IQXO-22, -23 Commercial Oscillator

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Delivery Options

- Common frequencies are available from stock. Please see p34 for details

- 3 day Express Manufacturing Service, subject to piece part stock availability.

Output Compatibility

- HCMOS/TTL

- Drive Capability: 50pF or 10 TTL

- Non tri-state (IQXO-22, -22I)

- Tri-state (IQXO-23, -23I)

Package Outline

- 8-pin DIL compatible resistance welded enclosure, hermetically sealed with glass to metal seals. Available over 0 to 70°C (IQXO-22, -23) or –40 to 85°C (IQXO-22I, -23I)

Standard Frequency Stabilities

- ±25ppm, ±50ppm, ±100ppm (over operating temperature range)

Frequency Tolerance at 25°C (Optional)

- ±5ppm, ±10ppm, ±25ppm

Operating Temperature Range

- 0 to 70°C (IQXO-22, -23)

- –40 to 85°C (IQXO-22I, -23I)

Storage Temperature Range

- –55 to 125°C

Environmental Specification

- Terminal Strength: 0.91kg max. Force perpendicular to top & bottom.

- Hermetic Seal: not to exceed 1×10^{-8} mBar litres of Helium leakage

- Solderability: MIL-STD-202E, Method 208C

- Vibration: 10 to 55Hz 0.76mm displacement, sweep 60 seconds, duration 2 hours.

- Rapid Change of Temperature over Operating Temperature Range: 10 cycles

- Shock: 981m/s^2 for 6ms, three shocks in each direction along the three mutually perpendicular planes

Tri-state Operation (IQXO-23, -23I)

- Logic '0' to pin 1 disables oscillator output; when disabled the oscillator output goes to the high impedance state

- No connection or Logic '1' to pin 1 enables oscillator output

- Maximum 'pull-down' resistance required to disable output = 20kΩ
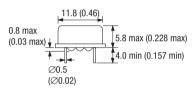
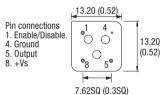- Disable current 50μA typical

Marking

- Model number (+ Operating Temperature Code; if applicable)

- Frequency Stability Code

- Frequency Tolerance Code (Optional)

- Frequency

- Date code (Year/Week)

Minimum Order Information Required

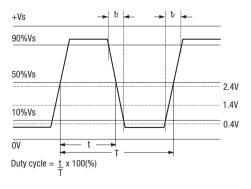- Frequency + Model Number + Operating Temperature Code (if applicable) + Frequency Stability

Outline in mm (inches)

Pin connections
1. Enable/Disable.
4. Ground
5. Output
8. +Vs

Note: Pin 1= No connnection on non tri-state models

Output Waveform - HCMOS/TTL

Duty cycle = $\frac{t}{T}$ x 100(%)

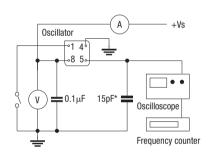**Electrical Specification – maximum limiting values when measured in HCMOS test circuit**

Frequency Range	Frequency Stability	Supply Voltage	Supply Current	Rise Time (t_r)	Fall Time (t_f)	Duty Cycle	Model Number
500.0kHz to < 5.0MHz	±25ppm, ±50ppm, ±100ppm	5V±0.25V	20mA	15ns	15ns	45/55%	IQXO-22, -22I, -23, -23I
5.0 to < 16.0MHz	±25ppm, ±50ppm, ±100ppm	5V±0.25V	20mA	10ns	10ns	45/55%	IQXO-22, -22I, -23, -23I
16.0 to < 30.0MHz	±25ppm, ±50ppm, ±100ppm	5V±0.25V	30mA	10ns	10ns	45/55%	IQXO-22, -22I, -23, -23I
30.0 to < 50.0MHz	±25ppm, ±50ppm, ±100ppm	5V±0.25V	40mA	8ns	8ns	45/55%	IQXO-22, -22I, -23, -23I
50.0 to 80.0MHz	±25ppm, ±50ppm, ±100ppm	5V±0.25V	50mA	6ns	6ns	40/60%	IQXO-22, -22I, -23, -23I

Ordering Example	22.0MHz IQXO-22I B F
Frequency ——
Model No: -22, -22I = Non tri-state & -23, -23I = Tri-state ————————————————————
Operating Temperature Code: I = –40 to 85°C Not applicable for 0 to 70°C ————————
Frequency Stability: A = ±25ppm; B = ±50ppm; C = ±100ppm —————————————
Frequency Tolerance @ 25°C: D = ±5ppm; E = ±10ppm; F = ±25ppm ———————————
Please note: Code combination A F is not available

Test Circuit - HCMOS

*Inclusive of jigging & equipment capacitance

Note: Pin 1 = No connection on non tri-state models

Test Circuit - TTL

D_1 to D_4 = IN916 or equivalent

*Inclusive of jigging & equipment capacitance

Note: Pin 1 = No connection on non tri-state models

SPXOs