



IQXO-79x

IQXO-79x

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

Model Name	Description
IQXO-791	A 3.3V version
IQXO-793	A 2.5V version
IQXO-794	A 1.8V version

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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 μ A max, 1.0 μ A typ @ 25°C

Noise Parameters

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

Environmental Parameters

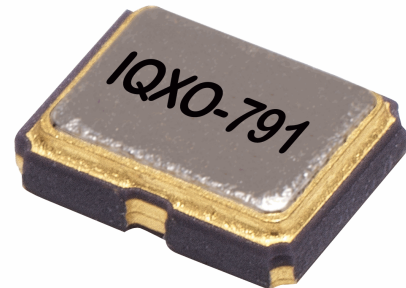
- Storage Temperature Range: -55 to 125°C
- Mechanical Shock: MIL-STD-883, Method 2002, Condition B (or comparable).
- Vibration: MIL-STD-883, Method 2007, Condition A (or comparable).

Manufacturing Details

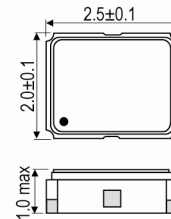
- Note: Do not connect inductor or bead between pad 2 and GND as it can make the output unstable.

Ordering Information

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



Outline (mm)

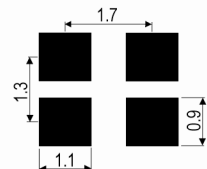
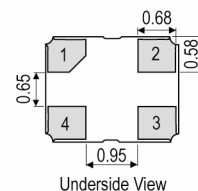


Pad Connections

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

Note: Connect bypass capacitor 0.1 μ F between +Vs and GND

Solder Pad Layout



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Compliance

- RoHS Status (2015/863/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 \pm 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 -40 to 85	\pm 20.0 \pm 50.0	7 7	7 7	40/60% 40/60%
20.0MHz	31.999999MHz	-10 to 70 -40 to 85	\pm 20.0 \pm 50.0	12 12	7 7	40/60% 40/60%
32.0MHz	60.0MHz	-10 to 70 -40 to 85	\pm 20.0 \pm 50.0	20 20	7 7	40/60% 40/60%

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Description

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



Frequency Parameters

- Frequency: 1.0MHz to 50.0MHz
- Frequency Stability: $\pm 20.00\text{ppm}$ to $\pm 100.00\text{ppm}$
- Ageing: $\pm 3\text{ppm}$ max per year

Electrical Parameters

- Supply Voltage: 2.5V $\pm 5\%$

Operating Temperature Ranges

- 0 to 70°C
- 40 to 85°C

Output Details

- Output Compatibility: HCMOS
- Drive Capability: 15pF
- Output Voltage High: 90% of V_s min
- Output Voltage Low: 10% of V_s max

Output Control

- Standby Function (pin1):
No Connection = Output Enabled
>70% V_s = Output Enabled
<30% V_s = Output Disabled
When disabled output goes to high impedance state
- Start Up Time: 10ms max

Noise Parameters

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

Environmental Parameters

- Storage Temperature Range: -55 to 125°C
- Shock: MIL-STD-202, Method 213. Or comparable.
- Vibration: MIL-STD-883, Method 2007. Or comparable.

Compliance

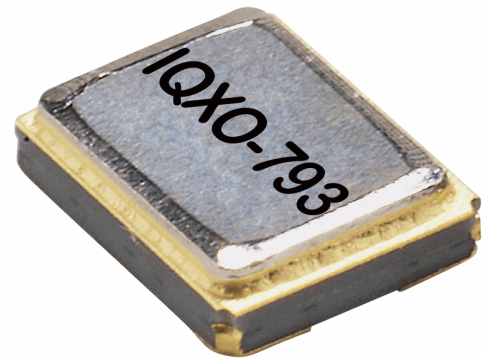
- RoHS Status (2015/863/EU): Compliant
- REACH Status: Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

Packaging Details

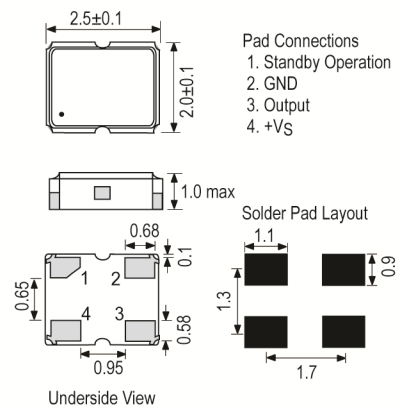
- Pack Style: Reel: Tape & reel in accordance with EIA-481D
Pack Size: 3,000
- Pack Style: Cutt: In tape, cut from a reel
Pack Size: 100

Electrical Specification - maximum limiting values 2.5V $\pm 5\%$

Frequency Min	Frequency Max	Temperature Range	Stability	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
1.0MHz	50.0MHz	0 to 70	± 20.0	10	10	40/60%
		-40 to 85	± 50.0	10	10	40/60%



Outline (mm)



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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

Electrical Parameters

- Supply Voltage: 1.8V $\pm 5\%$

Operating Temperature Ranges

- 0 to 70°C
- 40 to 85°C

Output Details

- Output Compatibility: HCMOS
- Drive Capability: 15pF
- Output Voltage High: 90% of VS min
Output Voltage Low: 10% of VS max
- Start Up Time: 10ms max
0.9ms typ to 90% of final amplitude (under ideal conditions @ 25°C)

Output Control

- Standby Function (pin1):
No Connection = Output Enabled
>70% VS = Output Enabled
<30% VS = Output Disabled
(when disabled output goes to high impedance state)
- Standby Current: 10 μ A max, 0.5 μ A typ @ 25°C

Noise Parameters

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

Environmental Parameters

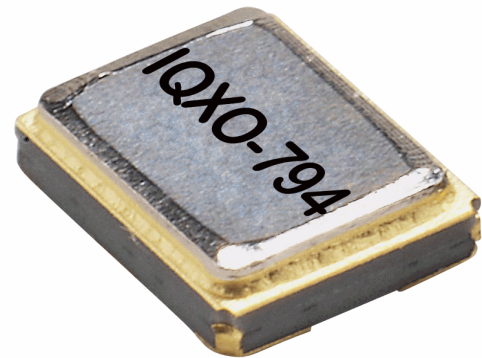
- Shock: MIL-STD-202, Method 213. Or comparable.
- Vibration: MIL-STD-883, Method 2007. Or comparable.
- Storage Temperature Range: -55 to 125°C

Compliance

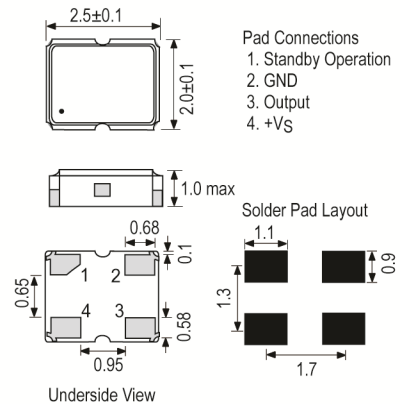
- RoHS Status (2015/863/EU): Compliant
- REACH Status: Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

Packaging Details

- Pack Style: Cutt In tape, cut from a reel
Pack Size: 100
- Pack Style: Reel Tape & reel in accordance with EIA-481D
Pack Size: 3,000



Outline (mm)



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Electrical Specification - maximum limiting values 1.8V \pm 5%

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
1.0MHz	60.0MHz	0 to 70	\pm 20.0	10	10	40/60%
		-40 to 85	\pm 50.0	10	10	40/60%

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