

ISSUE 3; July 2024

Description

- 32.768kHz miniature 2 x 1.6mm crystal oscillator in an hermetically sealed ceramic package with a seam sealed metal lid.



Frequency Parameters

- Frequency: 32.768kHz
- Frequency Stability: $\pm 25.00\text{ppm}$ to $\pm 100.00\text{ppm}$
- Ageing: $\pm 3\text{ppm}$ max per year @ 25°C

Electrical Parameters

- Supply Voltage: 2.5V $\pm 5\%$
- Start-up Time: 0.3ms typ, 10ms max

Operating Temperature Ranges

- 20 to 70°C
- 40 to 85°C
- 40 to 125°C

Output Details

- Output Compatibility: CMOS
- Drive Capability: 15pF

Output Control

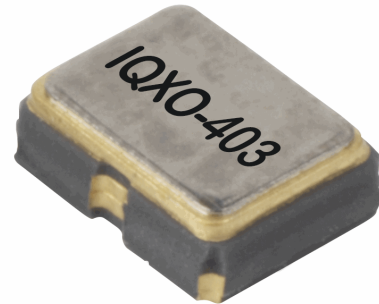
- Standby Operation:
 - Logic '1' ($\geq 70\%V_s$) to pad 1 enables oscillator output
 - Logic '0' ($\leq 30\%V_s$) to pad 1 disables oscillator output; when disabled the oscillator output goes to the high impedance state.
 - No connection to pad 1 enables oscillator output.
- Standby Current (pad 1 at logic '0'):
 - 10 μA max @ -40+85°C
 - 20 μA max @ -40+125°C

Environmental Parameters

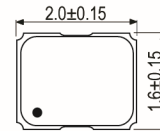
- Storage Temperature Range: -55 to 125°C
- Shock : 1500G, 0.5ms, 3 times for each surface, total 18 times.
- Vibration: Frequency range: 20~2000Hz, peak to peak amplitude 1.52mm, peak acceleration: 20G (196m/s²), 3 directions (X, Y,Z), each cycle: 20min, 4 cycles for each direction.

Manufacturing Details

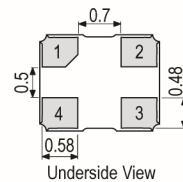
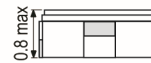
- RoHS Terminations: Au over Ni
- RoHS Reflow: 260°C max for 10s max



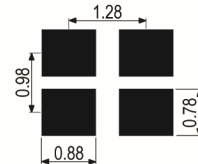
Outline (mm)



- Pad Connections
- Standby Operation
 - GND
 - Output
 - +Vs



Solder Pad Layout



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Ordering Information

- Frequency
Model*
Output
Frequency Stability*
Operating Temperature Range*
Supply Voltage
(*minimum required)
- Example
32.768kHz IQXO-403
CMOS ±30ppm -20 to 70C 2.5V

Compliance

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

Packaging Details

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

Electrical Specification - maximum limiting values 2.50V ±5%

Frequency	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
	°C	ppm	mA	ns	%
32.768kHz	-40 to 85	±30.00	0.2	100	40/60%
	-40 to 125	±100.00	0.2	100	40/60%
	-20 to 70	±25.00	0.2	100	40/60%

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