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CO-402 Custom Hybrid TTL Clock Oscillators



Features:

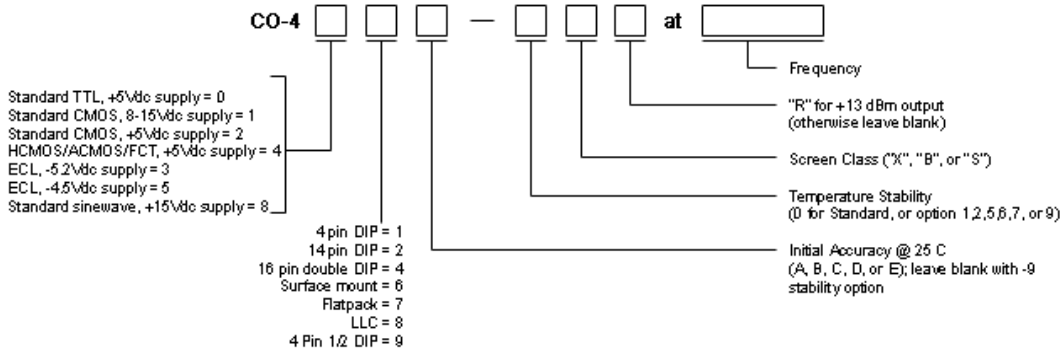
- Low Profile 14 Pin DIP
- Resistance Welded Metal Can
- 3 Point Mount Crystal
- 16 kHz to 100 MHz Frequency Range
- Available as QPL to Mil-0-55310/16 B&S

SPECIFICATIONS																									
Series	CO-402: 14 Pin DIP																								
Frequency	16 kHz-100 MHz																								
Supply	5 Vdc \pm 5%																								
Accuracy (at 25°C)	CO-402A \pm 50 ppm CO-402C \pm 25 ppm CO-402D \pm 15 ppm CO-402B \pm 10 ppm CO-402E \pm 1 ppm* <small>*Stability via external capacitor; 16 kHz-60 MHz only.</small>																								
Temperature Stability <small>Improved accuracy/stability available on some models. For example, for \pm7 ppm over 0°C to +50°C and for \pm10ppm over 0°C to +70°C. Improvement is also available over wider temperature ranges. Please contact factory.</small>	STANDARD: 0°C to +70°C: \pm 25 ppm Option 1: -55°C to +85°C: \pm 50 ppm Option 2: -55°C to +125°C: \pm 50 ppm Option 5: 0°C to +50°C: \pm 5 ppm Option 6: 0°C to +50°C: \pm 10 ppm Option 7: -55°C to +125°C: \pm 100 ppm *Option 9: -55°C to +200°C: \pm 300 ppm (Option 9: Only for CO-401/2/6/7 series in 4-20 MHz range) <small>*Specified stability includes initial accuracy; do not specify A,B,C,D or E accuracy.</small>																								
Aging Rate (typical after 30 days)	3 ppm first year 2 ppm/year thereafter																								
Case	Resistance welded metal case																								
Output	<table border="0"> <tr> <td>Output:</td> <td><4 MHz</td> <td>4-20 MHz</td> <td>>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><0.4V</td> <td><0.4V</td> <td><0.4V</td> </tr> <tr> <td>"1" Level:</td> <td>>2.4V</td> <td>>2.4V</td> <td>>2.4V</td> </tr> <tr> <td>Rise/Fall Time: (0.5-2.4V)</td> <td><15ns</td> <td><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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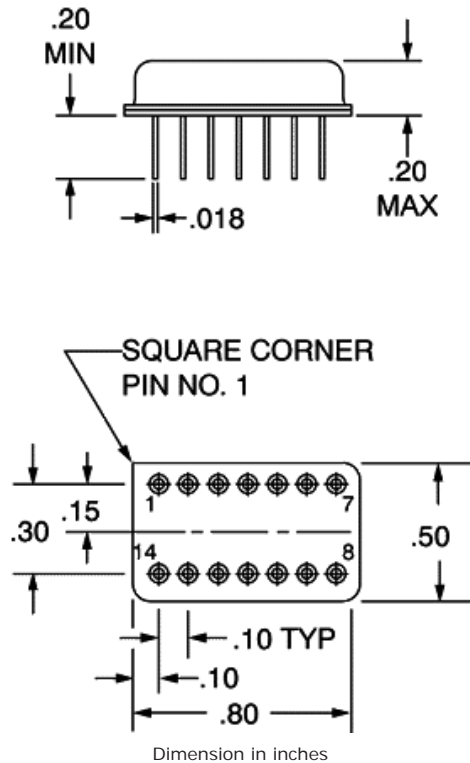
How to Order Hybrid XO's - CO-400 Series

(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 ₁ axis)	2001, Cond A			X	

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Pinouts

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

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