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## CO-448 HCMOS, AC MOS, and FCT Clock Oscillators



### Features:

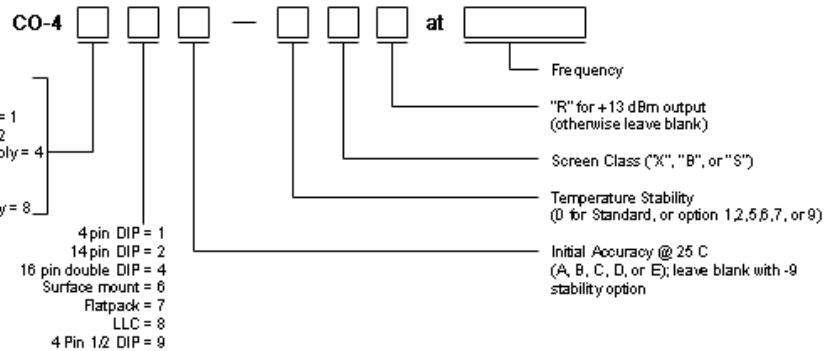
- 100 kHz to 50 MHz Frequency Range
- Sealed Ceramic Leadless Chip Carrier
- HCMOS/ACMOS/FCT/ACT Compatible
- Lowest Profile

SPECIFICATIONS																																				
Series	CO-448: Leadless Chip Carrier																																			
Frequency	100 kHz-50 MHz																																			
Supply	5 Vdc ± 5%																																			
Accuracy (Maximum Error at 25°C)	CO-448A ±50 ppm CO-448C ±25 ppm <small>*Stability via external capacitor: (&lt;60 MHz only; except 449E ±20 MHz)</small>																																			
Temperature Stability <small>Improved accuracy/stability available on some models. For example, for ±7 ppm over 0°C to +50°C and for ±10ppm over 0°C to +70°C. Improvement is also available over wider temperature ranges. Please contact factory.</small>	<table border="0"> <tr> <td><b>STANDARD:</b></td> <td>0°C</td> <td>to</td> <td>+70°C:</td> <td>±25 ppm</td> </tr> <tr> <td>Option 1:</td> <td>-55°C</td> <td>to</td> <td>+85°C:</td> <td>±50 ppm</td> </tr> <tr> <td>Option 2:</td> <td>-55°C</td> <td>to</td> <td>+125°C:</td> <td>±50 ppm</td> </tr> <tr> <td>Option 5:</td> <td>0°C</td> <td>to</td> <td>+50°C:</td> <td>±5 ppm</td> </tr> <tr> <td>Option 6:</td> <td>0°C</td> <td>to</td> <td>+50°C:</td> <td>±10 ppm</td> </tr> <tr> <td>Option 7:</td> <td>-55°C</td> <td>to</td> <td>+125°C:</td> <td>±100 ppm</td> </tr> <tr> <td>*Option 9:</td> <td>-55°C</td> <td>to</td> <td>+200°C:</td> <td>±300 ppm</td> </tr> </table> <p>(Option 9: N/A in CO-448 or above 20 MHz in CO-440 Series) *Specified stability includes initial accuracy; do not specify A,B,C,D or E accuracy.</p>	<b>STANDARD:</b>	0°C	to	+70°C:	±25 ppm	Option 1:	-55°C	to	+85°C:	±50 ppm	Option 2:	-55°C	to	+125°C:	±50 ppm	Option 5:	0°C	to	+50°C:	±5 ppm	Option 6:	0°C	to	+50°C:	±10 ppm	Option 7:	-55°C	to	+125°C:	±100 ppm	*Option 9:	-55°C	to	+200°C:	±300 ppm
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Aging Rate (typical after 30 days)	3 ppm first year 2 ppm/year thereafter																																			

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### How to Order Hybrid XO's - CO-400 Series

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



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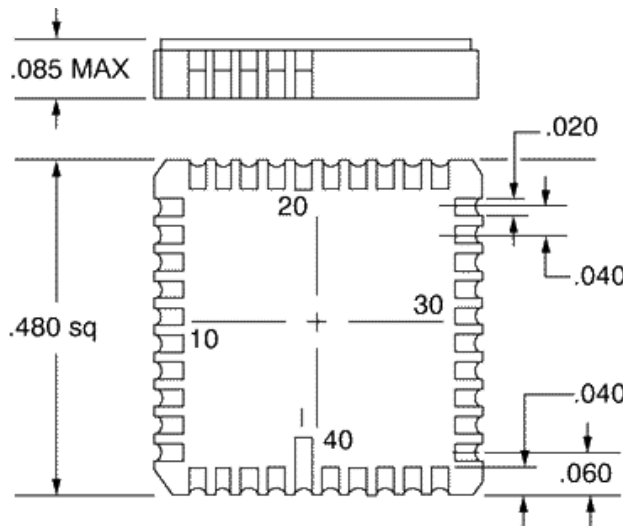
## SCREEN TESTING OF ABOVE MODELS

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SCREEN TEST	MIL-STD-883 METHOD	Standard		Options	
		CLASS X	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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**CO-448**



Dimension in inches

**Pinouts**

Pin	Function
4	+5Vdc
10	+5Vdc
31	Ground
37	Ground
39	Output
Other	N/C

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