



## IQXT-205-3

IQXT-205-3

IQXT-205-3 is a 2.0 x 1.6mm SMD Temperature Compensated Crystal Oscillator (TCXO) in a hermetically sealed package with a wide operating temperature range.

Model Name	Description
IQXT-205-3-18	A 1.8V version
IQXT-205-3-25	A 2.5V version
IQXT-205-3-28	A 2.8V version
IQXT-205-3-30	A 3.0V version
IQXT-205-3-33	A 3.3V version

ISSUE 1; June 2023

### Description

- IQXT-205-3-18 is a 2.0 x 1.6mm SMD Temperature Compensated Crystal Oscillator (TCXO) in a hermetically sealed package with a wide operating temperature range.
- Developed frequencies: 16.368, 16.369, 19.2, 26.0, 33.6, 38.4 and 52.0MHz

### Frequency Parameters

- Frequency 13.0MHz to 52.0MHz
- Frequency Tolerance Max  $\pm 1.50\text{ppm}$
- Tolerance Condition @ 25°C  $\pm 2^\circ\text{C}$
- Frequency Stability  $\pm 0.50\text{ppm}$
- Ageing  $\pm 1\text{ppm}$  max per year @ 25°C  $\pm 2^\circ\text{C}$
- Frequency Tolerance: Referred to nominal frequency before reflow soldering.
- IR Reflow Resistance (@ 25°C  $\pm 2^\circ\text{C}$  ref to frequency before reflow):  $\pm 1\text{ppm}$  max, 24hrs after reflow
- Supply Voltage Variation (@  $\pm 5\%$  change):  $\pm 0.1\text{ppm}$  max
- Load Variation (@  $\pm 10\%$  change):  $\pm 0.1\text{ppm}$  max

### Electrical Parameters

- Supply Voltage 1.8V  $\pm 5\%$
- Absolute Maximum Ratings: Supply Voltage: -0.6V to 4.6V

### Operating Temperature Ranges

- 40 to 105°C

### Output Details

- Output Compatibility Clipped Sine
- Drive Capability 10k $\Omega$ //10pF
- Output: DC coupled
- Output Level: 0.8V pk-pk min
- Start Up Time (90% of V pk-pk): 2ms max
- Start Up Time (within  $\pm 0.5\text{ppm}$ ): 2ms max

### Noise Parameters

- Phase Noise (typ): -135dBc/Hz @ 1kHz

### Environmental Parameters

- Storage Temperature Range: -40 to 105°C

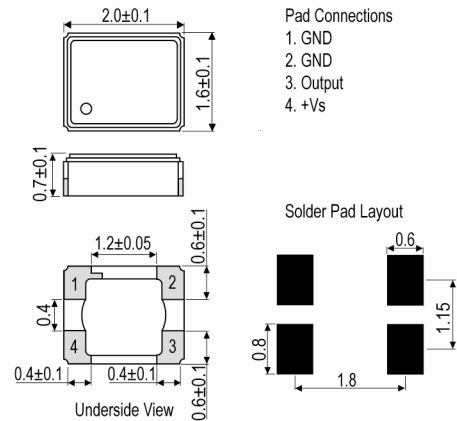
### Ordering Information

- \*Minimum info required
  - Frequency\*
  - Model\*
  - Output
  - Frequency Stability (over operating temperature range)\*
  - Operating Temperature Range\*
  - Supply Voltage
- Example
  - 26.0MHz IQXT-205-3-18
  - Clipped Sine  $\pm 0.5\text{ppm}$  -40 to 105C 1.8V

### Compliance

- RoHS Status (2015/863/EU) Compliant
- REACH Status Compliant
- MSL Rating (JDEC-STD-033): 2

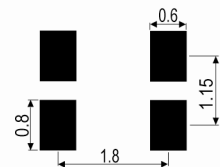
### Outline (mm)



