



**VECTRON**  
INTERNATIONAL

A **DOVER** TECHNOLOGIES COMPANY

## CO-770 Series 4 Pin DIP Oven Controlled Crystal Oscillator



### Features

- Extremely Small Dimensions
- Very Fast Warm-up
- Low Power Consumption
- Shock Resistance: 2000g/0.3 ms (1/2 sine)
- Vibration Resistance: 10g/10 to 2000 Hz
- Acceleration Sensitivity:  $3.5 \times 10^{-9}/G$
- Standard 10 MHz Version Available from Stock

### Applications

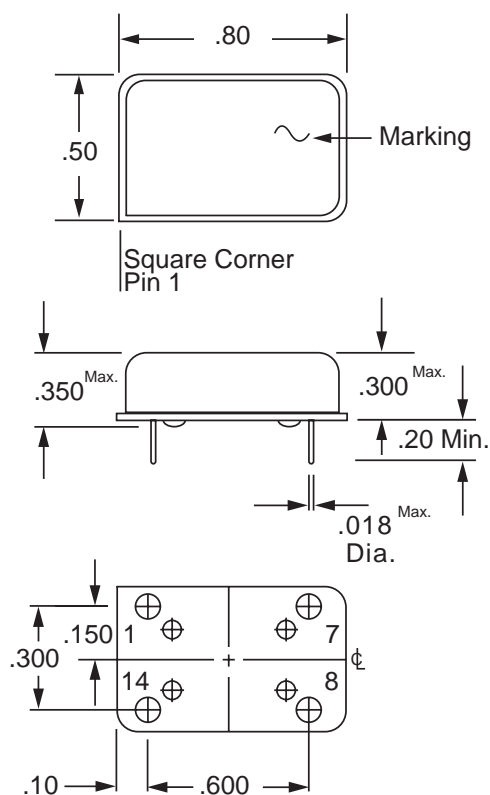
- Telecom Transmission and Switching Equipment
- Wireless Communication Equipment
- Networking Equipment

### Description

The model CO-770, low profile 4 Pin DIP Oven Controlled Crystal Oscillator (OCXO) is available in frequencies from 10 kHz to 24 MHz with higher frequencies available to 80 MHz on special order.

This unit provides exceptionally low aging rates and temperature stabilities in an extremely small package. It measures only 0.50" x 0.80" x 0.35" (12.7mm x 20.3mm x 8.9mm); provides aging rates of  $<3 \times 10^{-9}/\text{day}$  average,  $<7 \times 10^{-7}/\text{first year}$  and  $<4 \times 10^{-6}$  over 10 years with temperature stabilities from  $\pm 5 \times 10^{-8}$  over  $0^{\circ}\text{C}$  to  $50^{\circ}\text{C}$ . Wider temperature ranges are available to  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .

The CO-770 series offers a +5V or +12V supply and HCMOS or clipped sinewave output options.



Pin	Function
1	Frequency control
7	0V, Case
8	Output
14	Vcc

# CO-770 4 Pin DIP Oven Controlled Crystal Oscillator

## Performance Characteristics

Parameter	Characteristic		
Frequency	10 MHz Standard. Advertised specifications available from 10 kHz to 24 MHz. Available to 80 MHz on special order.		
Temperature Stability	0°C to +50°C: B58: ± 5 x 10 <sup>-8</sup> -20°C to +70°C: D17: ± 1 x 10 <sup>-7</sup> -40°C to +85°C: H27: ± 2 x 10 <sup>-7</sup>		
Aging	<3 x 10 <sup>-9</sup> /day average, <7 x 10 <sup>-7</sup> first year, <4 x 10 <sup>-6</sup> for 10 years		
Frequency vs. Supply (± 4%)	± 1 x 10 <sup>-7</sup>		
Short Term (Allan Variance)	<5 x 10 <sup>-10</sup> , 0.1 seconds to 10 seconds		
Supply/Output	Type	Supply Voltage	Output
	CO-770	+12 Vdc ± 0.5V	HCMOS*
	CO-771	+ 5 Vdc ± 0.2V	Clipped Sine (1-2VPK-PK into 1K W)
	CO-772	+ 5 Vdc ± 0.2V	HCMOS*
	CO-773	+12 Vdc ± 0.5V	Clipped Sine (1-2VPK-PK into 1K W)
*Symmetry (@50% Vdd)	60/40 to 40/60		
*Rise/Fall Time: (10-90%) (15pF load)	<7ns		
*Level 0 and 1	<0.4V, >4.5V		
Input Current	+12 Vdc	+5 Vdc	
	<25 mA @ +30°C	<60 mA @ +30°C	
	<40 mA @ -20°C	<80 mA @ -20°C	
Turn-on Current	+12 Vdc	+5 Vdc	
	<120 mA first 10 seconds	<200 mA first 10 seconds	
Warm-Up @ 25° C (24 hours off relative to the frequency 2 hours after turn-on)	<1 x 10 <sup>-6</sup>	15 seconds	
	<1 x 10 <sup>-7</sup>	60 seconds	
	<5 x 10 <sup>-8</sup>	10 minutes	
Phase Noise (Typical @ 10 MHz) Sine and HCMOS	+12 Vdc	+5 Vdc	
	Offset	Phase Noise	Phase Noise
	1 Hz	- 70 dBc/Hz	- 60 dBc/Hz
	10 Hz	-100 dBc/Hz	- 90 dBc/Hz
	100 Hz	-125 dBc/Hz	-120 dBc/Hz
	1 kHz	-135 dBc/Hz	-130 dBc/Hz
Acceleration Sensitivity: (Worst case axis)	3.5 x 10 <sup>-9</sup> /G		
Frequency Voltage Control	>± 4 ppm range with 0 to +5V input (external resistor adjustment available on special order)		
Size	0.50" x 0.80" x 0.35" (12.7 x 20.3 x 8.9 mm)		
Base	4 pin DIP package with standoffs		
How To Order	<div>CO-77<div>Supply/Output</div><div>Temperature Stability Option</div></div> at <div>Frequency</div>		
For Additional Information Please Contact:			

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