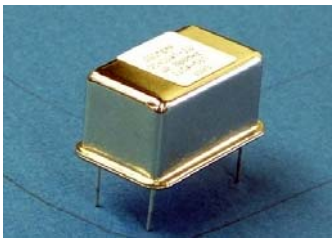
# OCXO 147 SERIES



The OCXO 147 series oscillators feature small packages designed for applications where space is at a premium and good frequency stability is required. The oscillators can be used in many communications applications including FemtoCell. A choice of quartz resonators offers a variety of performance versus cost options to fit most applications.

## Features:

- Typical 20.4 x 12.8 x 11.0 mm, standard DIP 14 package
- Stratum 3
  (Overall ± 4.6 ppm including 10 years aging)
- AT-Cut Crystal

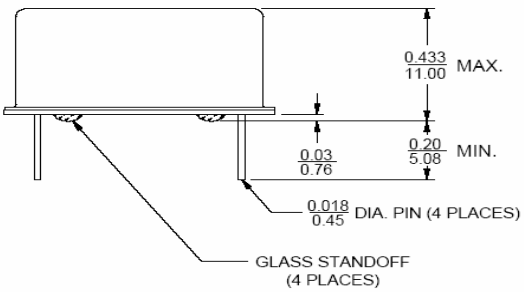
## Ordering Information

| OCXO | Package (mm) | Supply Voltage (V) | Pulling Range (ppm) | Freq. Stability (ppb) | Temp. Range (ºC) | Output Logic and Symmetry | | Oscillator Mode | Pin Out | Lead Free | Freq. (MHz) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 147 Series | L: 20.4<br>W: 12.8<br>H: 11.0 | 3.3<br>5.0 | ±5.0<br>±3.0<br>NC | ± 30<br>± 50<br>± 100<br>± 200 | 0~+50<br>0~+70<br>-30~+70 | Output<br>CMOS | Symmetry<br>50±5% | * Not selectable by customer | Normal<br><br>Please refer to "OUTLINE DRAWING" | RoHS Compliant<br>Not RoHS Compliant | XX.XXXXXX |

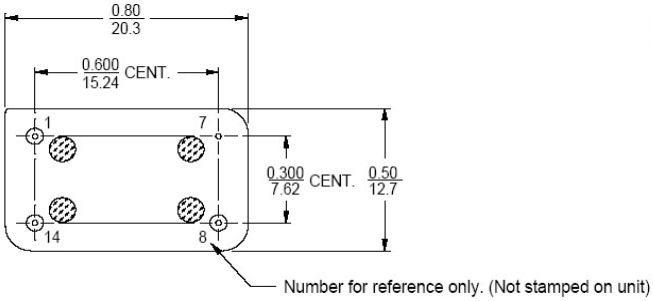
Ordering Example: OCXO147; $V_{DD}$: 5V, Pulling Range ±5.0 ppm; Freq. Stability: 50ppb; Temp. Range: 0ºC to + 70ºC; Load: CMOS, Symmetry: 50±5%; Appearance; Normal; RoHS Compliant; Freq. 38.880000MHz

## Outline Drawing

[TOP VIEW]




[BOTTOM VIEW]




INCH
mm (Reference only)

## Freq. Stability vs. TEMP. Range

| ppb / Temp. (ºC) | ±30 | ±50 | ±100 | ±200 |
|---|---|---|---|---|
| 0 to +50 | O | O | O | O |
| 0 to +70 | △ | O | O | O |
| -30 to +70 | X | △ | O | O |

**O = Standard △ = Available (case by case) X = Not available**

| PIN CONNECTIONS | |
|---|---|
| PIN | FUNCTION |
| 1 (See Note 1) | VCO INPUT or NOT CONNECTED |
| 7 | 0 VOLTS & CASE |
| 8 | R.F. OUTPUT |
| 14 | +VDC |

Note 1. If the specification does not specify parameters for PIN 1 then PIN 1 is not internally CONNECTED

MARKING

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## Electrical Specification

| | Min. | Nominal | Max. | Note | Unit |
|---|---|---|---|---|---|
| ***Output*** | | | | | |
| Frequency | | 10.0 | | | MHz |
| Wave Form | | CMOS | | | |
| Level "1" | 3.5 | | | | V |
| Level "0" | | | 0.3 | | |
| Load | | 15 | | | pF |
| Spurious | | | -60 | | dBc |
| ***Frequency Stability*** | | | | | |
| Ambient | | | ±200 | Referenced to +25ºC | ppm |
| Operating Temperature | -30 | | +70 | | ºC |
| Storage Temperature | -40 | | +85 | | |
| Aging * | | | | | |
| At time of shipment | | | | | ppb |
| Daily | | | ±5.0 | | |
| Yearly | | | ±0.5 | | ppm |
| 10 Years | | | ±4.6 | Overall | |
| Voltage | | | ±50 | VDC ±5% change | ppb |
| Warm-up | | | ±100 | In 5 minutes @+25ºC (Reference to 30 minutes) | |
| Phase Noise @ 10 MHz | | | | | dBc |
| @ 10 Hz | | | -85 | | |
| @ 100 Hz | | | -115 | | |
| @ 1 kHz | | | -135 | | |
| @ 10 kHz | | | -140 | | |
| ***Electrical Frequency Adjustment*** | | | | | |
| Range | 5 | | | | ±ppm |
| Control | 0 | | +5 | | V |
| Slope | | Positive | | | |
| VCO Input Impedance | 100 | | | | KΩ |
| ***Input Power*** | | | | | |
| Supply Voltage | 4.75 | 5.0 | 5.25 | | V |
| @ turn on | | | 2.5 | | W |
| Steady state @25ºC | | | 1.0 | | |