

ISSUE 1; March 2018

Description

- Very low stability crystal oscillator in a hermetically sealed ceramic package with a metal lid that achieves superior performance compared with standard clock oscillators.



Frequency Parameters

- Frequency: 10.0MHz to 160.0MHz
- Frequency Stability: $\pm 5.00\text{ppm}$ to $\pm 20.00\text{ppm}$
- Frequency Stability (for ± 10 , ± 15 and $\pm 20\text{ppm}$): Includes frequency tolerance @ 25°C , operating temperature range, supply voltage variation, load variation and 1st year's ageing @ 25°C .
Frequency Stability (for $\pm 5\text{ppm}$): Includes frequency tolerance @ 25°C and operating temperature range only.

Electrical Parameters

- Supply Voltage: $1.8\text{V} \pm 5\%$

Operating Temperature Ranges

- -40 to 85°C

Output Details

- Output Compatibility: HCMOS
- Drive Capability: 15pF max
- Output Voltage Levels:
Output Low (VoL): $10\%\text{Vs}$ max
Output High (VoH): $90\%\text{Vs}$ min
- Start Up Time (0V to Vs): 5ms max

Output Control

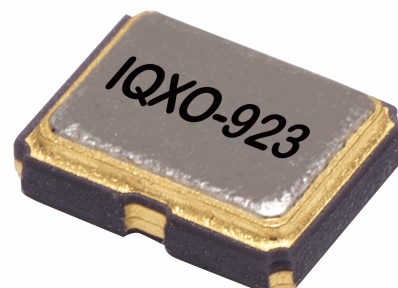
- Enable/Disable Mode:
Logic '0' ($30\%\text{Vs}$ max) to pad 1 disables oscillator output, the output goes to a high impedance state.
Logic '1' ($70\%\text{Vs}$ min) or no connection to pad 1 enables oscillator output.

Noise Parameters

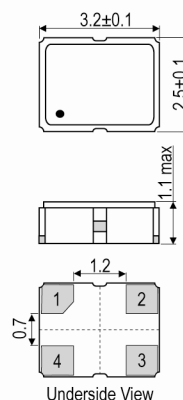
- Period Jitter: 5ps typ @ 40MHz and 3.3V
- Phase Jitter (12kHz to 20MHz): 0.4ps typ @ 40MHz and 3.3V
- Phase Noise (typ @ 40MHz and 3.3V):
 -67dBc/Hz @ 10Hz
 -99dBc/Hz @ 100Hz
 -125dBc/Hz @ 1kHz
 -144dBc/Hz @ 10kHz
 -151dBc/Hz @ 10kHz
 -154dBc/Hz @ 1MHz
 -156dBc/Hz @ 10MHz

Environmental Parameters

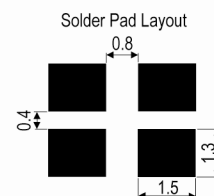
- Storage Temperature Range: -55 to 125°C
- Drop Test: dropped three times from a height of 30cm onto a hard wooden board.
- Vibration (MIL-STD-202F, Method 201A): frequency range $10\sim 55\text{Hz}$ in X, Y and Z axes for 2 hours each (6 hours total).



Outline (mm)



Pad Connections
 1. Enable/Disable
 2. GND
 3. Output
 4. $+V_s$





ISSUE 1; March 2018

Ordering Information

- Frequency*
Model*
Output
Frequency Stability (over operating temperature range)*
Operating Temperature Range*
Supply Voltage
(*minimum required)
- Example
20.0MHz IQXT-923-18
HCMOS ± 10 ppm -40 to 85C 1.8V

Compliance

- RoHS Status (2011/65/EU) Compliant
- REACH Status Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

Packaging Details

- Pack Style: Reel Tape and reel in accordance with
Pack Size: 1,000 EIA-481-D
- Pack Style: Cutt In tape cut from a reel
Pack Size: 100

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

Frequency Min	Frequency Max	Temperature Range	Stability (minimum)	Current Draw	Rise and Fall Time (10-90%)	Duty Cycle
		°C	ppm	mA	ns	%
10.0MHz	39.999999MHz	-40 to 85	± 5.0	11	6	45/55%
40.0MHz	79.999999MHz	-40 to 85	± 5.0	11	3	45/55%
80.0MHz	160.0MHz	-40 to 85	± 5.0	20	3	45/55%

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ISSUE 2; March 2018

Description

- Very low stability crystal oscillator in a hermetically sealed ceramic package with a metal lid that achieves superior performance compared with standard clock oscillators.



