

Helping Customers Innovate, Improve & Grow



Description

The OX-202 is part of a series of oscillators specifically designed to support Timing Over Packet applications, in particular 1588-2008 based frequency and phase reference systems. The OX-202 is stratum 3E compliant.

Features

- Available in three standard frequencies (10MHz, 12.8MHz and 20MHz)
- Excellent temperature stability
- Superior long term stability
- Optimized to support Timing Over Packet applications
- Stratum 3E compliant according to GR1244

Applications

- SETS clock support
- Wireless Base Stations
- Edge and Core Routers

Performance Specifications

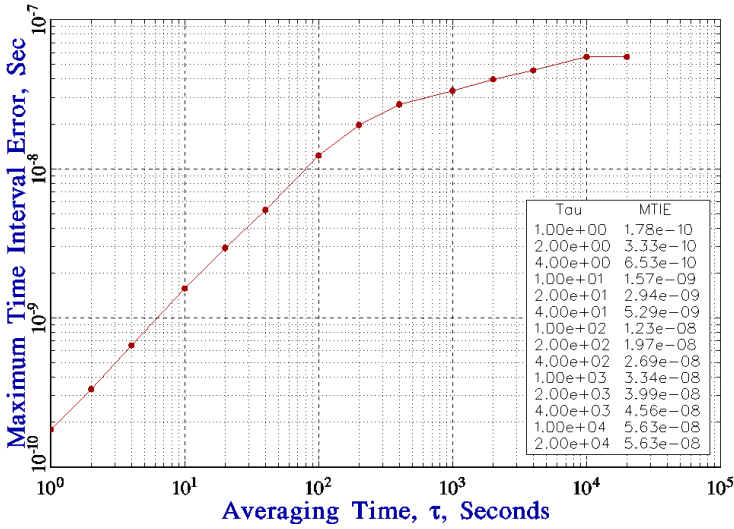
| Frequency Stability ¹ | | | | | |
|---|-----|-----|-------|------------|---|
| Parameter | Min | Typ | Max | Units | Notes |
| Over all stability (df/f ₀) | | | ±2.6 | ppm | Free run accuracy (20 years) |
| Drift | | | ±1 | ppb | Over 24 hours and ±3.0°C |
| Temperature stability (df/f) | | | 10 | ppb pk -pk | -40 to 85°C |
| Initial Tolerance (df/f ₀) | | | ±0.5 | ppm | @25°C |
| vs. supply voltage change (df/f) | | | ±2 | ppb | static; 3.3V ± 1% |
| vs. load change (df/f) | | | ±5 | ppb | static; Load ± 5% |
| vs. aging / daily (df/f) | | | ±0.75 | ppb | after 7 days; @25°C |
| vs. aging / month (df/f) | | | ±25 | ppb | after 7days; @25°C |
| vs. aging / year (df/f) | | | ±100 | ppb | after 7 days; @25°C |
| vs. aging / 20 years (df/f) | | | ±2.0 | ppm | after 7 days; @25°C |
| Phase Stability | | | | | |
| Parameter | Min | Typ | Max | Units | Notes |
| Jitter | | | 1 | ps rms | @12kHz to 20MHz |
| MTIE 1s | | 0.2 | | ns | Wander Generation per GR1244, system performance when locked through a 1mHz loop bandwidth, see typical performance data. |
| MTIE 10s | | 1.6 | | ns | |
| MTIE 100s | | 12 | | ns | |
| MTIE 1000s | | 34 | | ns | |

