

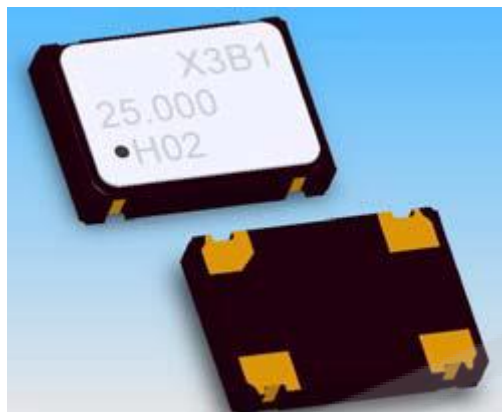


We are committed to the supply of all types of substrate wafers to the microelectronics industry

X Type Crystal Oscillator

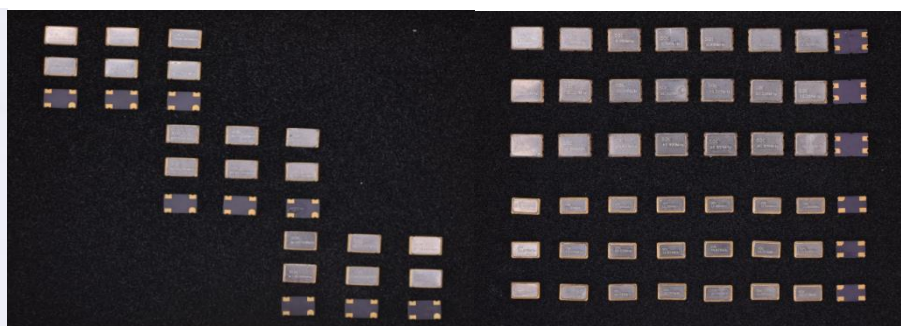
Features

- CMOS/TTL Compatible Clock Oscillator.
- Typical 7.0 x 5.0 x 1.2 mm ceramic metal SMD package.
- Resistance Seam welding for hermetical seal.
- Tape & Reel packaging for automatic assembly.
- Lead Free and RoHS compliant



ORDERING GUIDANCE

| Product Type | Supply Voltage (V) | Frequency Stability (ppm) | Operating Temp. Range (°C) | — | Frequency (MHz) |
|---|--------------------------------------|---|--|-------------|-----------------|
| Code: Meaning | Code: Meaning | Code: Meaning | Code: Meaning | Dash | |
| X: 7X5 SMD CMOS/TTL XO | 1: 1.8 2: 2.5 3: 3.3 5: 5.0 | A: ±25 B: ±50 C: ±100 D: ±20 E: ±10 G: ±15 H: ±30 | 1: 0~+70 2: -40~+85 3: 0~+85 4: -20~+70 5: -10~+85 6: -10~+70 7: -10~+60 8: 0~+60 | | XXX.XXXXXX |
| Ordering example: X3B1-25.000 7x5 SMD CMOS/TTL XO, 3.3V, ±50ppm, 0°C~70°C, 25MHz | | | | | |
| Note: If there're any other particular requirements, they should be specified in customers' order. | | | | | |



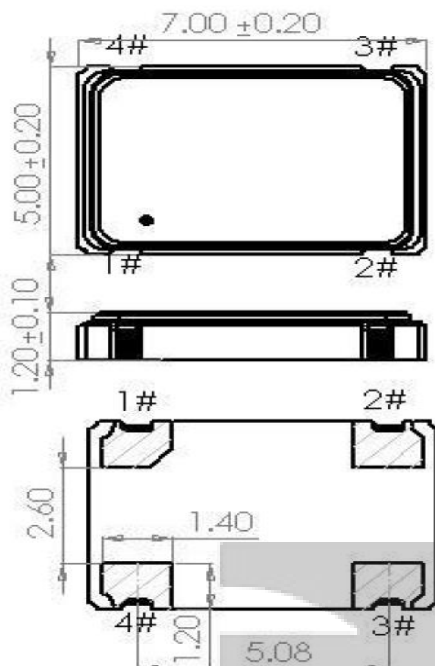
HANGZHOU FREQCONTROL ELECTRONIC TECHNOLOGY LTD.