### Pad Connections

1. GND
2. GND
3. Output
4. +Vs

### Solder Pad Layout





ISSUE 1; June 2023

**Packaging Details**

- Pack Style: Cutt      Cut tape  
Pack Size: 100
- Pack Style: Reel      Tape & reel in accordance with EIA-481  
Pack Size: 3,000

**Electrical Specification - maximum limiting values 1.8V ±5%**

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
13.0MHz	29.999999MHz	-40 to 105	±0.5	1.5	-	-
30.0MHz	39.999999MHz	-40 to 105	±0.5	1.7	-	-
40.0MHz	52.0MHz	-40 to 105	±0.5	2	-	-

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ISSUE 1; November 2020

### Description

- IQXT-205-3-25 is a 2.0 x 1.6mm SMD Temperature Compensated Crystal Oscillator (TCXO) in a hermetically sealed package with a wide operating temperature range.
- Developed frequencies: 16.368, 16.369, 19.2, 26.0, 33.6, 38.4 and 52.0MHz

### Frequency Parameters

- Frequency 13.0MHz to 52.0MHz
- Frequency Tolerance Max  $\pm 1.50\text{ppm}$
- Tolerance Condition @ 25°C  $\pm 2^\circ\text{C}$
- Frequency Stability  $\pm 0.50\text{ppm}$
- Ageing  $\pm 1\text{ppm}$  max per year @ 25°C  $\pm 2^\circ\text{C}$
- Frequency Tolerance: Referred to nominal frequency before reflow soldering.
- IR Reflow Resistance (@ 25°C  $\pm 2^\circ\text{C}$  ref to frequency before reflow):  $\pm 1\text{ppm}$  max, 24hrs after reflow
- Supply Voltage Variation (@  $\pm 5\%$  change):  $\pm 0.1\text{ppm}$  max
- Load Variation (@  $\pm 10\%$  change):  $\pm 0.1\text{ppm}$  max

### Electrical Parameters

- Supply Voltage 2.5V  $\pm 5\%$
- Absolute Maximum Ratings: Supply Voltage: -0.6V to 4.6V

### Operating Temperature Ranges

- -40 to 105°C

### Output Details

- Output Compatibility Clipped Sine
- Drive Capability 10k $\Omega$ //10pF
- Output: DC coupled
- Output Level: 0.8V pk-pk min
- Start Up Time (90% of V pk-pk): 2ms max
- Start Up Time (within  $\pm 0.5\text{ppm}$ ): 2ms max

### Noise Parameters

- Phase Noise (typ): -135dBc/Hz @ 1kHz

### Environmental Parameters

- Storage Temperature Range: -40 to 105°C

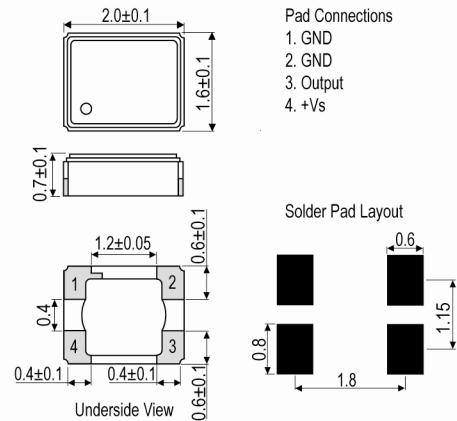
### Ordering Information

- \*Minimum info required
  - Frequency\*
  - Model\*
  - Output
  - Frequency Stability (over operating temperature range)\*
  - Operating Temperature Range\*
  - Supply Voltage
- Example
  - 26.0MHz IQXT-205-3-25
  - Clipped Sine  $\pm 0.5\text{ppm}$  -40 to 105C 2.5V

### Compliance

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

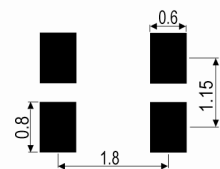
### Outline (mm)



