

ISSUE 1; June 2017

### 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

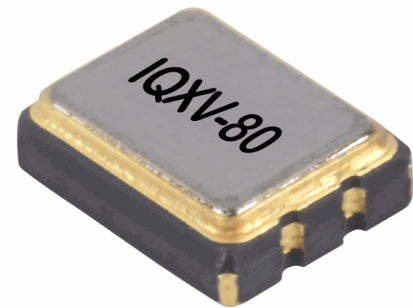
- Logic '1' (>70% Vs) to pad 2 enables oscillator output  
 Logic '0' (<30% Vs) to pad 2 disables oscillator output; the oscillator output goes to the high impedance state  
 No connection to pad 2 enables oscillator output
- Standby Current: 60 $\mu\text{A}$  max

### Noise Parameters

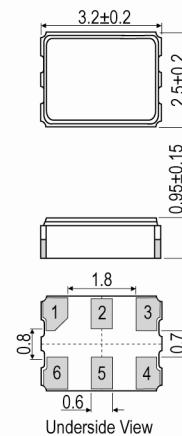
- Phase Noise (typ @ 77.76MHz, Vs=3.3V & VC=1.65V):  
 -65dBc/Hz @ 10Hz  
 -98dBc/Hz @ 100Hz  
 -124dBc/Hz @ 1kHz  
 -140dBc/Hz @ 10kHz  
 -148dBc/Hz @ 100kHz  
 -154dBc/Hz @ 1MHz  
 -157dBc/Hz @ 10MHz
- Phase Jitter (12kHz to 20MHz): 1ps rms max

### 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)

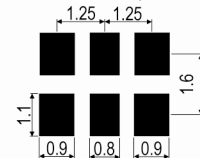


### Outline (mm)



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

### Solder Pad Layout



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#### 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 (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: 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%     |

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