Frequency Parameters

- Frequency: 10.0MHz to 160.0MHz
- Frequency Stability: $\pm 5.00\text{ppm}$ to $\pm 20.00\text{ppm}$
- Frequency Stability (for ± 10 , ± 15 and $\pm 20\text{ppm}$): Includes frequency tolerance @ 25°C , operating temperature range, supply voltage variation, load variation and 1st year's ageing @ 25°C .
Frequency Stability (for $\pm 5\text{ppm}$): Includes frequency tolerance @ 25°C and operating temperature range only.

Electrical Parameters

- Supply Voltage: $3.3\text{V} \pm 5\%$

Operating Temperature Ranges

- -40 to 85°C

Output Details

- Output Compatibility: HCMOS
- Drive Capability: 15pF max
- Output Voltage Levels:
Output Low (VoL): $10\%\text{Vs}$ max
Output High (VoH): $90\%\text{Vs}$ min
- Start Up Time (0V to Vs): 5ms max

Output Control

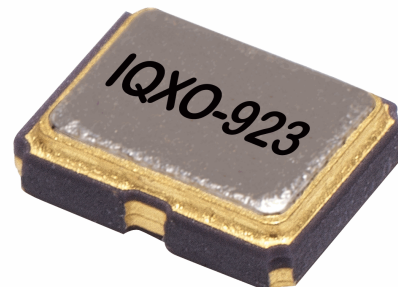
- Enable/Disable Mode:
Logic '0' ($30\%\text{Vs}$ max) to pad 1 disables oscillator output, the output goes to a high impedance state.
Logic '1' ($70\%\text{Vs}$ min) or no connection to pad 1 enables oscillator output.

Noise Parameters

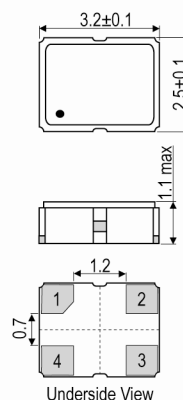
- Period Jitter: 5ps typ @ 40MHz and 3.3V
- Phase Jitter (12kHz to 20MHz): 0.4ps typ @ 40MHz and 3.3V
- Phase Noise (typ @ 40MHz and 3.3V):
 -67dBc/Hz @ 10Hz
 -99dBc/Hz @ 100Hz
 -125dBc/Hz @ 1kHz
 -144dBc/Hz @ 10kHz
 -151dBc/Hz @ 10kHz
 -154dBc/Hz @ 1MHz
 -156dBc/Hz @ 10MHz

Environmental Parameters

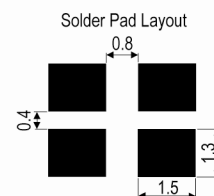
- Storage Temperature Range: -55 to 125°C
- Drop Test: dropped three times from a height of 30cm onto a hard wooden board.
- Vibration (MIL-STD-202F, Method 201A): frequency range $10\sim 55\text{Hz}$ in X, Y and Z axes for 2 hours each (6 hours total).



Outline (mm)



Pad Connections
 1. Enable/Disable
 2. GND
 3. Output
 4. $+V_s$



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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 IQXT-923-33
HCMOS ± 10 ppm -40 to 85C 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 and reel in accordance with
Pack Size: 1,000 EIA-481-D
- Pack Style: Cutt In tape cut from a reel
Pack Size: 100

Electrical Specification - maximum limiting values 3.3V $\pm 5\%$

Frequency Min	Frequency Max	Temperature Range	Stability (minimum)	Current Draw	Rise and Fall Time (10-90%)	Duty Cycle
		°C	ppm	mA	ns	%
10.0MHz	39.999999MHz	-40 to 85	± 5.0	11	6	45/55%
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80.0MHz	160.0MHz	-40 to 85	± 5.0	20	3	45/55%

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Sales Office Contact Details:

UK: +44 (0)1460 270200
Germany: 0800 1808 443

France: 0800 901 383
USA: +1.760.318.2824

Email: info@iqdfrequencyproducts.com
Web: www.iqdfrequencyproducts.com