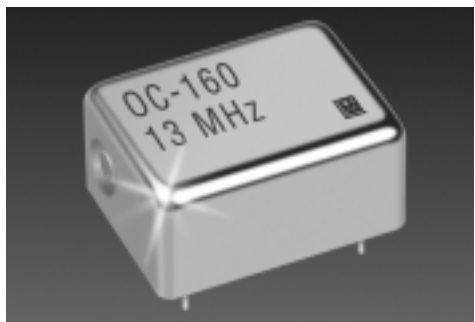


# Oven Controlled Crystal Oscillators (OCXO's)

## OC-160 Series (CO-730C)



### Description:

The OC-160 Series offers low aging and excellent stability options with quick warm-up performance with a standard European CO-08 footprint.

### Features:

- Frequencies: 5, 10, 12.8, 13, 16.384, 19.44, 20, 20.48 MHz
- European CO-08 Package
- Excellent Temperature Stability
- Superior Aging Characteristics
- Very Fast Warm-up

### Performance Characteristics

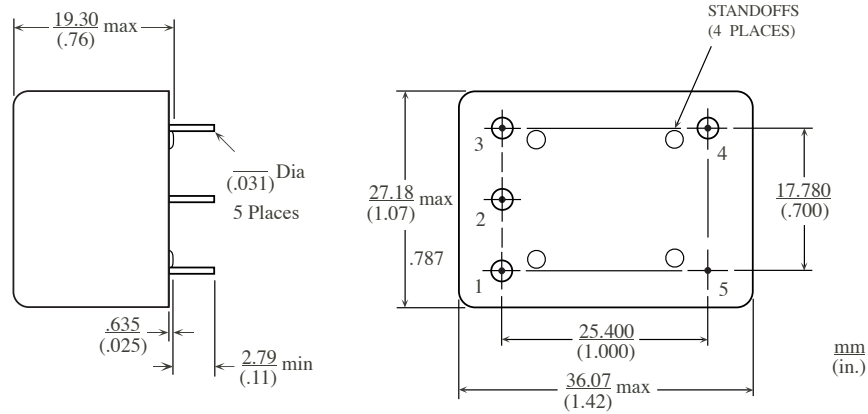
| Parameter  | Characteristics  |
|--|--|
| Standard Frequencies:  | 5, 10, 12.8, 13, 16.384, 19.44, 20, 20.48 MHz, Available 1 MHz to 80 MHz   |
| Package Size:  | 35.3 x 26.9 x 19.4 mm (1.4" x 1.06" x 0.76")   |
| Supply Voltage:  | <b>A:</b> 15 Vdc $\pm 5\%$ <b>B:</b> 12 Vdc $\pm 5\%$ <b>C:</b> 5 Vdc $\pm 5\%$  |
| Input Power:   | <6W turn-on (-20°C/70°C); <2.5W steady-state @ +25°C (-20°C/70°C)  |
| Output Type:   | <b>A:</b> HCMOS <b>K:</b> Sinewave (>+10 dBm into 50 ohm)<br><b>J:</b> Sinewave (>+7 dBm into 50 ohm) <b>L:</b> Sinewave (>+13 dBm into 50 ohm)  |
| Output Level (HCMOS):  | "0" <0.5V, "1" >4.5V (HCMOS)   |
| Rise/Fall Time $t_r/t_f$ (HCMOS):  | <10 ns (10% - 90%) (HCMOS)   |
| Symmetry (Duty/Cycle, HCMOS):  | 50/50 $\pm 10\%$ (@50% level) (HCMOS)  |
| Harmonics/subs:  | -20 dBc (reduced level sinewave, for optional output)  |
| Spurious:  | -70 dBc (for sinewave output)  |
| Temperature Stability:   | <b>B-308:</b> $\pm 3 \times 10^{-8}$ over 0/50°C<br><b>B-109:</b> $\pm 1 \times 10^{-9}$ over 0/50°C<br><b>D-508:</b> $\pm 5 \times 10^{-8}$ over -20/70°C<br><b>D-509:</b> $\pm 5 \times 10^{-9}$ over -20/70°C<br><b>F-107:</b> $\pm 1 \times 10^{-7}$ over -40/85°C<br><b>F-108:</b> $\pm 1 \times 10^{-8}$ over -40/85°C<br><i>Note: Tighter stability options are available, contact factory.</i> |
| Aging:   | <b>A:</b> $1 \times 10^{-8}$ /day, $2 \times 10^{-6}$ /year<br><b>B:</b> $3 \times 10^{-9}$ /day, $1 \times 10^{-6}$ /year<br><b>C:</b> $1 \times 10^{-9}$ /day, $3 \times 10^{-7}$ /year<br><b>D:</b> $5 \times 10^{-10}$ /day, $1 \times 10^{-7}$ /year  |
| Short Term Stability (Allan Deviation):  | $5 \times 10^{-11}$ /second (with aging <b>A</b> or <b>B</b> ); $5 \times 10^{-12}$ /second (with aging <b>C</b> or <b>D</b> )   |
| Phase Noise (Typical @ 10 MHz):  | With Aging: <b>A or B</b> <b>Aging: C or D</b><br>10 Hz      -100 dBc/Hz      -120 dBc/Hz<br>100 Hz      -135 dBc/Hz      -140 dBc/Hz<br>1 kHz      -145 dBc/Hz      -145 dBc/Hz<br>10 kHz      -150 dBc/Hz      -150 dBc/Hz<br>50 kHz      -150 dBc/Hz      -150 dBc/Hz   |
| Frequency vs. Supply:  | $2 \times 10^{-9}$ per % change in supply (with Aging <b>A</b> or <b>B</b> )<br>$5 \times 10^{-10}$ per % change in supply (with Aging <b>C</b> or <b>D</b> )  |
| Warm-up (Restabilization):<br>(Frequency relative to two hours after turn-on following 24 hours off time at +25°C with a maximum ambient of <70°C) | With Aging: <b>A or B</b> <b>Aging: C or D</b><br>$1 \times 10^{-6}$ : 6 minutes $1 \times 10^{-6}$ : 2 minutes<br>$1 \times 10^{-7}$ : 8 minutes $1 \times 10^{-7}$ : 2.5 minutes<br>$3 \times 10^{-8}$ : 10 minutes $3 \times 10^{-8}$ : 3 minutes<br>$3 \times 10^{-8}$ : 30 minutes $1 \times 10^{-8}$ : 4 minutes   |
| Electrical Frequency Adjust:   | $10 \times 10^{-6}$ typical range (with Aging <b>A</b> or <b>B</b> )<br>$2 \times 10^{-6}$ typical range (with Aging <b>C</b> or <b>D</b> )  |
| Mechanical Configuration:  | Pins for PCB mounting  |

# Oven Controlled Crystal Oscillators (OCXO's)

## OC-160 Series (CO-734C/738CS)

### Outline Drawing

PIN NUMBERS ARE FOR REFERENCE ONLY. THEY DO NOT APPEAR ON THE UNIT.



OCXO

### Pin Out Information

| Pin | Function                        |
|-----|---------------------------------|
| 1   | Electrical Frequency Adjustment |
| 2   | N/C or Reference Voltage Output |
| 3   | Supply (+)                      |
| 4   | Output                          |
| 5   | GND                             |

Note: Pin numbers are for reference only, and may not appear on unit.

### Ordering Information