### Pad Connections

1. GND
2. GND
3. Output
4. +Vs

### Solder Pad Layout





ISSUE 1; November 2020

**Packaging Details**

- Pack Style: Cutt      Cut tape  
Pack Size: 100
- Pack Style: Reel      Tape & reel in accordance with EIA-481  
Pack Size: 3,000

**Electrical Specification - maximum limiting values 2.5V ±5%**

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
13.0MHz	29.999999MHz	-40 to 105	±0.5	1.5	-	-
30.0MHz	39.999999MHz	-40 to 105	±0.5	1.7	-	-
40.0MHz	52.0MHz	-40 to 105	±0.5	2	-	-

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ISSUE 1; November 2020

### Description

- IQXT-205-3-28 is a 2.0 x 1.6mm SMD Temperature Compensated Crystal Oscillator (TCXO) in a hermetically sealed package with a wide operating temperature range.
- Developed frequencies: 16.368, 16.369, 19.2, 26.0, 33.6, 38.4 and 52.0MHz

### Frequency Parameters

- Frequency: 13.0MHz to 52.0MHz
- Frequency Tolerance Max:  $\pm 1.50\text{ppm}$
- Tolerance Condition: @ 25°C  $\pm 2^\circ\text{C}$
- Frequency Stability:  $\pm 0.50\text{ppm}$
- Ageing:  $\pm 1\text{ppm}$  max per year @ 25°C  $\pm 2^\circ\text{C}$
- Frequency Tolerance: Referred to nominal frequency before reflow soldering.
- IR Reflow Resistance (@ 25°C  $\pm 2^\circ\text{C}$  ref to frequency before reflow):  $\pm 1\text{ppm}$  max, 24hrs after reflow
- Supply Voltage Variation (@  $\pm 5\%$  change):  $\pm 0.1\text{ppm}$  max
- Load Variation (@  $\pm 10\%$  change):  $\pm 0.1\text{ppm}$  max

### Electrical Parameters

- Supply Voltage: 2.8V  $\pm 5\%$
- Absolute Maximum Ratings: Supply Voltage: -0.6V to 4.6V

### Operating Temperature Ranges

- 40 to 105°C

### Output Details

- Output Compatibility: Clipped Sine
- Drive Capability: 10k $\Omega$ //10pF
- Output: DC coupled
- Output Level: 0.8V pk-pk min
- Start Up Time (90% of V pk-pk): 2ms max
- Start Up Time (within  $\pm 0.5\text{ppm}$ ): 2ms max

### Noise Parameters

- Phase Noise (typ): -135dBc/Hz @ 1kHz

### Environmental Parameters

- Storage Temperature Range: -40 to 105°C

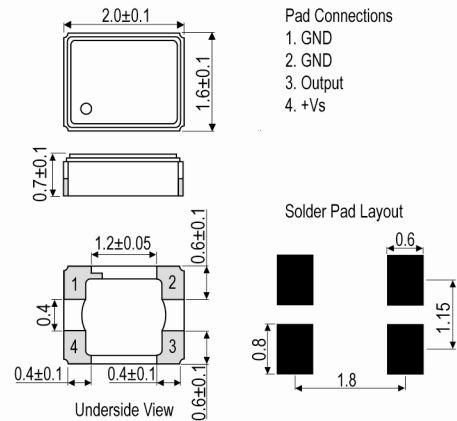
### Ordering Information

- \*Minimum info required
  - Frequency\*
  - Model\*
  - Output
  - Frequency Stability (over operating temperature range)\*
  - Operating Temperature Range\*
  - Supply Voltage
- Example
  - 26.0MHz IQXT-205-3-28
  - Clipped Sine  $\pm 0.5\text{ppm}$  -40 to 105C 2.8V

### Compliance

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

### Outline (mm)



#### Pad Connections

1. GND
2. GND
3. Output
4. +Vs

#### Solder Pad Layout



ISSUE 1; November 2020

**Packaging Details**

- Pack Style: Cutt      Cut tape  
Pack Size: 100
- Pack Style: Reel      Tape & reel in accordance with EIA-481  
Pack Size: 3,000