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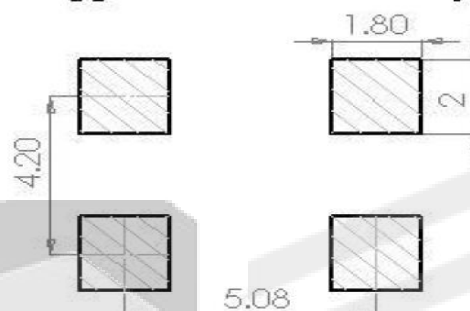


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| PAD No. | Connection |
|---------|------------|
| 1# | E/D or NC |
| 2# | GND |
| 3# | OUTPUT |
| 4# | VDD |

Suggested Solder Pad Layout



All Dimensions in mm

Electrical Specification

| Parameter | Min | | | | Max | | | | Unit |
|---|--|------|------|-----|--------------------------------------|------|------|-----|------|
| Supply Voltage (V_{DD}) $\pm 10\%$ | 1.62 | 2.25 | 2.97 | 4.5 | 1.98 | 2.75 | 3.63 | 5.5 | V |
| Frequency Range | 0.5 | | | | 135 | 135 | 135 | 110 | MHz |
| Frequency Stability | Refer to Ordering Guidance (Overall condition Inclusive of calibration @ 25°C, operating temperature change, V_{DD} variation, load variation, aging, etc.) | | | | | | | | ppm |
| Operating Temperature Range | Refer to Ordering Guidance | | | | | | | | °C |
| Supply Current | | | | | | | | | mA |
| 0.5MHz =<F _o <10MHz | - | | | | 3 | 3 | 5 | 7 | |
| 10MHz =<F _o <20MHz | - | | | | 5 | 5 | 10 | 15 | |
| 20MHz =<F _o <50MHz | - | | | | 10 | 15 | 20 | 30 | |
| 50MHz =<F _o <80MHz | - | | | | 15 | 20 | 25 | 40 | |
| 80MHz =<F _o <135MHz | - | | | | 20 | 25 | 40 | 60 | |
| Duty Cycle (CMOS) | 45 | | | | 55 | | | | % |
| Output High (Voh) | 0.9V _{DD} | | | | - | | | | V |
| Output Low (Vol) | - | | | | 0.1V _{DD} | | | | |
| Rise Time/Fall Time (tr/TF) | Measured between 10% to 90% of V_{DD} with output load of 15pF | | | | | | | | nS |
| 0.5MHz =<F _o <5MHz | - | | | | 10 | 8 | 6 | 5 | |
| 5MHz =<F _o <20MHz | - | | | | 8 | 6 | 5 | 4 | |
| 20MHz =<F _o <50MHz | - | | | | 6 | 5 | 5 | 4 | |
| 50MHz =<F _o <80MHz | - | | | | 5 | 5 | 4 | 3 | |
| 80MHz =<F _o <135MHz | - | | | | 5 | 4 | 3 | 2 | |
| Output Load(Fan-out) (CMOS) | 15 | 15 | 30 | 50 | - | | | | pF |
| Tristate Function(Input to Output Enable) | 1.26 | 1.75 | 2.0 | 4.0 | (With Pin1 floating, Output enabled) | | | | V |
| Output Disable(Hi-Z) | - | | | | 0.5 | 0.5 | 0.5 | 0.8 | |
| Standby Current | - | | | | 10 | | | | μA |
| Start Time | - | | | | 10 | | | | mS |
| Phase Jitter(RMS, 12KHz to 20MHz) | - | | | | 1 | | | | pS |
| Storage Temperature | -55 | | | | 125 | | | | °C |

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