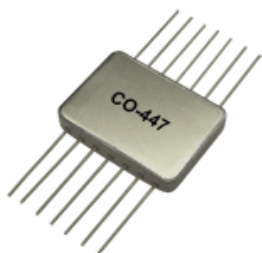




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[XOs](#) > [CO-447](#)**CO-447 HCMOS, AC MOS and FCT Clock Oscillators****Features:**

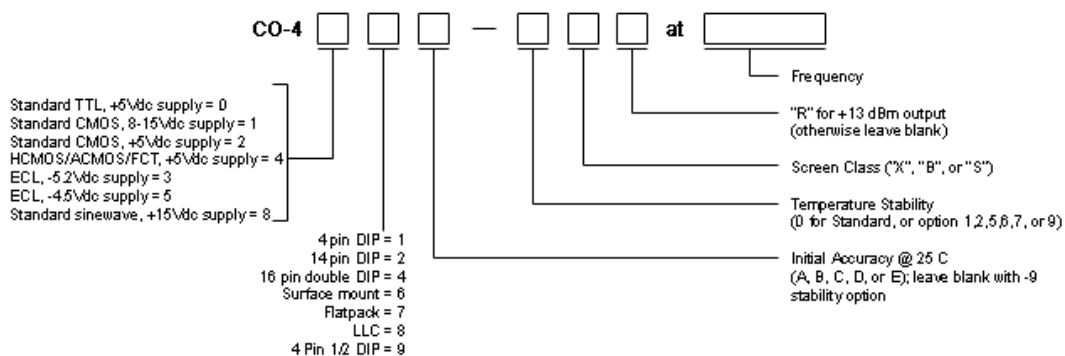
- 1 Hz to 175 MHz Frequency Range
- Low Profile 14 Pin Flatpack
- HCMOS/AC MOS/FCT/ACT Compatible
- Tri-state Output Available
- Available with 3.3 Vdc input below 20 MHz

**SPECIFICATIONS**

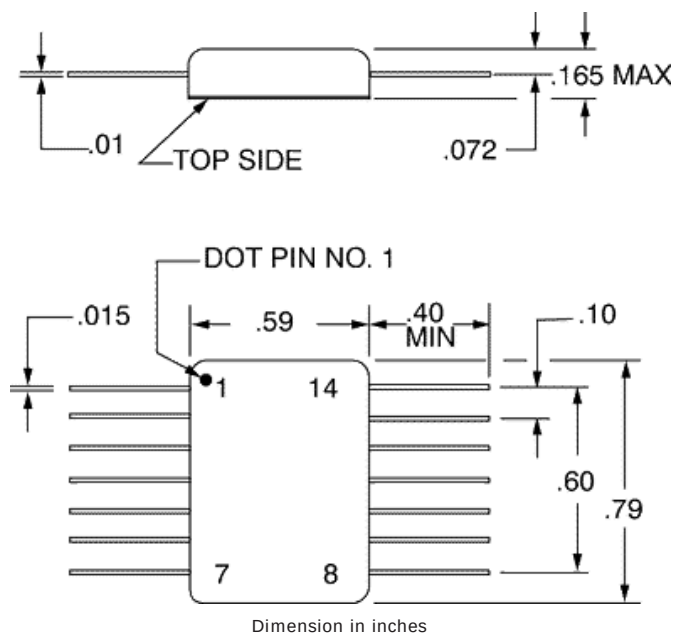
|                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Series</b>                                                                                                                                                                                                                                                         | <b>CO-447: Flatpack</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Frequency</b>                                                                                                                                                                                                                                                      | 1 Hz-175 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Supply</b>                                                                                                                                                                                                                                                         | 5 Vdc $\pm$ 5%<br>(Available with 3.3 Vdc input below 20 MHz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Accuracy<br/>(Maximum Error at 25°C)</b>                                                                                                                                                                                                                           | <b>CO-447A</b> $\pm$ 50 ppm<br><b>CO-447C</b> $\pm$ 25 ppm<br><b>CO-447D</b> $\pm$ 15 ppm<br><b>CO-447B</b> $\pm$ 10 ppm<br><b>CO-447E</b> $\pm$ 1 ppm*<br>*Stability via external capacitor; (<60 MHz only; except 449E $\leq$ 20 MHz)                                                                                                                                                                                                                                                                                                                   |
| <b>Temperature Stability</b><br><br>Improved accuracy/stability available on some models. For example, for $\pm 7$ ppm over 0°C to +50°C and for $\pm 10$ ppm over 0°C to +70°C. Improvement is also available over wider temperature ranges. Please contact factory. | <b>STANDARD:</b> 0°C      to   +70°C: $\pm$ 25 ppm<br><b>Option 1:</b> -55°C    to   +85°C: $\pm$ 50 ppm<br><b>Option 2:</b> -55°C    to   +125°C: $\pm$ 50 ppm<br><b>Option 5:</b> 0°C        to   +50°C: $\pm$ 5 ppm<br><b>Option 6:</b> 0°C        to   +50°C: $\pm$ 10 ppm<br><b>Option 7:</b> -55°C    to   +125°C: $\pm$ 100 ppm<br><b>*Option 9:</b> -55°C    to   +200°C: $\pm$ 300 ppm<br>(Option 9: N/A in CO-448 or above 20 MHz in CO-440 Series)<br>*Specified stability includes initial accuracy:<br>do not specify A,B,C,D or E accuracy. |
| <b>Aging Rate<br/>(typical after 30 days)</b>                                                                                                                                                                                                                         | 3 ppm first year<br>2 ppm/year thereafter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

[top of page](#)**How to Order Hybrid XO's - CO-400 Series**

(Note: Not all combinations possible. See above for appropriate options.)



| SCREEN TESTING OF ABOVE MODELS              |                    |                     |                                    |   |                                                                                                                                                                                                                 |
|---------------------------------------------|--------------------|---------------------|------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SCREEN TEST                                 | MIL-STD-883 METHOD | Standard<br>CLASS X | Options<br>CLASS D CLASS B CLASS S |   |                                                                                                                                                                                                                 |
| Stabilization Bake (150°C)                  | —                  | X                   | X                                  | X | Class S screen test requirements include 24 hour additional bake-out, 80 hour additional burn-in, thermal shock, PIND test and radiographic inspection in addition to Class B Screening. Has major cost impact. |
| Seal Test (Gross and Fine)                  | 1014, Cond A2      | X                   | X                                  | X |                                                                                                                                                                                                                 |
| Temperature Cycling (Thermal Shock)         | 1010, Cond B       |                     | X                                  | X |                                                                                                                                                                                                                 |
| Burn-in, operating 160 hours @125°C         | —                  |                     | X                                  | X |                                                                                                                                                                                                                 |
| Acceleration (5000g in Y <sub>1</sub> axis) | 2001, Cond A       |                     |                                    | X |                                                                                                                                                                                                                 |

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#### Pinouts

| Pin   | Function      |
|-------|---------------|
| 1     | *N/C          |
| 7     | OV, case, gnd |
| 8     | Output        |
| 14    | Supply +      |
| Other | N/C           |

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