

ISSUE 1; February 2018



Description

- IQXT-225 is a 2.0 x 1.6mm SMD Temperature Compensated Crystal Oscillator (TCXO) in a hermetically sealed package with E/D on pad 1 for low power operation.
- Developed frequencies: 16.368, 16.369, 19.2, 26.0, 33.6 and 38.4MHz

Frequency Parameters

- Frequency 16.368MHz to 38.4MHz
- Frequency Tolerance Max $\pm 1.50\text{ppm}$
- Frequency Stability $\pm 0.50\text{ppm}$
- Ageing $\pm 1\text{ppm}$ max per year @ 25°C $\pm 2^\circ\text{C}$
- Frequency Tolerance: @ 25°C $\pm 2^\circ\text{C}$ referred to nominal frequency before reflow soldering.
- Supply Voltage Variation (@ $\pm 5\%$ change): $\pm 0.1\text{ppm}$ max
- Load Variation (@ $\pm 10\%$ change): $\pm 0.1\text{ppm}$ max
- Reflow Variation (at 25°C $\pm 2^\circ\text{C}$ referred to frequency before reflow): $\pm 1\text{ppm}$ max, 24 hrs after reflow.

Electrical Parameters

- Supply Voltage 1.2V $\pm 5\%$
- Absolute Maximum Ratings:
 Supply Voltage: -0.6V to 4.6V
 E/D Control Voltage: -0.6V to Vs+0.6V (4.6V max)

Operating Temperature Ranges

- -30 to 85°C

Output Details

- Output Compatibility Clipped Sine
- Drive Capability 10k Ω /10pF $\pm 10\%$
- Output: DC coupled
 Note: a 1000pF DC-cut capacitor is to be connected in the output line of the TCXO.
- Output Level: 0.8V pk-pk min
- Start Up Time: Vout $\geq 90\%$ of V pk-pk: 2ms max
- Start Up Time (within $\pm 0.5\text{ppm}$): 2ms max

Output Control

- Enable/Disable (pad 1):
 Logic '1' (80%Vs min) or no connection to pad 1 enables the oscillator output.
 Logic '0' (20%Vs max) to pad 1 disables the oscillator output, the output goes to a high impedance state.
 Disable current in E/D mode: 3 μA max

Noise Parameters

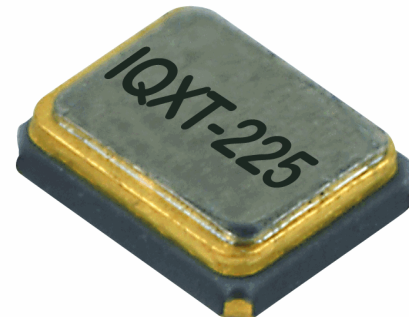
- Phase Noise (typ): -135dBc/Hz @ 1kHz

Environmental Parameters

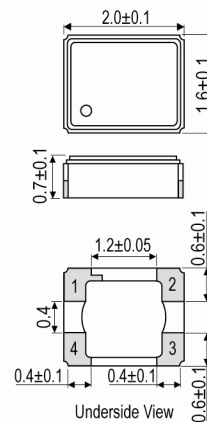
- Storage Temperature Range: -40 to 85°C

Manufacturing Details

- RoHS Terminations NiAu
- RoHS Reflow +250°C $\pm 10^\circ\text{C}$ for 10 sec max



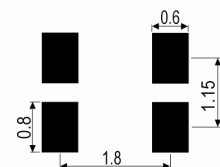
Outline (mm)



Pad Connections

1. E/D
2. GND
3. Output
4. +Vs

Solder Pad Layout



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Ordering Information

- *Minimum info required
 - Frequency*
 - Model*
 - Output
 - Frequency Stability (over operating temperature range)*
 - Operating Temperature Range*
 - Supply Voltage
- Example
 - 26.0MHz IQXT-225-12
 - Clipped Sine $\pm 0.5\text{ppm}$ -30 to 85C 1.2V

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 1.2V $\pm 5\%$

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
16.368MHz	38.4MHz	-30 to 85	± 0.5	1.7	-	-

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