**Electrical Specification - maximum limiting values 2.8V ±5%**

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
13.0MHz	29.999999MHz	-40 to 105	±0.5	1.5	-	-
30.0MHz	39.999999MHz	-40 to 105	±0.5	1.7	-	-
40.0MHz	52.0MHz	-40 to 105	±0.5	2	-	-

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ISSUE 1; November 2023

### Description

- IQXT-205-3-30 is a 2.0 x 1.6mm SMD Temperature Compensated Crystal Oscillator (TCXO) in a hermetically sealed package with a wide operating temperature range.
- Developed frequencies: 16.368, 16.369, 19.2, 26.0, 33.6, 38.4 and 52.0MHz

### Frequency Parameters

- Frequency 13.0MHz to 52.0MHz
- Frequency Tolerance Max  $\pm 1.50\text{ppm}$
- Tolerance Condition @ 25°C  $\pm 2^\circ\text{C}$
- Frequency Stability  $\pm 0.50\text{ppm}$
- Ageing  $\pm 1\text{ppm}$  max per year @ 25°C  $\pm 2^\circ\text{C}$
- Frequency Tolerance: Referred to nominal frequency before reflow soldering.
- IR Reflow Resistance (@ 25°C  $\pm 2^\circ\text{C}$  ref to frequency before reflow):  $\pm 1\text{ppm}$  max, 24hrs after reflow
- Supply Voltage Variation (@  $\pm 5\%$  change):  $\pm 0.1\text{ppm}$  max
- Load Variation (@  $\pm 10\%$  change):  $\pm 0.1\text{ppm}$  max

### Electrical Parameters

- Supply Voltage 3.0V  $\pm 5\%$
- Absolute Maximum Ratings: Supply Voltage: -0.6V to 4.6V

### Operating Temperature Ranges

- -40 to 105°C

### Output Details

- Output Compatibility Clipped Sine
- Drive Capability 10k $\Omega$ //10pF
- Output: DC coupled
- Output Level: 0.8V pk-pk min
- Start Up Time (90% of V pk-pk): 2ms max
- Start Up Time (within  $\pm 0.5\text{ppm}$ ): 2ms max

### Noise Parameters

- Phase Noise (typ): -135dBc/Hz @ 1kHz

### Environmental Parameters

- Storage Temperature Range: -40 to 105°C

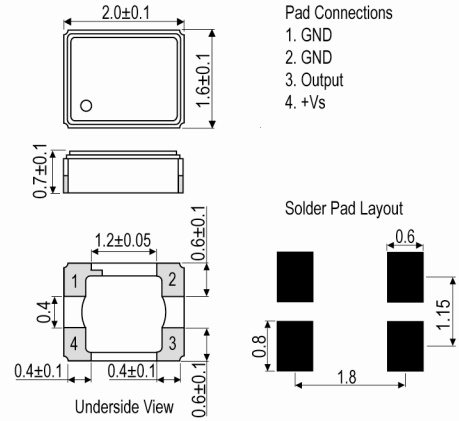
### Ordering Information

- \*Minimum info required
  - Frequency\*
  - Model\*
  - Output
  - Frequency Stability (over operating temperature range)\*
  - Operating Temperature Range\*
  - Supply Voltage
- Example
  - 26.0MHz IQXT-205-3-30
  - Clipped Sine  $\pm 0.5\text{ppm}$  -40 to 105C 3.0V

### Compliance

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

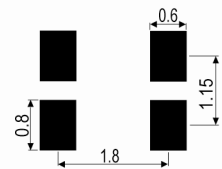
### Outline (mm)



#### Pad Connections

1. GND
2. GND
3. Output
4. +Vs

#### Solder Pad Layout







ISSUE 1; November 2023

**Packaging Details**

- Pack Style: Cutt      Cut tape  
Pack Size: 100
- Pack Style: Reel      Tape & reel in accordance with EIA-481  
Pack Size: 3,000

