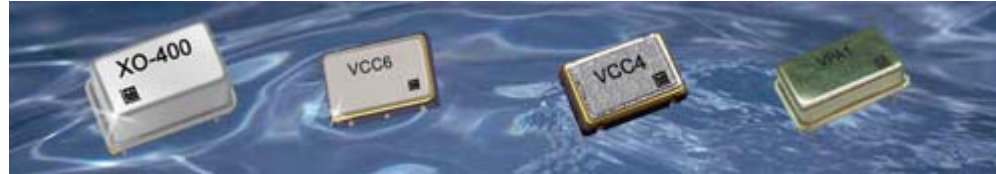


*Helping You Innovate, Improve
and Grow Your Business*



CO-402 Custom Hybrid TTL Clock Oscillators

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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

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*
*Settability via external capacitor; 16 kHz-60 MHz only.	

Temperature Stability

Improved accuracy/stability available on some models. For example, for ± 7 ppm over 0°C to $+50^{\circ}\text{C}$ and for ± 10 ppm over 0°C to $+70^{\circ}\text{C}$. Improvement is also available over wider temperature ranges. Please contact factory.

STANDARD: 0°C to $+70^{\circ}\text{C}$: ± 25 ppm
Option 1: -55°C to $+85^{\circ}\text{C}$: ± 50 ppm
Option 2: -55°C to $+125^{\circ}\text{C}$: ± 50 ppm
Option 5: 0°C to $+50^{\circ}\text{C}$: ± 5 ppm
Option 6: 0°C to $+50^{\circ}\text{C}$: ± 10 ppm
Option 7: -55°C to $+125^{\circ}\text{C}$: ± 100 ppm
***Option 9:** -55°C to $+200^{\circ}\text{C}$: ± 300 ppm

(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.

Aging Rate
 (typical after 30 days)

3 ppm first year
 2 ppm/year thereafter

Case

Resistance welded metal case

Output

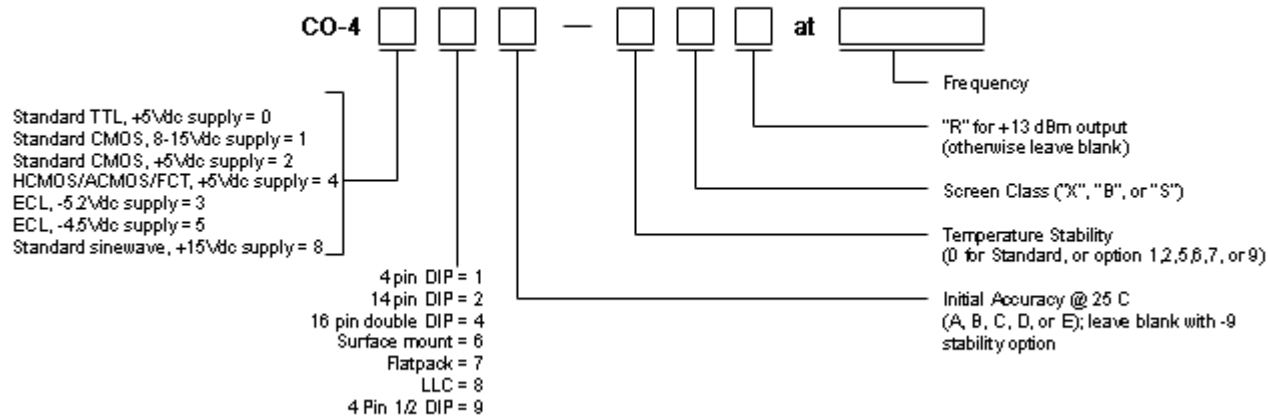
Output:	<4 MHz	4-20 MHz	>20 MHz
Drive:	10 TTL	10 TTL	10 STTL
"0" Level:	<0.4V	<0.4V	<0.4V
"1" Level:	>2.4V	>2.4V	>2.4V
Rise/Fall Time:	<15ns	<15ns	2-5ns
	(0.5-2.4V)		
Symmetry:	55/45	60/40	60/40
	at 1.5V		

If improved symmetry is required, please contact factory.

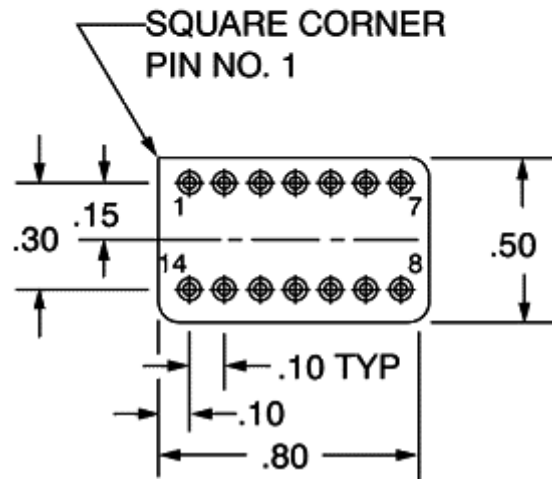
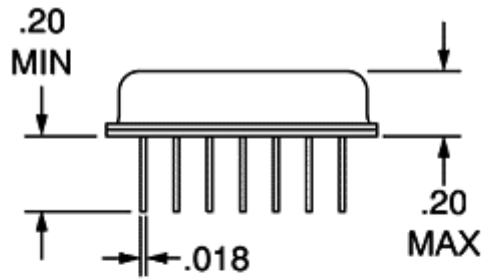
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How to Order Hybrid XO's - CO-400 Series

(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	



Dimension in inches

Pinouts

Pin Function

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

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