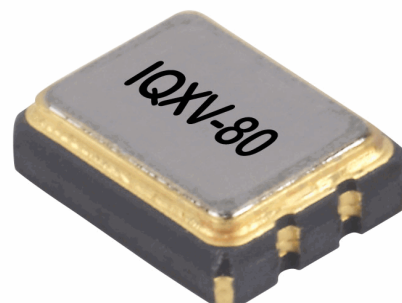
- Output Compatibility: LVPECL
- Drive Capability: 50 $\Omega$  Vs-2.0V
- Output Voltage Levels:
  - '1' Level VoH: Vs-1.025V to Vs-0.88V
  - '0' Level VoL: Vs-1.81V to Vs-1.62V

### Output Control

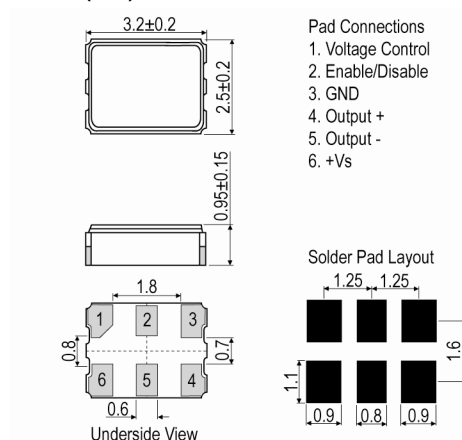
- Logic '1' (>70% Vs) to pad 2 enables oscillator output  
Logic '0' (<30% Vs) to pad 2 disables oscillator output; the oscillator output goes to the high impedance state  
No connection to pad 2 enables oscillator output
- Standby Current: 60 $\mu\text{A}$  max

### Noise Parameters

- Phase Noise (typ @ 77.76MHz, Vs=3.3V & VC=1.65V):
  - 65dBc/Hz @ 10Hz
  - 98dBc/Hz @ 100Hz
  - 124dBc/Hz @ 1kHz
  - 140dBc/Hz @ 10kHz
  - 148dBc/Hz @ 100kHz
  - 154dBc/Hz @ 1MHz
  - 157dBc/Hz @ 10MHz
- Phase Jitter (12kHz to 20MHz): 1ps rms max



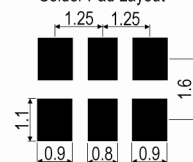
### Outline (mm)



#### Pad Connections

1. Voltage Control
2. Enable/Disable
3. GND
4. Output +
5. Output -
6. +Vs

#### Solder Pad Layout



### Sales Office Contact Details:

UK: +44 (0)1460 270200

USA: +1.760.318.2824

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

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

#### Environmental Parameters

- Storage Temperature Range: -55 to 125°C
- Drop: 75cm drop (3 times) onto hard wooden board
- Vibration: MIL-STD-202F, Method 204D, Test Condition D: 20G (10Hz-2000Hz), 4hrs in 3 mutually perpendicular planes (total 12hrs)

#### Manufacturing Details

- A suitable decoupling capacitor should be located as near to the oscillator as possible for power supply noise reduction. A large electrolytic capacitor should also be included at the power supply.

#### Ordering Information

- Frequency\*  
Model\*  
Output  
Frequency Stability (over operating temperature range)\*  
Operating Temperature Range\*  
Supply Voltage  
Pulling  
(\*minimum required)
- Example  
100.0MHz IQXV-80  
LVPECL ±50ppm -10 to 70C 3.3V ±100ppm min

#### Compliance

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

#### Packaging Details

- Pack Style: Reel      Tape & reel in accordance with EIA-481-D  
Pack Size: 2,000

#### Electrical Specification - maximum limiting values 3.3V ±5%

Frequency Min	Frequency Max	Temperature Range	Stability Min	Current Draw	Rise & Fall Time (80/20%)	Duty Cycle
		°C	ppm	mA	ns	%
40.0MHz	170.0MHz	-10 to 70	±25.0	50	0.5	45/55%
		-40 to 85	±25.0	50	0.5	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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Web: [www.iqdfrequencyproducts.com](http://www.iqdfrequencyproducts.com)