

ISSUE 4; January 2025

Description

- Standard 2.5 x 2.0mm oscillator in a ceramic package with a hermetically sealed metal lid.



Frequency Parameters

- Frequency: 1.0MHz to 156.25MHz
- Frequency Stability: $\pm 50.00\text{ppm}$ to $\pm 100.00\text{ppm}$
- Ageing: $\pm 5\text{ppm}$ max per year @ 25°C

Electrical Parameters

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

Operating Temperature Ranges

- 20 to 70°C
- 40 to 85°C

Output Details

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

Output Control

- Standby Operation:
 - 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.
- Standby Current:
 - 1.0 μ A typ @25°C
 - 10 μ A max

Noise Parameters

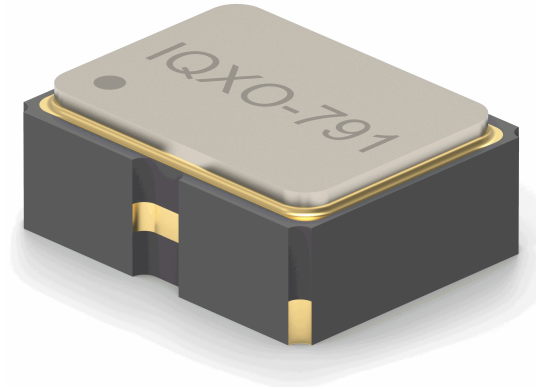
- Period Jitter (pk-pk): $\pm 80\text{ps}$ typ
- Period Jitter (1 σ): $\pm 10\text{ps}$ typ
- RMS Phase Jitter (12kHz to 20MHz): 1ps rms max

Environmental Parameters

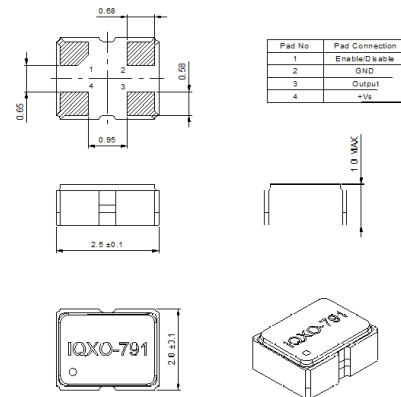
- Storage Temperature Range: -55 to 125°C
- Shock: Half Sine shock pulse with peak acceleration 500g; Pulse duration: 0.3ms
- Vibration: MIL-STD-202 Method 204. 5g for 20 minutes, 12 cycles in each of the 3 orientations, 10 - 2000 Hz. As per Table 11 of AEC-Q200.

Manufacturing Details

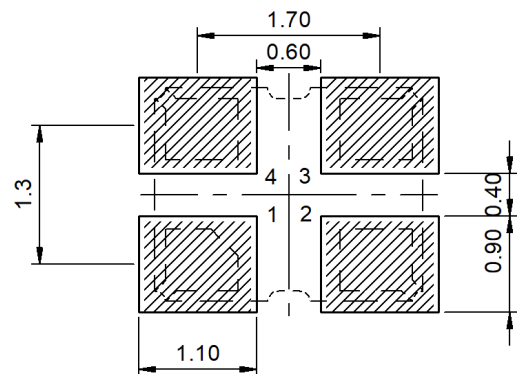
- RoHS Reflow: 260°C max for 10secs max



Outline (mm)



Recommended 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 ± 50 ppm -20 to 70C 3.3V

Compliance

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

Packaging Details

- Tape & reel in accordance with EIA-481
Quantities below the standard reel size to be supplied on cut tape.
Standard Pack Quantity: 3,000

Electrical Specification - maximum limiting values 3.3V $\pm 10\%$

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
1.0MHz	60.0MHz	-20 to 70 -40 to 85	± 50.0 ± 50.0	25 25	7 7	40/60 40/60
60.000001MHz	156.25MHz	-20 to 70 -40 to 85	± 50.0 ± 50.0	20 20	7 7	40/60 40/60

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