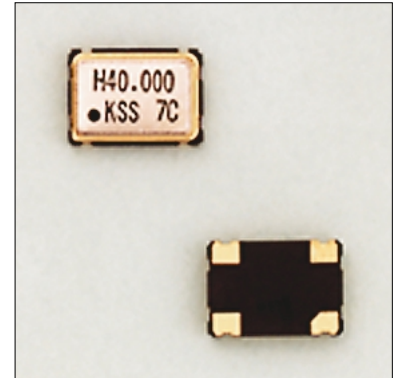


FXO-31F

Miniature Clock Crystal Oscillator

■Features

- It is a compact and thin ceramic package with a metalized lead for surface mounting that is able to be automatically loaded.
- Reflow soldering is possible.
- CMOS, TTL IC direct drive is possible. Depending upon the frequency band, there is also a crystal oscillator with a CMOS-IC with a tri-state function built in.
- Use in the broad frequency band from 1.8MHz to 50MHz is possible.



■Specifications

| Item | Type | FXO-31F | FXO-31FH | FXO-31FT | FXO-31FL |
|-----------------------------|----------------|---|------------------------------|--------------------------|---|
| Application | | C-MOS Output Type | C-MOS Output Heavy Load Type | TTL Output Type | Low Voltage Type |
| Frequency Range | | 1.8~50MHz | | | |
| Standard Frequency | | Table 1 | | | |
| Frequency Stability | | $\pm 100 \times 10^{-6}$ | | | |
| Operating Temperature Range | | -10~+70°C | | | |
| Storage Temperature Range | | -55~+125°C | | | |
| Supply Voltage | | 5V \pm 0.5V | | | 3.3V \pm 0.3V |
| Current | 25mA MAX. | 25mA MAX. (1.8~15.0MHz) | | 18mA MAX. (1.8~39.9MHz) | |
| | | 30mA MAX. (15.1~32.0MHz) | | 25mA MAX. (40.0~50.0MHz) | |
| | | 45mA MAX. (32.1~50.0MHz) | | | |
| Load | 15pF (LS10TTL) | 50pF (10TTL) | | 20pF (5TTL) | |
| Output Level | | $V_{OH} : 0.9 \times V_{DD} \text{ MIN. } V_{OL} : 0.5V \text{ MAX.}$ | | | $V_{OH} : 0.9 \times V_{DD} \text{ MIN. } V_{OL} : 0.4V \text{ MAX.}$ |
| Output Symmetry | | 40~60% (VT=1/2V _{DD}) | | 40~60% (VT=1.4V) | |
| Rise Time/Fall Time | | 10ns MAX. | | 6ns MAX. | 6ns MAX. |
| Start-up Time | | 10ms MAX. | | | |
| Vibration | | 10~55Hz Amplitude 1.5mm, Cycle 2 minute, 3 direction, 2 hour each | | | |
| Shock | | 1000G | | | |
| Weight | | 0.2g | | | |

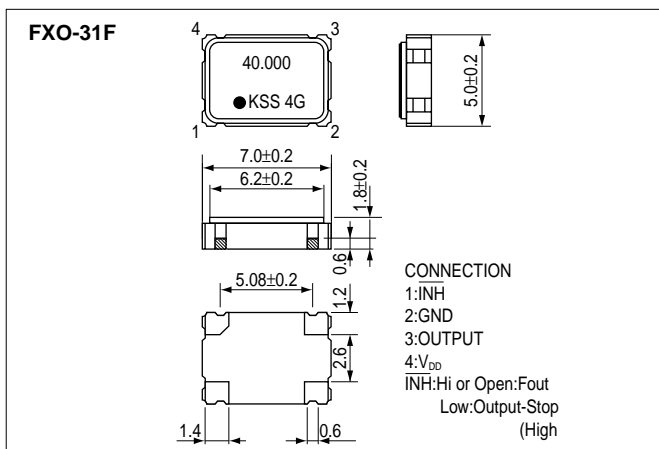
*Taping item packaging : one unit 3,000 pcs or 1,000 pcs

■Table 1

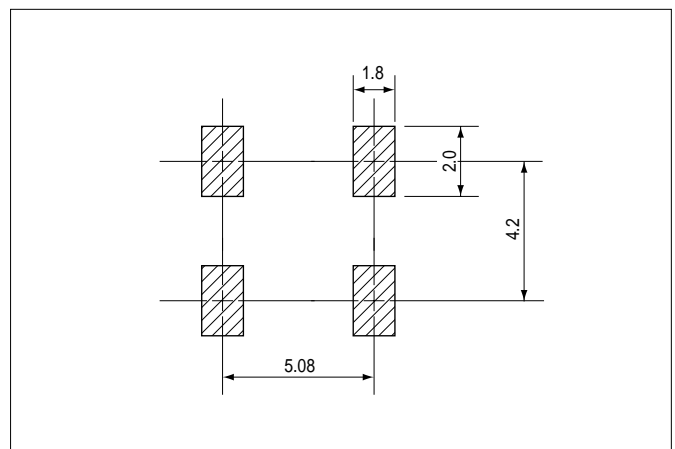
Standard Frequencies

| Frequency (MHz) | | |
|-----------------|----------|----------|
| 1.8432 | 12.000 | 22.5792 |
| 2.000 | 12.288 | 24.000 |
| 2.4576 | 12.322 | 25.000 |
| 2.500 | 12.800 | 25.175 |
| 3.579545 | 13.500 | 27.000 |
| 3.6864 | 14.31818 | 28.63636 |
| 4.000 | 14.7456 | 31.500 |
| 4.096 | 15.000 | 32.000 |
| 4.9152 | 15.360 | 33.8688 |
| 5.000 | 16.000 | 40.000 |
| 6.000 | 16.384 | 42.1052 |
| 6.144 | 16.842 | 48.000 |
| 6.400 | 16.9344 | |
| 7.15909 | 18.000 | |
| 7.680 | 18.432 | |
| 8.000 | 19.6608 | |
| 8.192 | 20.000 | |
| 9.8304 | 21.150 | |

■Outline



■Land Pattern(reference)



Dimensions(mm)