

ISSUE 4; July 2024

Description

- Standard 1.6 x 1.2mm crystal oscillator in a hermetically sealed ceramic package with a seam sealed metal lid.

Frequency Parameters

- Frequency: 3.0MHz to 80.0MHz
- Frequency Stability: $\pm 30.00\text{ppm}$ to $\pm 100.00\text{ppm}$
- Ageing: $\pm 5\text{ppm max/yr @ } 25^\circ\text{C}$

Electrical Parameters

- Supply Voltage: $2.5\text{V} \pm 10\%$

Operating Temperature Ranges

- 20 to 70°C
- 40 to 85°C

Output Details

- Output Compatibility: CMOS
- Drive Capability: 15pF max
- Output Voltage Low (Vol): 10%Vs max
Output Voltage High (Voh): 90%Vs min

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 μA max

Environmental Parameters

- Storage Temperature Range: -55 to 125°C
- Shock: IEC 60068-2-27: 1000g, 1ms, 3 times in each of 3 mutually perpendicular planes.
- Vibration: IEC 60068-2-6: 1.5mm amplitude, 10Hz-55Hz, 1min in 3 mutually perpendicular planes, duration 2hrs each plane (total 6hrs).

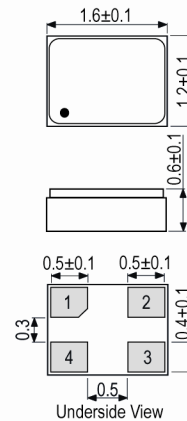
Manufacturing Details

- RoHS Terminations: W($15 \pm 4\mu\text{m}$), Ni($8 \sim 20\mu\text{m}$), Au($0.2 \sim 1\mu\text{m}$)
- RoHS Reflow: $260 \pm 5^\circ\text{C}$ for 5s max

Ordering Information

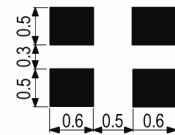
- Frequency*
- Model*
- Output
- Frequency Stability*
- Operating Temperature Range*
- Supply Voltage
(*minimum required)
- Example
10.0MHz IQXO-641
CMOS $\pm 50\text{ppm}$ -20 to 70°C 2.5V

Outline (mm)

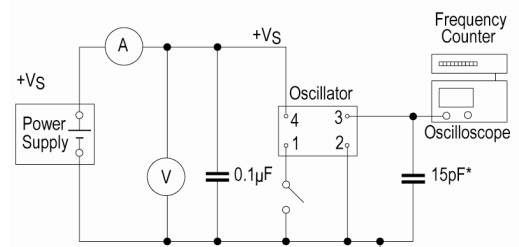


- Pad Connections
- Standby Operation
 - GND
 - Output
 - +Vs

Solder Pad Layout

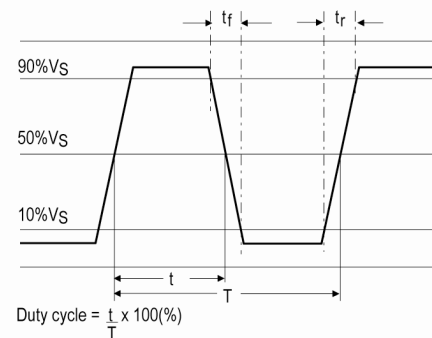


Test Circuit



* Inclusive of jigging and equipment capacitance

Wave Form



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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 Cut tape
Standard Pack Quantity: 100

Electrical Specification - maximum limiting values 2.5V \pm 10%

| Frequency Min | Frequency Max | Temperature Range | Stability (Min) | Current Draw | Rise and Fall Time | Duty Cycle |
|---------------|---------------|-------------------|-----------------|--------------|--------------------|------------|
| | | °C | ppm | mA | ns | % |
| 3.0MHz | 20.0MHz | -20 to 70 | \pm 30.0 | 3 | 4.5 | 45/55% |
| | | -40 to 85 | \pm 50.0 | 3 | 4.5 | 45/55% |
| 20.000001MHz | 40.0MHz | -20 to 70 | \pm 30.0 | 5 | 4.5 | 45/55% |
| | | -40 to 85 | \pm 50.0 | 5 | 4.5 | 45/55% |
| 40.000001MHz | 60.0MHz | -20 to 70 | \pm 30.0 | 7 | 4.5 | 45/55% |
| | | -40 to 85 | \pm 50.0 | 7 | 4.5 | 45/55% |
| 60.000001MHz | 80.0MHz | -20 to 70 | \pm 30.0 | 9 | 4.5 | 45/55% |
| | | -40 to 85 | \pm 50.0 | 9 | 4.5 | 45/55% |

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