

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: $1.8\text{V} \pm 10\%$

Operating Temperature Ranges

- 20 to 70°C
- 40 to 85°C

Output Details

- Output Compatibility: CMOS
- Drive Capability: 15pF max
- Output Voltage Low (V_{ol}): 10%V_s max
- Output Voltage High (V_{oh}): 90%V_s 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).

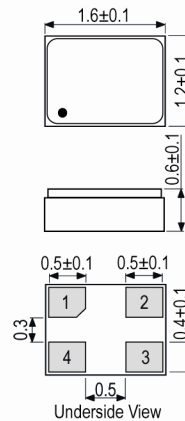
Manufacturing Details

- 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

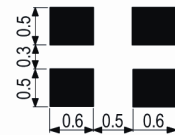
- Frequency*
- Model*
- Output
- Frequency Stability*
- Operating Temperature Range*
- Supply Voltage
(*minimum required)
- Example
10.0MHz IQXO-642
CMOS $\pm 50\text{ppm}$ -20 to 70°C 1.8V

Outline (mm)

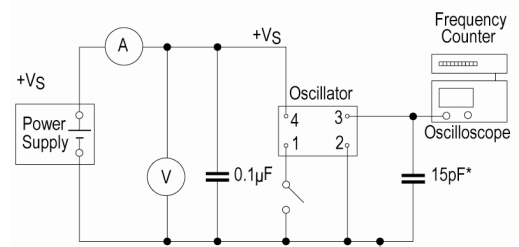


- Pad Connections
- Standby Operation
 - GND
 - Output
 - +V_s

Solder Pad Layout

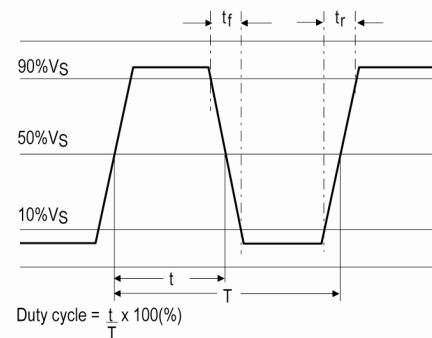


Test Circuit



* Inclusive of jigging and equipment capacitance

Wave Form



Sales Office Contact Details:

UK: +44 (0)1460 270200

Email: info@iqdfrequencyproducts.com

Web: www.iqdfrequencyproducts.com

Compliance

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

Packaging Details

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

Electrical Specification - maximum limiting values 1.8V \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	4	4.5	45/55%
		-40 to 85	\pm 50.0	4	4.5	45/55%
40.000001MHz	60.0MHz	-20 to 70	\pm 30.0	5	4.5	45/55%
		-40 to 85	\pm 50.0	5	4.5	45/55%
60.000001MHz	80.0MHz	-20 to 70	\pm 30.0	7	4.5	45/55%
		-40 to 85	\pm 50.0	7	4.5	45/55%

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Sales Office Contact Details:

UK: +44 (0)1460 270200

Email: info@iqdfrequencyproducts.com

Web: www.iqdfrequencyproducts.com