



IQXO-54x AUTO

Ceramic package with a hermetically seam sealed metal lid suitable for automotive applications.
Qualified to AEC-Q200 and with IATF-16949:2016 release. Not suitable for safety critical applications.

Model Name	Description
IQXO-540 AUTO	A 3.3V version
IQXO-541 AUTO	A 2.5V version
IQXO-542 AUTO	A 1.8V version

ISSUE 1; July 2019

Description

- Ceramic package with a hermetically seam sealed metal lid suitable for automotive applications. Qualified to AEC-Q200 and with IATF-16949:2016 release. Not suitable for safety critical applications.



Frequency Parameters

- Frequency 4.0MHz to 50.0MHz
- Frequency Stability $\pm 25.00\text{ppm}$ 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

- -40 to 85°C
- -40 to 125°C

Output Details

- Output Compatibility CMOS
- Drive Capability 15pF

Output Control

- Enable/Disable Operation:
Logic '1' (>70% Vs) to pad 1 enables oscillator output.
Logic '0' (<30% Vs) to pad 1 disables oscillator output; the oscillator output goes to the high impedance state.
No connection to pad 1 enables oscillator output.
- Standby Current:
-40 to 85°C: 10µA max
-40 to 125°C: 20µA max

Environmental Parameters

- Storage Temperature Range: -55 to 125°C
- Qualified to AEC-Q200

Ordering Information

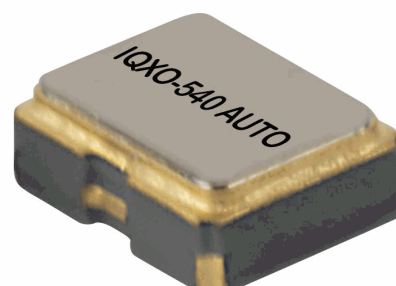
- Frequency*
Model*
Output
Frequency Stability*
Operating Temperature Range*
Supply Voltage
(*minimum required)
- Example
20.0MHz IQXO-540 AUTO
CMOS $\pm 100\text{ppm}$ -40 to 125C 3.3V

Compliance

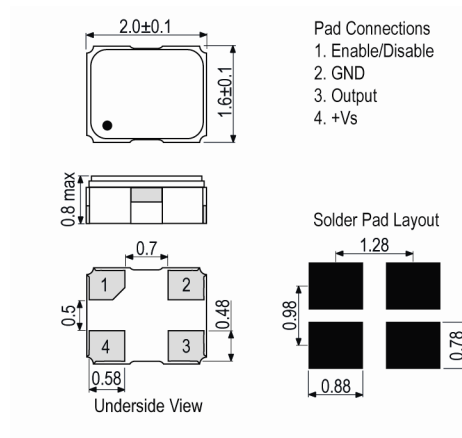
- RoHS Status (2011/65/EU) Compliant
- REACH Status Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

Packaging Details

- Pack Style: Reel Tape & reel in accordance with EIA-481-D
Pack Size: 1,000
- Pack Style: Cutt In tape, cut from a reel
Pack Size: 100
- Pack Style: RL3K Tape & reel in accordance with EIA-481-D
Pack Size: 3,000



Outline (mm)





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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	%
4.0MHz	9.999999MHz	-40 to 85	\pm 25.0	5	5	40/60%
		-40 to 125	\pm 50.0	5	5	40/60%
10.0MHz	19.999999MHz	-40 to 85	\pm 25.0	6	5	40/60%
		-40 to 125	\pm 50.0	6	5	40/60%
20.0MHz	31.999999MHz	-40 to 85	\pm 25.0	7	5	40/60%
		-40 to 125	\pm 50.0	7	5	40/60%
32.0MHz	50.0MHz	-40 to 85	\pm 25.0	8	5	40/60%
		-40 to 125	\pm 50.0	8	5	40/60%

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Frequency Parameters

- Frequency 4.0MHz to 50.0MHz
- Frequency Stability $\pm 25.00\text{ppm}$ to $\pm 100.00\text{ppm}$
- Ageing $\pm 5\text{ppm}$ max per year @ 25°C

Electrical Parameters

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

Operating Temperature Ranges

- -40 to 85°C
- -40 to 125°C

Output Details

- Output Compatibility CMOS
- Drive Capability 15pF

Output Control

- Enable/Disable Operation:
Logic '1' (>70% Vs) to pad 1 enables oscillator output.
Logic '0' (<30% Vs) to pad 1 disables oscillator output; the oscillator output goes to the high impedance state.
No connection to pad 1 enables oscillator output.
- Standby Current:
-40 to 85°C: 10 μ A max
-40 to 125°C: 20 μ A max

