



## **IQXO-44x**

**Tight stability, hermetically sealed oscillator in a 2.5 x 2.0mm SMD package**

<b>Model Name</b>	<b>Description</b>
<b>IQXO-445</b>	<b>A 3.3V version</b>
<b>IQXO-446</b>	<b>A 3.0V version</b>
<b>IQXO-447</b>	<b>A 2.5V version</b>

ISSUE 1; February 2019

### Description

- Tight stability, hermetically sealed oscillator in a 2.5 x 2.0mm SMD package



### Frequency Parameters

- Frequency 4.0MHz to 54.0MHz
- Frequency Stability  $\pm 10.00\text{ppm}$  to  $\pm 20.00\text{ppm}$
- Frequency Stability is inclusive of tolerance @ 25°C, operating temperature range, supply voltage variation, load variation and ageing in 1st year @ 25°C.
- Developed Frequencies: 8.0MHz, 10.0MHz, 25.0MHz, 26.0MHz, 40.0MHz, 50.0MHz, 54.0MHz.

### 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 Control

- Logic '1' ( $\geq 70\%V_s$ ) to pad 1 enables oscillator output. Logic '0' ( $\leq 30\%V_s$ ) 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: 10 $\mu$ A max

### Output Levels

- VoH: 90%Vs min
- VoL: 10%Vs max

### Noise Parameters

- Period Jitter (RMS 1 $\sigma$ ): 3ps typ

### Environmental Parameters

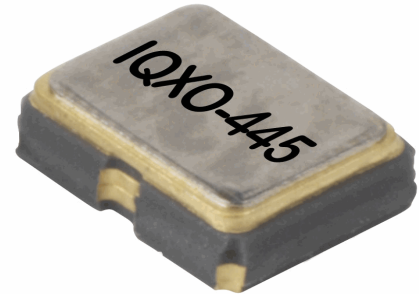
- Storage Temperature Range: -40 to 85°C
- Drop: 100cm drop (3 times) onto hard wooden board.
- Vibration: Frequency 10Hz-55Hz, amplitude 1.5mm (10Hz-36Hz), 4G (36Hz-55Hz), sweep time 1min/oct, duration 2hrs in 3 mutually perpendicular planes.

### Manufacturing Details

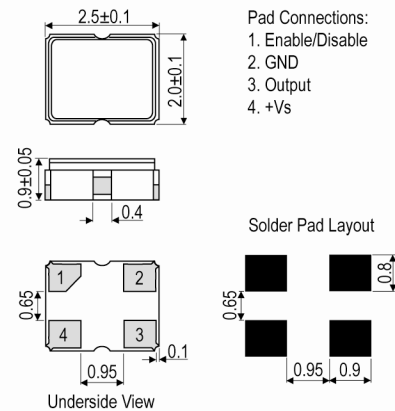
- Maximum Process Temperature: 260°C (10secs max)

### Ordering Information

- Frequency\*  
Model\*  
Output Compatibility  
Frequency Stability (over operating temperature range)\*  
Operating Temperature Range\*  
Supply Voltage  
(\*minimum required)
- Example  
8.0MHz IQXO-445  
CMOS  $\pm 15\text{ppm}$  -40 to 85C 3.3V



### Outline (mm)



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#### 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: 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	%
4.0MHz	54.0MHz	-20 to 70	$\pm$ 10.0	7	5	45/55%
		-40 to 85	$\pm$ 10.0	7	5	45/55%

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### Frequency Parameters

- Frequency 4.0MHz to 54.0MHz
- Frequency Stability  $\pm 10.00\text{ppm}$  to  $\pm 20.00\text{ppm}$
- Frequency Stability is inclusive of tolerance @ 25°C, operating temperature range, supply voltage variation, load variation and ageing in 1st year @ 25°C.
- Developed Frequencies: 8.0MHz, 10.0MHz, 25.0MHz, 26.0MHz, 40.0MHz, 50.0MHz, 54.0MHz.

