EUROQUARTZ

XO95MK Series Oscillators

Close Tolerance SMD Oscillator — 200kHz to 200MHz

FEATURES

- **High shock resistance**
- **CMOS/TTL compatible**
- **Optional Enable/ Disable function**
- **Low EMI**
- **Available tested to military specs**
- **Hermetically sealed ceramic package**

DESCRIPTION

XO95MK oscillators consist of a TTL/CMOS-compatible hybrid circuit with a miniature quartz crystal packaged in a low-profile, ceramic package. Utilizing the latest advancements in production technology, the combination of optimized design and high quality materials provide a highly reliable clock oscillator suitable for defence and aerospace applications.

APPLICATIONS

Military & Aerospace

- **Smart munitions**
- **Cockpit Systems**
- **Navigation**
- **Engine control systems**

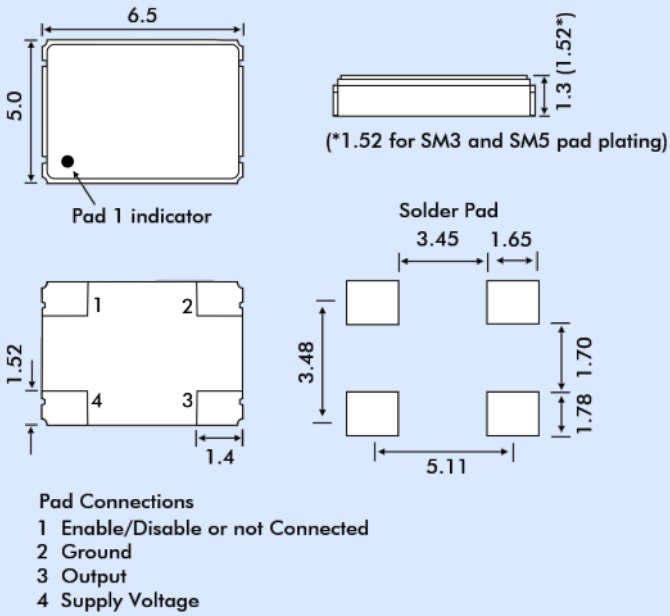
Industrial, Computer & Communications

- **Industrial controls**
- **Instrumentation**
- **Microprocessor clocks**

Medical

- **Infusion pumps**

OUTLINE & DIMENSIONS



ABSOLUTE MAXIMUM RATINGS

Supply Voltage Vdd:	-0.5V to 7.0V
Storage Temperature Range:	-55° to +125°C
Maximum Process Temperature:	260° for 20 seconds

PACKAGING OPTIONS

XO95MK oscillators are supplied tray packed for quantities <250 pieces. Quantities above 250 pieces are supplied tape and reeled; 16mm tape on 178mm or 330mm reels per EIA 418.

COMPARISON OF ENABLE/DISABLE OPTIONS

There are three Enable/Disable options available, E, T and N. Both the E and T versions have Tri-state outputs. In the E version the oscillator stops, in the T version the oscillator continues to run. The N version (no tristate function) does not have pin 1 connected internally.

	E	T
	Enable (Pin 1 High)	
Output:	Frequency Output	Frequency Output
Oscillator:	Oscillates	Oscillates
Current:	Normal	Normal
	Disable (Pin 1 Low)	
Output:	High Z state	High Z state
Oscillator:	Stops	Oscillates
Current:	Very low	Lower than normal

When Pad 1 is allowed to float it is held high by an internal pull-up resistor.

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SPECIFICATION

Note: Specifications are typical at 25°C unless otherwise noted. Specifications are subject to change without notice. Tighter specifications are available, please contact Euroquartz sales.

Frequency Range:	200.0kHz to 200.0MHz
Supply Voltage[1]:	0.9 Volts to 5.0 Volts ±10%
Calibration Tolerance[2]:	±30 ppm
Frequency Stability over Temperature[3]	
Commercial (-10 to +70°C):	±15 to ±50 ppm
Industrial (-40 to +85°C):	±30 to ±100 ppm
Military (-55 to +125°C):	±40 to ±100ppm
Output Load (CMOS)[4]:	15 pF
Supply Current:	*See table*
Start-up Time:	5 ms maximum
Rise/Fall Time:	6 ns maximum
Duty Cycle:	40/60% minimum
Ageing, first year:	±10 ppm maximum
Shock, survival:	Standard: 5000g, 0.3 ms, ½ sine HG: 10,000g, 0.3 ms, ½ sine
Vibration, survival[5]:	20g, 10 ~ 2,000Hz swept sine
Operating Temp Ranges	-10°C to +70°C (Commercial) -40°C to +85°C (Industrial) -55°C to +125°C (Military)

Notes:

1. *Voltages available: 0.9 V, 1.8 V, 2.5 V, 3.0 V, 3.3 V, 5.0 V. Not all voltages are available for all frequencies. Contact sales.*
2. *Tighter tolerances available.*
3. *Does not include calibration tolerance. Tighter tolerance may be available.*
4. *Higher CMOS loads and TTL loads available. Contact Euroquartz.*
5. *Per MIL-STD-202G, Method 204D, Condition D. Random vibration testing is also available.*

All parameters are measured at ambient temperature with a 10MΩ, 15pF load.

SUPPLY CURRENT

Frequency	Supply Current Vdd = 3.3V	Supply Current Vdd = 5.0V
10MHz	2mA	4mA
24MHz	4mA	8mA
30MHz	6mA	10mA
40MHz	8mA	12mA
50MHz	10mA	14mA

HOW TO ORDER XO95MK SMD OSCILLATORS

Example: XO95MK-HG-4-SM3-32.0M/100/100/-I

XO95MK HG 4 S T SM3 - 32.0M, 100 / 100 / – / I

- **HG** — HG = High Shock Otherwise leave blank.
- **4** — Supply Voltage: 1 = 1.8V, 2 = 2.5V, 3 = 3.0V, 4 = 3.3V, 5 = 5.0V
- **S** — 'S' if special or custom parameters required
- **T** — Enable/Disable option, E, T or N
- **SM3** — Terminations: Blank = SM1 = Gold plated; SM3 = Solder dipped; SM5 = Solder dipped (SM1 and SM5 are pB free)
- **32.0M,** — Frequency: K = kHz, M = MHz
- **100** — Calibration Tolerance at 25°C (in ±ppm)
- **100** — Frequency Stability over Temp. Range (in ppm)
- **–** — Temp. Range: C = -10° ~ +70°C; I = -40° ~ +85°C; M = -55° ~ +125°C; S = Customer specified
- **I** — (see above)

OR

- / - / 200 / I

- **200** — Total (overall) frequency tolerance in ±ppm
- **I** — Temp. Range: C = -10° ~ +70°C; I = -40° ~ +85°C; M = -55° ~ +125°C; S = Customer specified

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