

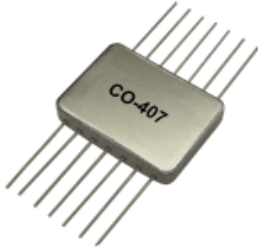


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## CO-407 Custom Hybrid TTL Clock Oscillators



### Features:

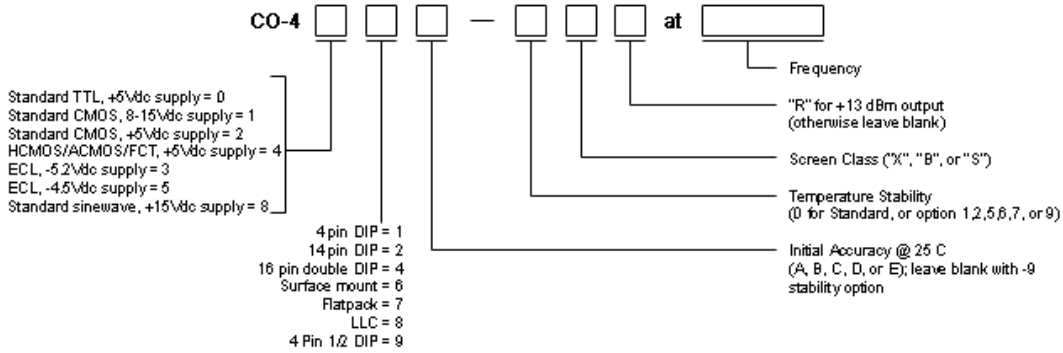
- Low Profile 14 Pin Flatpack
- Seam Welded Metal Can
- 3 Point Mount Crystal

SPECIFICATIONS																									
Series	CO-407: Flatpack																								
Frequency	16 kHz-100 MHz																								
Supply	5 Vdc ± 5%																								
Accuracy (at 25°C)	<b>CO-407A</b> ±50 ppm <b>CO-407C</b> ±25 ppm <b>CO-407D</b> ±15 ppm <b>CO-407B</b> ±10 ppm <b>CO-407E</b> ±1 ppm* <small>*Stability via external capacitor; 16 kHz-60 MHz only.</small>																								
<b>Temperature Stability</b>  <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>	<b>STANDARD:</b> 0°C    to    +70°C:    ±25 ppm <b>Option 1:</b> -55°C    to    +85°C:    ±50 ppm <b>Option 2:</b> -55°C    to    +125°C:    ±50 ppm <b>Option 5:</b> 0°C    to    +50°C:    ±5 ppm <b>Option 6:</b> 0°C    to    +50°C:    ±10 ppm <b>Option 7:</b> -55°C    to    +125°C:    ±100 ppm <b>*Option 9:</b> -55°C    to    +200°C:    ±300 ppm <small>(Option 9: Only for CO-401/2/6/7 series in 4-20 MHz range)                      *Specified stability includes initial accuracy;                      do not specify A,B,C,D or E accuracy.</small>																								
<b>Aging Rate (typical after 30 days)</b>	3 ppm first year 2 ppm/year thereafter																								
Case	seam welded metal case																								
Output	<table border="0"> <tr> <td>Output:</td> <td>&lt;4 MHz</td> <td>4-20 MHz</td> <td>&gt;20 MHz</td> </tr> <tr> <td>Drive:</td> <td>10 TTL</td> <td>10 TTL</td> <td>10 STTL</td> </tr> <tr> <td>"0" Level:</td> <td>&lt;0.4V</td> <td>&lt;0.4V</td> <td>&lt;0.4V</td> </tr> <tr> <td>"1" Level:</td> <td>&gt;2.4V</td> <td>&gt;2.4V</td> <td>&gt;2.4V</td> </tr> <tr> <td>Rise/Fall Time: (0.5-2.4V)</td> <td>&lt;15ns</td> <td>&lt;15ns</td> <td>2-5ns</td> </tr> <tr> <td>Symmetry: at 1.5V</td> <td>55/45</td> <td>60/40</td> <td>60/40</td> </tr> </table> If improved symmetry is required, please contact factory.	Output:	<4 MHz	4-20 MHz	>20 MHz	Drive:	10 TTL	10 TTL	10 STTL	"0" Level:	<0.4V	<0.4V	<0.4V	"1" Level:	>2.4V	>2.4V	>2.4V	Rise/Fall Time: (0.5-2.4V)	<15ns	<15ns	2-5ns	Symmetry: at 1.5V	55/45	60/40	60/40
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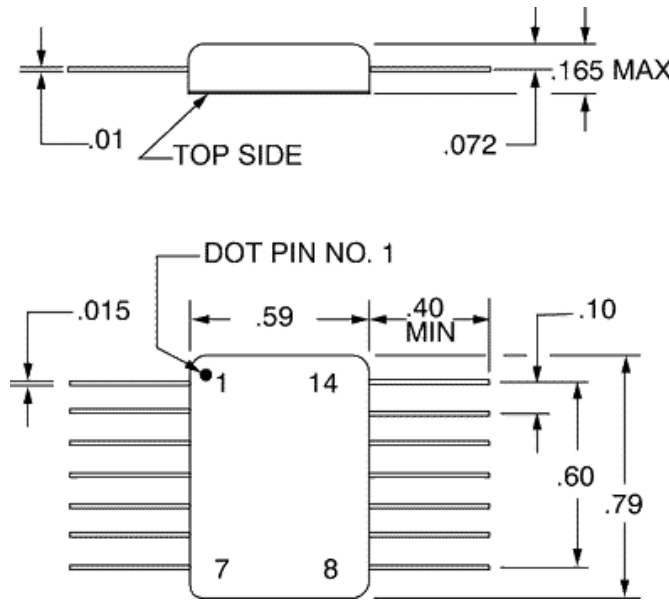
### How to Order Hybrid XO's - CO-400 Series

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



SCREEN TESTING OF ABOVE MODELS					
SCREEN TEST	MIL-STD-883 METHOD	Standard 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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Dimension in inches

**Pinouts**

Pin	Function
1	*N/C
7	OV, case, gnd
8	Output
14	+5V

Other N/C

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