Environmental Parameters

- Storage Temperature Range: -55 to 125°C
- Qualified to AEC-Q200

Ordering Information

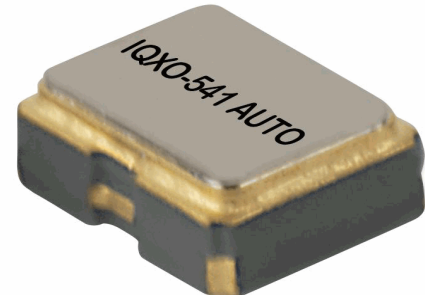
- Frequency*
Model*
Output
Frequency Stability*
Operating Temperature Range*
Supply Voltage
(*minimum required)
- Example
20.0MHz IQXO-541 AUTO
CMOS $\pm 100\text{ppm}$ -40 to 125C 2.5V

Compliance

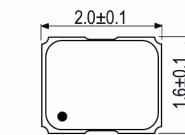
- RoHS Status (2011/65/EU) Compliant
- REACH Status Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

Packaging Details

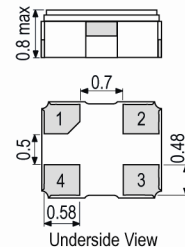
- Pack Style: RL3K Tape & reel in accordance with EIA-481-D
Pack Size: 3,000
- Pack Style: Reel Tape & reel in accordance with EIA-481-D
Pack Size: 1,000



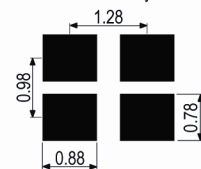
Outline (mm)



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



Solder Pad Layout





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

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
4.0MHz	9.999999MHz	-40 to 85	\pm 25.0	4	5	40/60%
		-40 to 125	\pm 50.0	4	5	40/60%
10.0MHz	19.999999MHz	-40 to 85	\pm 25.0	5	5	40/60%
		-40 to 125	\pm 50.0	5	5	40/60%
20.0MHz	31.999999MHz	-40 to 85	\pm 25.0	6	5	40/60%
		-40 to 125	\pm 50.0	6	5	40/60%
32.0MHz	50.0MHz	-40 to 85	\pm 25.0	7	5	40/60%
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- Frequency Stability $\pm 25.00\text{ppm}$ to $\pm 100.00\text{ppm}$
- Ageing $\pm 5\text{ppm}$ max per year @ 25°C

Electrical Parameters

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

Operating Temperature Ranges

- -40 to 85°C
- -40 to 125°C

Output Details

- Output Compatibility CMOS
- Drive Capability 15pF

Output Control

- Enable/Disable Operation:
Logic '1' (>70% Vs) to pad 1 enables oscillator output.
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Environmental Parameters

- Storage Temperature Range: -55 to 125°C
- Qualified to AEC-Q200

Ordering Information

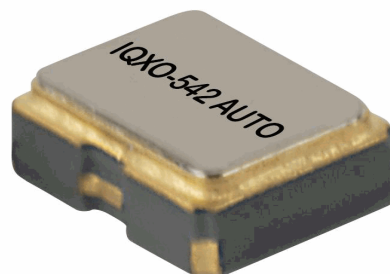
- Frequency*
Model*
Output
Frequency Stability*
Operating Temperature Range*
Supply Voltage
(*minimum required)
- Example
20.0MHz IQXO-542 AUTO
CMOS $\pm 100\text{ppm}$ -40 to 125C 1.8V

Compliance

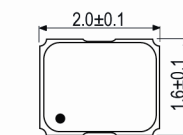
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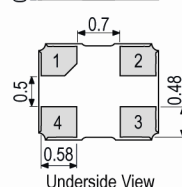
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Pack Size: 100
- Pack Style: RL3K Tape & reel in accordance with EIA-481-D
Pack Size: 3,000
- Pack Style: Reel Tape & reel in accordance with EIA-481-D
Pack Size: 1,000



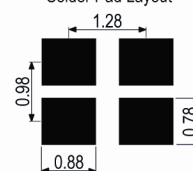
Outline (mm)



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1. Enable/Disable
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Solder Pad Layout



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4.0MHz	9.999999MHz	-40 to 85	\pm 25.0	3	6	40/60%
		-40 to 125	\pm 50.0	3	6	40/60%
10.0MHz	19.999999MHz	-40 to 85	\pm 25.0	4	6	40/60%
		-40 to 125	\pm 50.0	4	6	40/60%
20.0MHz	31.999999MHz	-40 to 85	\pm 25.0	5	5	40/60%
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32.0MHz	50.0MHz	-40 to 85	\pm 25.0	6	5	40/60%
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