Performance Specifications

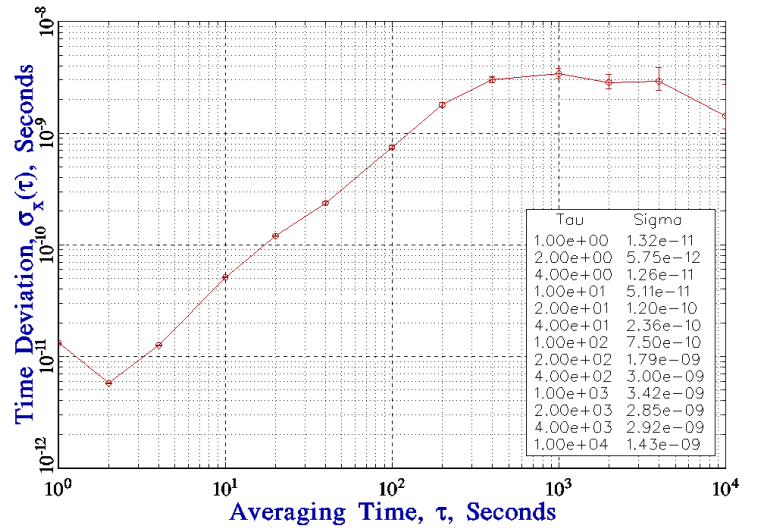
| Phase Stability (continued) | | | | | |
|----------------------------------|--|------|------|---------|---|
| Parameter | Min | Typ | Max | Units | Notes |
| TDEV 1s | | 0.01 | | ns | Wander Generation per GR1244, system performance when locked through a 1mHz loop bandwidth, see typical performance data. |
| TDEV 10s | | 0.05 | | ns | |
| TDEV 100s | | 0.8 | | ns | |
| TDEV 1000s | | 3.5 | | ns | |
| Phase Noise | | | | | |
| Parameter | Min | Typ | Max | Units | Notes |
| Phase Noise at 1 Hz Offset | | | -85 | dBc/Hz | |
| Phase Noise at 10 Hz Offset | | | -115 | dBc/Hz | |
| Phase Noise at 100 Hz Offset | | | -135 | dBc/Hz | |
| Phase Noise 1 kHz Offset | | | -145 | dBc/Hz | |
| Phase Noise at 10 kHz Offset | | | -150 | dBc/Hz | |
| Phase Noise at 100kHz Offset | | | -150 | dBc/Hz | |
| RF Output | | | | | |
| Signal | HCMOS | | | | |
| Load | 15 | | | pF | ±10% |
| Rise Time | <10 | | | ns | @ 10% to 90% V _{out} |
| Fall Time | <10 | | | ns | @90% to 10% V _{out} |
| Duty Cycle | 45/55 | | | % | @ 50% V _{out} |
| V Low | 0.4 | | | V | With V _s 3.0V and 15pF load |
| V High | 2.4 | | | V | With V _s 3.0V and 15pF load |
| V Low | 0.5 | | | V | With V _s 5.0V and 15pF load |
| V High | 3.5 | | | V | With V _s 5.0V and 15pF load |
| Supply | | | | | |
| Supply Voltage (V _s) | 3.3, 5.0 | | | V | ±10% |
| Power consumption | <1.5 | | | W | Steady state, @ V _s = 3.3V, 25°C |
| Power consumption | <3.3 | | | W | During warm up, @ V _s = 3.3V, 25°C |
| Additional Parameters | | | | | |
| Warm Up Time | 3 | | | minutes | @25°C to final frequency (1 Hour) within ±0.1ppm |
| ROHS | ROHS 6 compliant | | | | |
| Washable | Washable device (hermetically sealed). | | | | |
| Absolute Maximum Ratings | | | | | |
| | Min | | Max | | Units |
| Operating temperature range | -40 | | 85 | | °C |
| Storage temperature range | -50 | | 90 | | °C |

