

NK-N Type

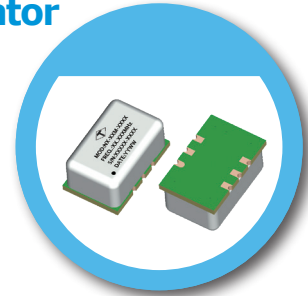
14.5 x 9.6 mm Oven Controlled Crystal Oscillator

FEATURE

- Dimension 14.5 x 9.6 x 6.5 mm typical
- 6-Pin SMD package
- Frequency Range, 10 MHz to 40MHz
- ± 30 ppb stability over -40 to 85°C
- Stratum 3 (Overall ± 4.6 ppm including 20 years aging.)

TYPICAL APPLICATION

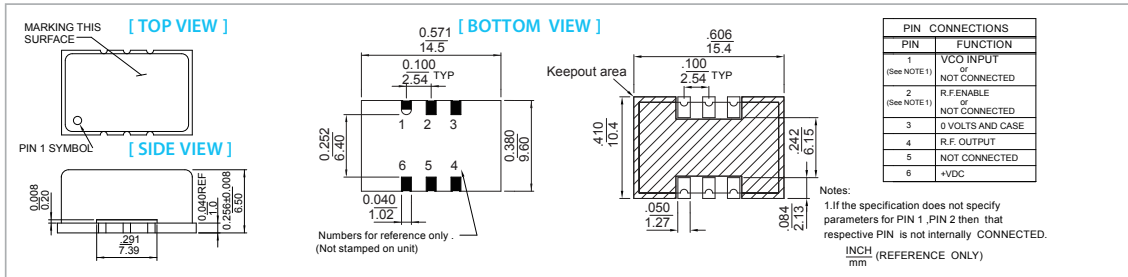
- SDH/SONET, Telecommunication base station
- Test and measurement equipment
- Synthesizer, Digital switch, Reference Timing Circuit
- Packet Timing Protocol (e.g. 1588)



RoHS Compliant

DIMENSION

SOLDER PAD LAYOUT



ELECTRICAL SPECIFICATION

| Parameter | Min. | Typ. | Max. | Unit | Test Condition & Notes |
|--|-------|-------------|-------|--------|---|
| Output Frequency | — | 20 | — | MHz | Available frequency range is from 5MHz to 40MHz. Standard frequencies are 10, 12.8, 19.2, 20, 25, and 38.88MHz. |
| Waveform | — | Rectangular | — | — | |
| Level | — | HCMOS | — | — | |
| "1" Level | 2.4 | — | — | V | |
| "0" Level | — | — | 0.4 | V | |
| Load | — | 15 | — | pF | |
| Duty Cycle | 45 | 50 | 55 | % | @ +1.65 V |
| Spurious | — | — | -60 | dBc | |
| Frequency Stability Ambient | -30 | — | +30 | ppb | -40°C to +85°C, referenced to +25°C Refer to Freq. Stability Vs Temp. Range table. |
| Aging | — | — | — | ppb | after 30 days |
| Daily | -2.0 | — | +2.0 | ppb | |
| Yearly | -0.4 | — | +0.4 | ppm | |
| 10 years | -2.0 | — | +2.0 | ppm | |
| Voltage | -5 | — | +5 | ppb | $\pm 5\%$ Change |
| Load | -10 | — | +10 | ppb | $\pm 10\%$ Change |
| Warm-up | -0.1 | — | +0.1 | ppm | In 5 minutes @ +25°C, referenced to 1 hour |
| Phase Noise @ 20 MHz | — | -98 | -92 | dBc/Hz | @ 10 Hz |
| | — | -126 | -120 | | @ 100 Hz |
| | — | -145 | -140 | | @ 1 kHz |
| | — | -152 | -150 | | @ 10 kHz |
| Electrical Frequency Adjustment | — | — | — | — | |
| Range | — | — | -5.0 | ppm | VCO @ 0V |
| | 5.0 | — | — | ppm | VCO @ 3.3V |
| Control | 0 | 1.65 | 3.3 | V | |
| Slope | — | Positive | — | — | |
| Input impedance | 100 | — | — | Kohm | |
| Input Power Voltage | 3.135 | 3.3 | 3.465 | V | 5.0V input voltage is available. Please contact us for detail information. |
| Current | — | 500 | 600 | mA | @ turn on |
| Steady state | — | 0.5 | 0.6 | W | @ +25°C |

FREQ. STABILITY vs. TEMP. RANGE

| Temp. (°C) | ppb | ± 10 | ± 20 | ± 30 | ± 50 |
|------------|-----|----------|----------|----------|----------|
| -20 ~ +70 | | △ | ○ | ○ | ○ |
| -40 ~ +85 | | X | △ | ○ | ○ |

* ○: Available △: Conditional X: Not available

Note: not all combination of options are available. Other specifications may be available upon request.