**Electrical Specification - maximum limiting values 3.0V ±5%**

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
13.0MHz	29.999999MHz	-40 to 105	±0.5	1.5	-	-
30.0MHz	39.999999MHz	-40 to 105	±0.5	1.7	-	-
40.0MHz	52.0MHz	-40 to 105	±0.5	2	-	-

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ISSUE 1; February 2024

### Description

- IQXT-205-3-33 is a 2.0 x 1.6mm SMD Temperature Compensated Crystal Oscillator (TCXO) in a hermetically sealed package with a wide operating temperature range.
- Developed frequencies: 16.368, 16.369, 19.2, 26.0, 33.6, 38.4 and 52.0MHz

### Frequency Parameters

- Frequency 13.0MHz to 52.0MHz
- Frequency Tolerance Max  $\pm 1.50\text{ppm}$
- Tolerance Condition @ 25°C  $\pm 2^\circ\text{C}$
- Frequency Stability  $\pm 0.50\text{ppm}$
- Ageing  $\pm 1\text{ppm}$  max per year @ 25°C  $\pm 2^\circ\text{C}$
- Frequency Tolerance: Referred to nominal frequency before reflow soldering.
- IR Reflow Resistance (@ 25°C  $\pm 2^\circ\text{C}$  ref to frequency before reflow):  $\pm 1\text{ppm}$  max, 24hrs after reflow
- Supply Voltage Variation (@  $\pm 5\%$  change):  $\pm 0.1\text{ppm}$  max
- Load Variation (@  $\pm 10\%$  change):  $\pm 0.1\text{ppm}$  max

### Electrical Parameters

- Supply Voltage 3.3V  $\pm 5\%$
- Absolute Maximum Ratings: Supply Voltage: -0.6V to 4.6V

### Operating Temperature Ranges

- 40 to 105°C

### Output Details

- Output Compatibility Clipped Sine
- Drive Capability 10k $\Omega$ //10pF
- Output: DC coupled
- Output Level: 0.8V pk-pk min
- Start Up Time (90% of V pk-pk): 2ms max
- Start Up Time (within  $\pm 0.5\text{ppm}$ ): 2ms max

### Noise Parameters

- Phase Noise (typ): -135dBc/Hz @ 1kHz

### Environmental Parameters

- Storage Temperature Range: -40 to 105°C

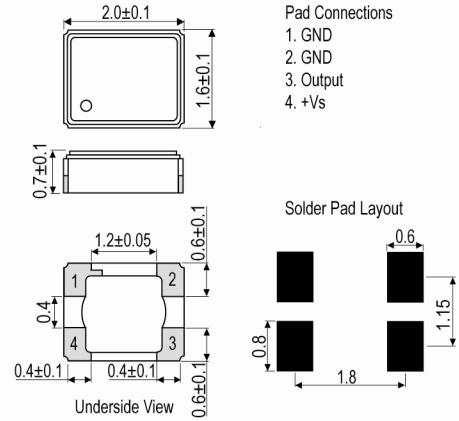
### Ordering Information

- \*Minimum info required
  - Frequency\*
  - Model\*
  - Output
  - Frequency Stability (over operating temperature range)\*
  - Operating Temperature Range\*
  - Supply Voltage
- Example
  - 26.0MHz IQXT-205-3-33
  - Clipped Sine  $\pm 0.5\text{ppm}$  -40 to 105C 3.3V

### Compliance

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

### Outline (mm)



ISSUE 1; February 2024

**Packaging Details**

- Pack Style: Cutt      Cut tape  
Pack Size: 100
- Pack Style: Reel      Tape & reel in accordance with EIA-481  
Pack Size: 3,000

**Electrical Specification - maximum limiting values 3.3V ±5%**

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
13.0MHz	29.999999MHz	-40 to 105	±0.5	1.5	-	-
30.0MHz	39.999999MHz	-40 to 105	±0.5	1.7	-	-
40.0MHz	52.0MHz	-40 to 105	±0.5	2	-	-

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