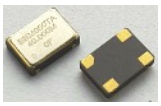
EQXO-75UIE Extended Industrial Temp Oscillator

7x5mm, SMD -40C +105C Ruggedised Clock Oscillator — 2.0MHz to 60.0MHz

FEATURES

- **2.0MHz to 60.0MHz frequency range**
- **Wide operating temp -40° to +105°C**
- **Ruggedised design to 3000G shock survivability**
- **Designed for demanding industrial applications**
- **Superior phase noise performance**
- **Femto second integrated phase jitter 150fs (typ)**
- **Custom crystal pre-ageing options available**
- **Supply Voltages: 2.5V and 3.3V**
- **X-tal Stabilisation: pre-age bake beyond 96hrs @ 100C**
- **Made in UK - ITAR RESTRICTION FREE**

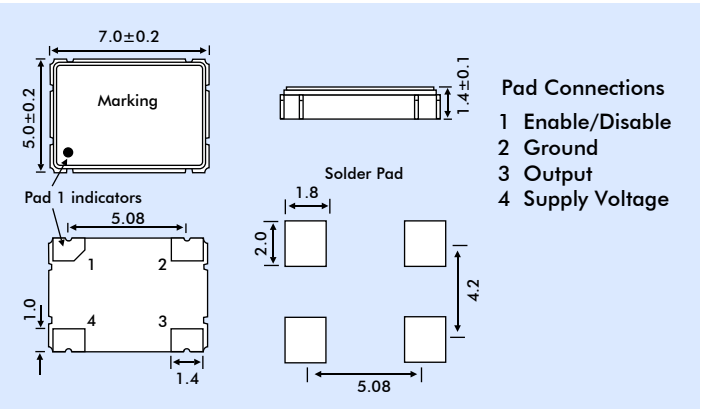
Manufactured in Britain



DESCRIPTION

EQXO-75UIE series is a ruggedised high-reliability, high temp clock oscillator in a standard format 7x5mm SMD ceramic package with hermetic weld-sealed metal lid. Designed by Euroquartz for demanding industrial applications, it will provide reliable operation with good frequency stability across an extended industrial operating temp band of -40C to +105C. Mechanical shock survivability tested to 3000G MIL-STD-883K Meth 2002.5, Condition C. Temp stability ±50, 75 & 100ppm are available with tighter options upon request (conditions dependant). This component is manufactured within our cleanroom facility in the south west UK, therefore comes free of ITAR restriction and can be produced with short lead time. Tighter ageing spec is available on request - all crystals are pre-aged as part of an additional process to aid long-term application stability.

OUTLINE & DIMENSIONS



SPECIFICATION

Model Number	EQXO-75UIE
Frequency Range	2.0MHz to 60.000MHz
Output Logic	LVCMOS
Supply Voltage V_{DD}	+2.5V, +3.3V ±10%
Voltage Level: Logic Hi "1" Logic Lo "0"	90% of V_{DD} (min.) 10% of V_{DD} (max.)
Current Consumption: 2.0~19.99MHz 20~60.00MHz Output State Disabled	6mA (max.) 16mA (max.) 10µA (max.)
Rise Time (Tr) / Fall Time (Tf)	10ns (max) measured 10% ~ 90% waveform
Load	15pF (max.)
Start-up Time	3ms (max)
Duty Cycle	50% ±5%
Enable/Disable Function	Enable/Disable function on Pad 1 is standard for EQXO-75UIE series oscillators 70% of VDD(min) Enable Output 30% of VDD(max) Disable Output
Phase Jitter (RMS) [26MHz, 3.3V]	150 fs typical (12kHz to 20MHz integrated)

SSB Phase Noise [25MHz, 3.3V]	Offset	10Hz	100Hz	1kHz	10kHz	100kHz	1MHz	5MHz
	dBc/Hz (typical)	-96	-129	-142	-159	-164	-163	-164
Storage Temperature		-65° to +150°C						
Ageing at 25°C		±1ppm maximum for first year						
Solder Profile		260°C max.						

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DESIGN QUALIFICATION APPROVAL & ENVIRONMENTAL SPECIFICATION

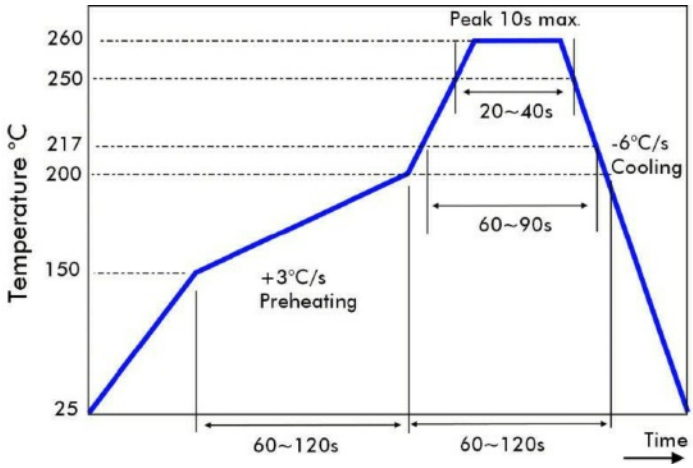
Thermal Shock:	MIL-STD-883F Method 1011.9 Condition B
Mechanical Shock:	MIL-STD-883K Method 2002.5 Condition C
Vibration:	MIL-STD-883F Method 2007.3
High Temp Storage:	MIL-STD-202 Method 108
Moisture Resistance:	JIS C7021:B-11
Seal:	Fine leak not to exceed 1x10^{-8}mB litres of He leakage.
Solerability:	MIL-STD-883E Method 2003.7

OPTIONAL SCREENING

Screening in accordance with MIL-O-55310C Class B
All devices are 100% tested to the following conditions:

Temp Cycling:	-55C to +105C, 10 cycles.
Constant Acceleration:	49000m/s2 for 1 min in XY plane.
Seal:	Fine leak not to exceed 1 x 10-8mB litres of He
Dynamic Burn-in:	105C for 168 hrs
Electrical Test:	Frequency, output waveform, output Voltage input current.

SOLDER TEMPERATURE PROFILE



ORDERING/PART NUMBER GENERATION

Example: 20.000MHz EQXO-75UIE050EAC

Frequency

Series Designation

Stability:
050 = ±50ppm
075 = ±75ppm
100 = ±100ppm
(For tighter stability, ask)

Operating Temperature Range:
I = -40° to + 85°C
E = -40° to + 105°C

Supply Voltage:
A = 3.3 Volts
B = 2.5 Volts

Optional Crystal Pre-Ageing:
Left Blank = Standard (additional 96hr oven pre-aged)
C = Custom Crystal Pre-age (contact sales)

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