

## Customer Part:



### Description

- 32.768kHz miniature 2 x 1.6mm crystal oscillator in an hermetically sealed ceramic package with a seam sealed metal lid.
- Model IQXO-402
- Model Issue number 3

### Frequency Parameters

- Frequency 32.7680kHz
- Frequency Stability  $\pm 30.00\text{ppm}$
- Operating Temperature Range  $-40.00$  to  $85.00^\circ\text{C}$
- Ageing  $\pm 3\text{ppm}$  max per year @  $25^\circ\text{C}$

### Electrical Parameters

- Supply Voltage  $3.3\text{V} \pm 10\%$
- Current Draw  $0.200\text{mA}$

### Output Details

- Output Compatibility CMOS
- Drive Capability  $15\text{pF}$
- Rise and Fall Time  $100.0\text{ns}$  max
- Duty Cycle  $40/60\%$

### 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:  
 $10\mu\text{A}$  max @  $-40$  to  $85^\circ\text{C}$   
 $20\mu\text{A}$  max @  $-40$  to  $125^\circ\text{C}$
- Start-up Time:  $10\text{ms}$  max  
 $0.3\text{ms}$  typ to 90% of final amplitude (under ideal conditions @  $25^\circ\text{C}$ )

### Environmental Parameters

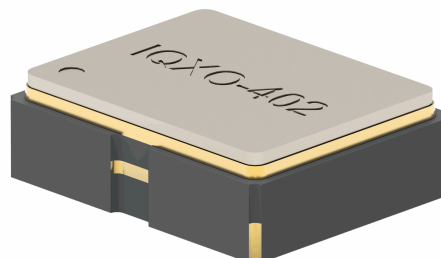
- Storage Temperature Range:  $-55$  to  $125^\circ\text{C}$
- Shock :  $1500\text{G}$ ,  $0.5\text{ms}$ , 3 times for each surface, total 18 times.
- Vibration: Frequency range:  $20\sim 2000\text{Hz}$ , peak to peak amplitude  $1.52\text{mm}$ , peak acceleration:  $20\text{G}$  ( $196\text{m/s}^2$ ), 3 directions (X, Y, Z), each cycle:  $20\text{min}$ , 4 cycles for each direction.

### Manufacturing Details

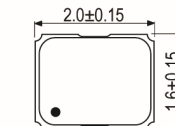
- RoHS Terminations Au over Ni
- RoHS Reflow Temp  $260^\circ\text{C}$  max for 10s max

### Compliance

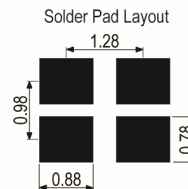
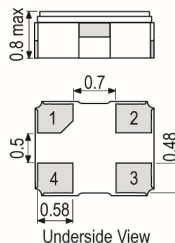
- RoHS Status (2015/863/EU) Compliant
- REACH Status Compliant
- MSL Rating (JDEC-STD-033): Not Applicable



### Outline (mm)



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



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**Customer Part:**

**Packaging Details**

- Tape & reel in accordance with EIA-481  
Quantities below the standard reel size to  
be supplied on cut tape.  
Standard Quantity: 3,000 Pieces

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