

ISSUE 2; July 2019

### Description

- Standard 2.5 x 2.0mm 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  $\pm 100.00\text{ppm}$
- Ageing:  $\pm 3\text{ppm}$  max per year @ 25°C

### Electrical Parameters

- Supply Voltage: 3.3V  $\pm 10\%$

### Operating Temperature Ranges

- 10 to 70°C
- 40 to 85°C

### Output Details

- Output Compatibility: HCMOS
- Drive Capability: 15pF
- Output Voltage Levels:
  - Output Low (VoL): 10%Vs max
  - Output High (VoH): 90%Vs min
- Start Up Time: 10ms max
  - 0.7ms typ to 90% of final amplitude (under ideal conditions @ 25°C)

### Output Control

- Enable/Disable:
  - Logic '1' ( $\geq 70\%$  Vs) to pad 1 enables oscillator output.
  - Logic '0' ( $\leq 30\%$  Vs) to pad 1 disables oscillator output; when disabled the oscillator output goes to the high impedance state.
  - No connection to pad 1 enables oscillator output.
- Stand-by Current: 10 $\mu$ A max, 1.0 $\mu$ A typ @ 25°C

### Noise Parameters

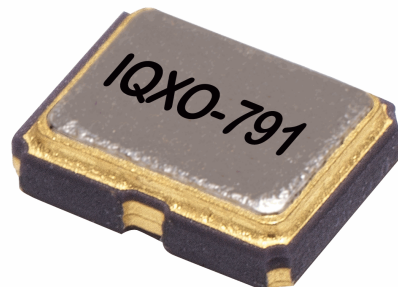
- Period Jitter (pk-pk):  $\pm 80\text{ps}$  typ
- Period Jitter ( $1\sigma$ ):  $\pm 10\text{ps}$  typ
- Phase Jitter (12kHz to 20MHz): 1ps rms max

### Environmental Parameters

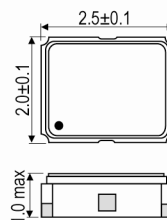
- Storage Temperature Range: -55 to 125°C
- Mechanical Shock: MIL-STD-883, Method 2002, Condition B (or comparable).
- Vibration: MIL-STD-883, Method 2007, Condition A (or comparable).

### Manufacturing Details

- Note: Do not connect inductor or bead between pad 2 and GND as it can make the output unstable.
- RoHS Reflow: 260°C max for 10secs max



### Outline (mm)

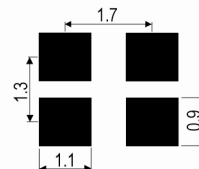
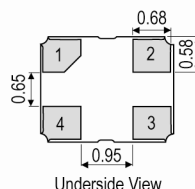


### Pad Connections

1. Enable/Disable
2. GND
3. Output
4. +Vs

Note: Connect bypass capacitor 0.1 $\mu$ F between +Vs and GND

### Solder Pad Layout



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### Ordering Information

- Frequency\*
  - Model\*
  - Output
  - Frequency Stability (over operating temperature range)\*
  - Operating Temperature Range\*
  - Supply Voltage
  - (\*minimum required)
- Example
  - 20.0MHz IQXO-791
  - HCMOS ±50ppm -10 to 70C 3.3V

### 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-481D  
Pack Size: 3,000
- Pack Style: Cutt      Cut tape  
Pack Size: 100

### Electrical Specification - maximum limiting values 3.3V ±10%

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
1.0MHz	19.999999MHz	-10 to 70	±20.0	7	7	40/60%
		-40 to 85	±50.0	7	7	40/60%
20.0MHz	31.999999MHz	-10 to 70	±20.0	12	7	40/60%
		-40 to 85	±50.0	12	7	40/60%
32.0MHz	60.0MHz	-10 to 70	±20.0	20	7	40/60%
		-40 to 85	±50.0	20	7	40/60%

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