

ISSUE 2; December 2024

Description

- Temperature Compensated Crystal Oscillator (TCXO)



Frequency Parameters

- Frequency: 10.0MHz
- Frequency Tolerance: $\pm 1.00\text{ppm}$
- Frequency Stability: $\pm 0.05\text{ppm}$
- Ageing: $\pm 0.01\text{ppm}$ max per day, $\pm 1\text{ppm}$ max/year
- Frequency Tolerance (measurement referenced to frequency observed with $T_A=25^\circ\text{C}$, $V_S=3.3\text{V}$, within 30 days after ex-works)
- Frequency Stability: T_A varied across the operating temperature range, measurement referenced to frequency observed with $T_A=25^\circ\text{C}$, $V_S=3.3\text{V}$, load=15pF and temperature variable speed less than 2°C per minute.
- Ageing: $T_A=25^\circ\text{C}$, $V_S=3.3\text{V}$ and after 1hr of operation.
- Supply Voltage Variation (measurement referenced to frequency observed with $T_A=25^\circ\text{C}$, V_S varied from 3.13V to 3.47V and load=15pF): $\pm 0.05\text{ppm}$ max
- Load Variation (5% load change measurement referenced to frequency observed with $T_A=25^\circ\text{C}$, $V_S=3.3\text{V}$ and load= 15pF): $\pm 0.05\text{ppm}$ max

Electrical Parameters

- Supply Voltage: $3.3\text{V} \pm 5\%$
- Current: @ $T_A=25^\circ\text{C}$, $V_S=3.3\text{V}$ and load=15pF

Operating Temperature Ranges

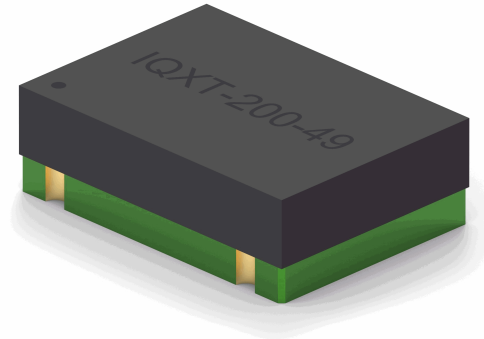
- -40 to 105°C

Output Details

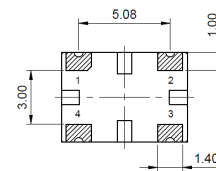
- Output Compatibility: HCMOS
- Drive Capability: 15pF
- Output Voltage Levels (@ $V_S=3.3\text{V}$ and load=15pF):
Output Low (VoL): 0.4V max
Output High (VoH): 2.4V min

Noise Parameters

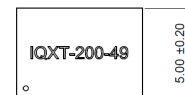
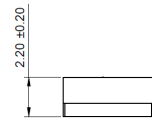
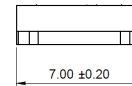
- Phase Noise (typ @ 25°C):
-85dBc/Hz @ 10Hz
-115dBc/Hz @ 100Hz
-140dBc/Hz @ 1kHz
-150dBc/Hz @ 10kHz
-152dBc/Hz @ 100kHz
-155dBc/Hz @ 1MHz
- Phase Noise (max @ 25°C):
-80dBc/Hz @ 10Hz
-110dBc/Hz @ 100Hz
-135dBc/Hz @ 1kHz
-145dBc/Hz @ 10kHz
-148dBc/Hz @ 100kHz
-150dBc/Hz @ 1MHz



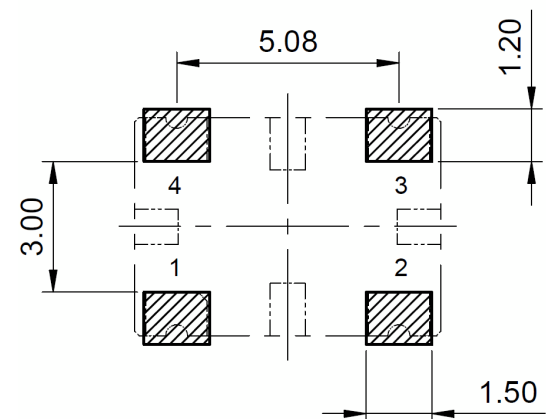
Outline (mm)



Pad Connections
1. NC
2. GND
3. Output
4. +Vs



Recommended Solder Pad Layout



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Environmental Parameters

- Storage Temperature Range: -55 to 105°C
- ESD Level:
Human Body Model: Class 2: 2000V to 4000V, JEDEC JS-001-2010
Machine Model: Class B: 200V to 400V, JEDEC JESD22-A115C
- Shock: 100g, 6ms, half sine wave (3 times for each 3 directions X, Y, Z), IEC 68-2-27 Test Ea/Severity 50A
- Vibration: Test Condition: 0.75mm, acceleration 10g, 10Hz~2000Hz, one cycle per 30 min, test 2 hour. (3 times for each 3 directions X, Y, Z). IEC 68-2-06 Test Fc

Manufacturing Details

- RoHS Reflow 260°C for 30s max

Compliance

- RoHS Status (2015/863/EU) Compliant
- REACH Status Compliant
- MSL Rating (JEDEC-STD-033): 3

Packaging Details

- Tape & reel in accordance with EIA-481
Quantities below the standard reel size to be supplied on cut tape
Standard Pack Quantity: 600

Electrical Specification - maximum limiting values 3.30V ±5%

Frequency Min	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
	°C	ppm	mA	ns	%
10.0MHz	-40 to 105	±0.05	10	5	45/55%

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