### Electrical Parameters

- Supply Voltage 3.0V  $\pm 10\%$

### Operating Temperature Ranges

- -20 to 70°C
- -40 to 85°C

### Output Details

- Output Compatibility CMOS
- Drive Capability 15pF

### Output Control

- Logic '1' ( $\geq 70\%V_s$ ) to pad 1 enables oscillator output. Logic '0' ( $\leq 30\%V_s$ ) 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: 10 $\mu$ A max

### Output Levels

- VoL: 10%Vs max
- VoH: 90%Vs min

### Noise Parameters

- Period Jitter (RMS 1 $\sigma$ ): 3ps typ

### Environmental Parameters

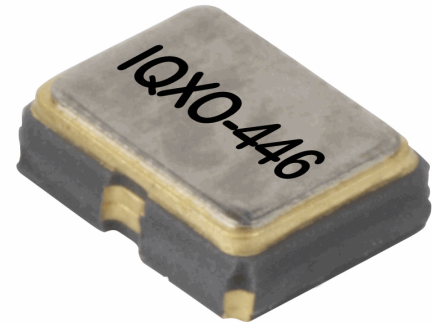
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- Drop: 100cm drop (3 times) onto hard wooden board.
- Vibration: Frequency 10Hz-55Hz, amplitude 1.5mm (10Hz-36Hz), 4G (36Hz-55Hz), sweep time 1min/oct, duration 2hrs in 3 mutually perpendicular planes.

### Manufacturing Details

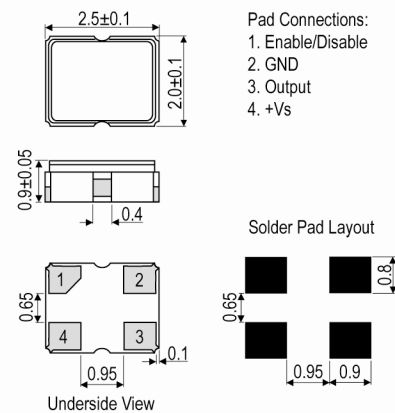
- Maximum Process Temperature: 260°C (10secs max)

### Ordering Information

- Frequency\*  
Model\*  
Output Compatibility  
Frequency Stability (over operating temperature range)\*  
Operating Temperature Range\*  
Supply Voltage  
(\*minimum required)
- Example  
8.0MHz IQXO-446  
CMOS  $\pm 15\text{ppm}$  -40 to 85C 3.0V



### Outline (mm)



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- REACH Status Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

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Pack Size: 3,000
- Pack Style: Cutt Cut tape  
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### Electrical Parameters

- Supply Voltage 2.5V  $\pm 10\%$

### Operating Temperature Ranges

- -20 to 70°C
- -40 to 85°C

### Output Details

- Output Compatibility CMOS
- Drive Capability 15pF

### Output Control

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- VoL: 10%Vs max
- VoH: 90%Vs min

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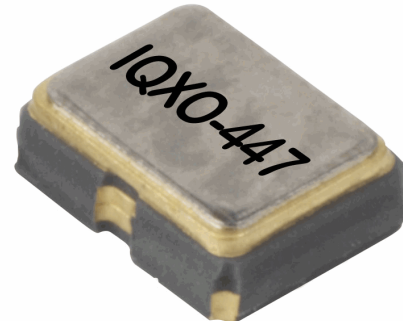
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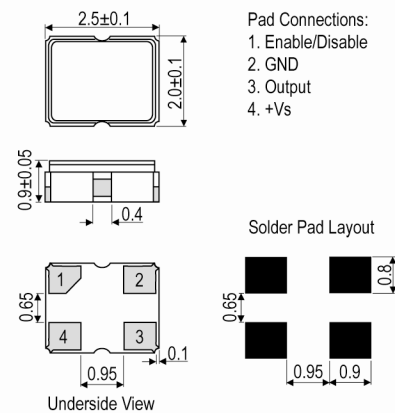
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Output Compatibility  
Frequency Stability (over operating temperature range)\*  
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8.0MHz IQXO-447  
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- MSL Rating (JDEC-STD-033):    Not Applicable

### Packaging Details

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

Electrical Specification - maximum limiting values 2.5V  $\pm$ 10%

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
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