# XO9095 Series
# High Frequency OCXO

## FEATURES

Low Aging
Low Spurious
Low Phase Noise
Product Classification: EAR99
Various custom output frequencies up to 6 GHz

## APPLICATIONS

Electronic Warfare
GPS
Radar
SATCOM
Test Equipment

## ELECTRICAL SPECIFICATIONS at 1.28GHz

| Parameter | Symbol | Min. | Typ. | Max. | Units | Conditions |
|---|---|---|---|---|---|---|
| Frequency Range | $F_0$ | 1 | | 6 | GHz | Standard Frequencies: 1GHz, 1.28GHz, 2GHz, 4GHz, 6GHz |
| **Frequency Stability** | | | | | | |
| Vs. Temperature | $\Delta_{F/F}$ | -100 | | +100 | ppb | Over the Operating Temperature Range |
| Vs. Supply Voltage variation | | -10 | | +10 | ppb | 5% change in the supply voltage |
| Daily Aging | | -5.0 | | +5.0 | ppb | After 30-days power on |
| 1 Year Aging | | -0.5 | | +0.5 | ppm | |
| 20 – Years Aging | | -2.0 | | +2.0 | ppm | |
| Retrace | | | ±100 | | ppb | 24 hours OFF and after 30 minutes ON |
| Allan Deviation | | | $1E^{-10}$ | | | 0.1 sec t0 10 sec |
| **RF Output** | | | | | | |
| Output Type | | Sinewave | | | | |
| Output Level | | +10 | | | dBm | |
| Output Load | | | 50 | | Ω | ±10% |
| **Additional Parameters** | | | | | | |
| Control Voltage(Vc) | | 0 | ±2.25 | 4.5 | V | |
| Tuning | | | ± 2.5 | | ppm | |
| Tuning slope | | Positive | | | | |
| Input Impedance | | 10 | | | KΩ | At Vc pin |
| Modulation Bandwidth | | 150 | | | Hz | |
| $V_{REF}$ | | | 4.5 | | V | |
| **Phase Noise** | | | | | | |
| Phase-Noise (Under Static Conditions) | | | | -76 | dBc/Hz | 10 Hz Offset |
| | | | | -110 | dBc/Hz | 100 Hz Offset |
| | | | | -135 | dBc/Hz | 1kHz Offset |
| | | | | -151 | dBc/Hz | 10kHz Offset |
| | | | | -154 | dBc/Hz | 100kHz Offset |

| Parameter | Symbol | Min. | Typ. | Max. | Units | Conditions |
|---|---|---|---|---|---|---|
| Harmonics | | | | -45 | dBc | |
| Sub-Harmonics | | | | -45 | dBc | |
| Spurious | | | | -80 | dBc | |
| g-sensitivity | | | | 0.7 | ppb/g | Worst case axis |
| Warm-up time | | | 3 | 5 | minutes | Test Condition (@ 25°C): Oscillator turned ON after 24 Hours OFF. Frequency change 5 minutes after turn ON will be within ±0.1ppm of Long-term stable nominal frequency. |
| Start-up time | | | | 1 | Sec | Output level to be 90% of max output level |
| **Temperature, Supply Voltage & Power Consumption** | | | | | | |
| Operating Temperature | OTR | -40 | | +85 | °C | Full Specification Compliance |
| Operating Voltage | Vcc | +4.75 | +5.0 | +5.25 | VD | |
| Power Consumption | | | | 2.0 | Watts | Steady state @ 25°C, In Still Air |
| | | | | 3.0 | Watts | @ Start-up @30°C |
| **Absolute Maximum Ratings (operable only)** | | | | | | |
| Supply Voltage | | | | +5.5 | VD | |
| Operable Temperature | | -55 | | +85 | °C | |
| Storage Temperature | STR | -55 | | +100 | | |
| Output Load | | 45 | | 55 | Ω | |

## ENVIRONMENTAL CONDITIONS

| | |
|---|---|
| Seal | Hermetic |
| RoHS | Full RoHS Compliance |
| Mechanical Shock | Per MIL-STD-202, 30G, 11ms |
| Vibration | Per MIL-STD-202, 5G 50Hz to 2KHz |



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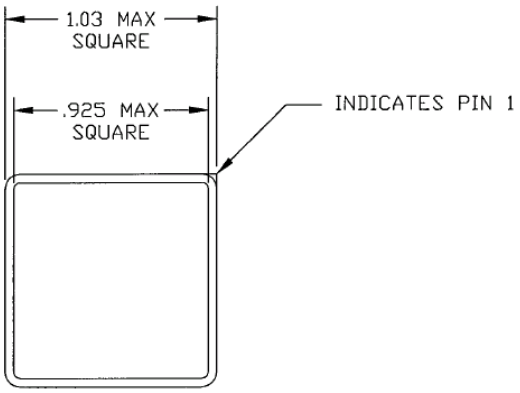
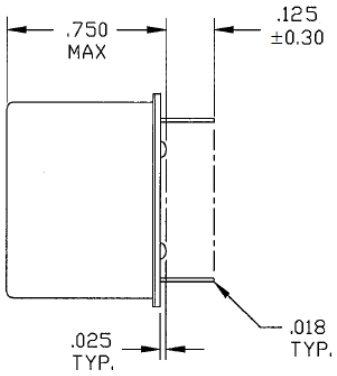
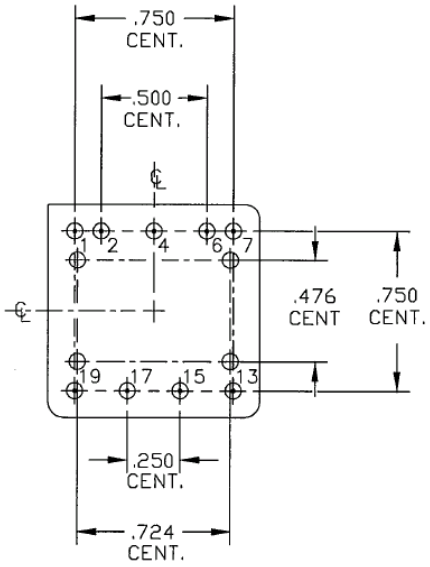
## MECHANICAL AND PIN OUT INFORMATION




Unless otherwise specified, all dimensions are in inches

| Pad | Function |
|---|---|
| 1 | RFOUT |
| 2 | RF Ground |
| 4 | Case Ground |
| 7 | VTUNE |
| 13 | VREF |
| 17 | NC |
| 19 | Supply Vcc+ |
| 6, 15 | NC |

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