TCXO Specification

IQXT-220

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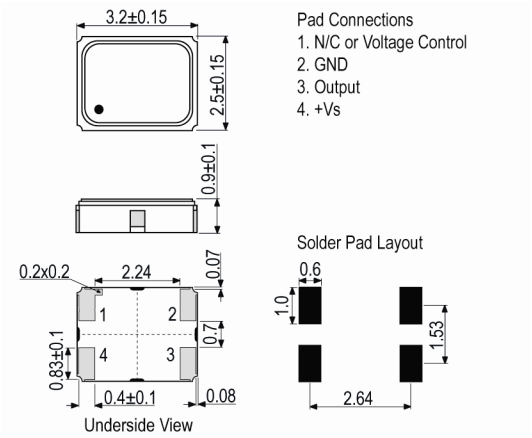
Description

- Temperature compensated crystal oscillator available with or without voltage control function.
  Please note: This document is intended to illustrate the general capability and versatility of IQD's design. For specific enquiries please contact one of IQD's sales offices where we can tailor a unique specification to meet your needs.

Outline (mm) None =



Frequency Parameters

- Frequency 10.0MHz to 40.0MHz
- Frequency Tolerance ±1.00ppm
- Frequency Stability ±0.28ppm
- Ageing ±0.02ppm max/day, ±1ppm max/year
- Frequency Tolerance: Measurement referenced to frequency observed with TA=25°C, Vs=3.3V, VC=1.5V and load=10kΩ//10pF, within 30 days after ex-works.
- Frequency Stability: TA varied across the operating temperature range, measurement referenced to frequency observed with fref=(fmax+fmin)/2, Vs=3.3V, VC=1.5V, load=10kΩ//10pF and temperature variable speed less than 2°C/min.
- Ageing: Vs, VC, TA and load constant, measurement referenced to frequency observed with TA=25°C, Vs=3.3V, VC=1.5V, load=10kΩ//10pF and after 1hr of operation.
- Supply Voltage Variation (measurement referenced to frequency observed TA=25°C, Vs varied from 3.13V to 3.47V, VC=1.5V and load=10kΩ//10pF): ±0.1ppm max
- Load Variation (measurement referenced to frequency observed with TA=25°C, Vs=3.3V, VC=1.5V and load change=10kΩ//10pF ±5%): ±0.1ppm max
- Developed Frequencies:
  10.0MHz, 12.80MHz, 16.320MHz, 16.3840MHz, 19.20MHz, 20.0MHz, 30.720MHz, 32.7680MHz, 38.880MHz, 40.0MHz.

Electrical Parameters

- Supply Voltage 3.3V ±5%
- Current Consumption (@ TA=25°C, Vs=3.3V, VC=1.5V and load=10kΩ//10pF): 5mA max

Frequency Adjustment

- For devices with Voltage Control:
  Pulling: ±10ppm min to ±15ppm max
  Control Voltage: 1.5V ±1.0V
  Input Impedance: 100kΩ min
  Linearity: 10% max
  Slope: Positive

Operating Temperature Ranges

- -40 to 85°C

Output Details

- Output Compatibility Clipped Sine
- Drive Capability 10kΩ//10pF
- Output Voltage Level: 0.8V pk-pk min

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Noise Parameters

- Phase Noise @ 25°C (F=10.0MHz, typ):
  -90dBc/Hz @ 10Hz
  -120dBc/Hz @ 100Hz
  -140dBc/Hz @ 1kHz
  -145dBc/Hz @ 10kHz
  -148dBc/Hz @ 100kHz

Environmental Parameters

- Operable Temperature Range: -40 to 85°C
- Storage Temperature Range: -55 to 105°C
- ESD Levels:
  ESD Human Body Model (JEDEC JS-001-2010): Class 2: 2000V to 4000V
  ESD Machine Model (JEDEC JESD22-A115C): Class B: 200V to 400V
- Shock: IEC 60068-2-27, Test Ea, Severity 50A: 100G acceleration for 6ms, half sine wave, 3 times in 3 mutually perpendicular planes.
- Vibration: IEC 60068-2-06, Test Fc: 10Hz-2000Hz, 0.75mm amplitude, 10G acceleration, 30mins per cycle, 3 times in 3 mutually perpendicular planes, test duration 2hrs.

Manufacturing Details

- Storage Conditions:
  Temperature: -10 to 35°C
  Humidity: 20 to 70% RH
- RoHS Terminations — Ni (1µm~9µm), Au (0.5µ~1µm)
- RoHS Reflow — 260°C max for 30sec max

Compliance

- RoHS Status (2015/863/EU) — Compliant
- REACh Status — Compliant
- MSL Rating (JDEC-STD-033): — 1

Packaging Details

- Pack Style: Cutt — Cut tape
  Pack Size: 100
- Pack Style: Reel — Tape & reel in accordance with EIA-481-D
  Pack Size: 2,000

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	%
10.0MHz	40.0MHz	-40 to 85	±0.28	5	-	-

This document was correct at the time of printing; please contact your local sales office for the latest version.
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