Typical Performance

FREQUENCY STABILITY

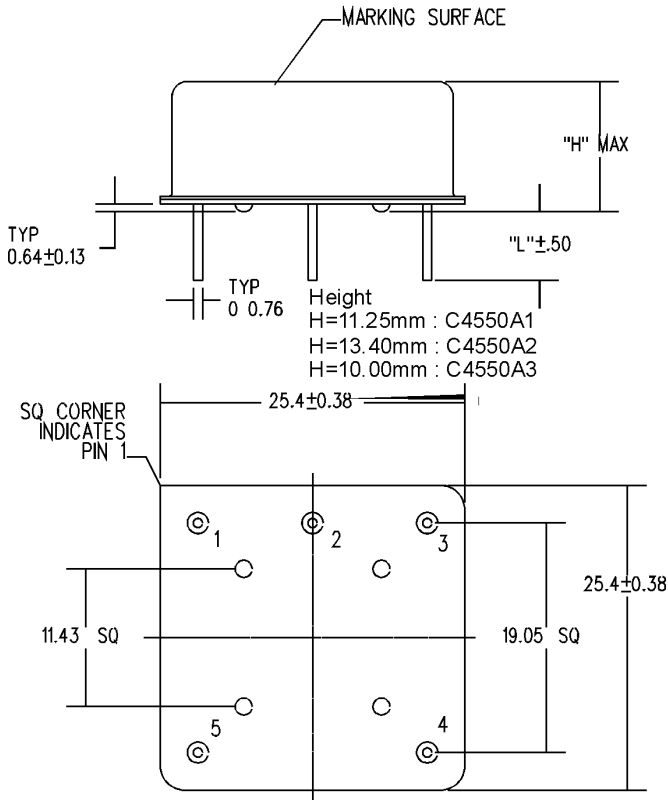


TIME STABILITY



Wander Generation per GR1244, system performance when locked through a 1MHz loop bandwidth.

Outline Drawing / Enclosure



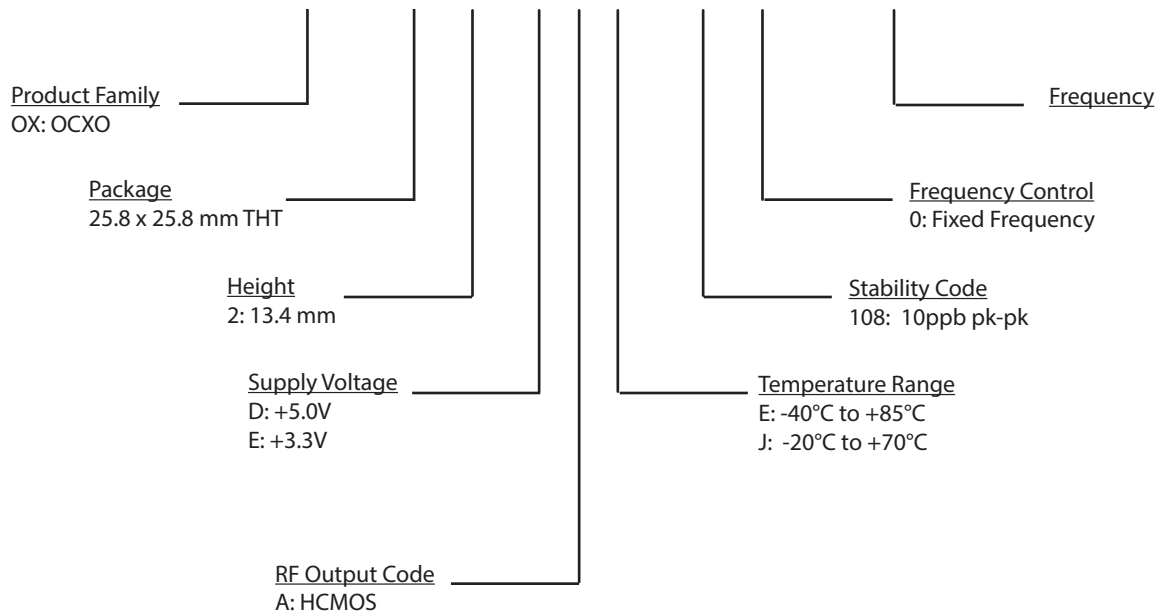
Dimensions in mm

| Height Codes | | |
|--------------|------------|----------------|
| Code | Height "H" | Pin Length "L" |
| 2 | 13.4 | 6.35 |

| Pin Assignment | |
|----------------|--|
| Pin | Connection |
| 1 | RF Out |
| 2 | Ground (case) |
| 3 | NC |
| 4 | NC |
| 5 | Supply Voltage Input (V _s) |

Ordering Information

OX - 202 2 - E A E - 108 0 - 10M0000000



Notes:

1. Contact factory for improved stabilities or additional product options. Not all options and codes are available at all frequencies.
2. Unless other stated all values are valid after warm-up time and refer to typical conditions for supply voltage, frequency control voltage, load, temperature (25°C).
3. Phase noise degrades with increasing output frequency.
4. Subject to technical modification.
5. Contact factory for availability.

For Additional Information, Please Contact

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