

CMS 970-2178-46

1 OCXO Specification for Commercial Range

1.1 Electrical Specifications

Center Frequency:	10.000000 MHz
Supply Voltage:	+5 Vdc $\pm 5\%$
Load:	50 Ω
Reference Voltage (Vref):	4.0 \pm 0.2 Vdc at 1 ma. Maximum
RF Output:	Sinewave, +7 dBm \pm 1 dB into 50 ohms.
The output must maintain this level over both the extended operating temperature range and a $\pm 3\%$ voltage change ref to +5.0 volts.	
Supply Power:	
Warm-up	< 5 watts
Steady state	< 2 watts at +25°C

1.1.1 Stability

Start Up: 10 MHz output within 0.5 Seconds (Not required to meet all specifications in this time Except RF Output Level)

(All Temperature Ranges)

Temperature:	$\leq \pm 5$ ppb (Normal Operating Range) $\leq \pm 20$ ppb (Extended Operating Range)
Power Supply:	≤ 1 ppb for a 1% change
Aging:	$\leq \pm 1.0$ ppb/ day $\leq \pm 300$ ppb/ year (All OCXO's shall be pre-aged)
Short Term Stability: (Allan Variance)	$\leq 1 \times 10^{-10}$ for 0.1 sec to 1 sec (Normal Operating Range) TBD for 0.1 sec to 1 sec (Extended Operating Range)

1.1.2 Signal Quality

Harmonics / Subharmonics:	< -30 dBc
Spurious:	< -80 dBc

Phase Noise

Integrated: 0.001* Integrated from 10Hz to 625 kHz

SPOT PHASE NOISE

Offset	Level (dBc/Hz)
10 Hz	-120
100 Hz	-130
1 kHz	-140
10 kHz	-145
100 kHz	-145

Warm-up: (Ref to 30 minutes on time)	Within ± 1 ppm in 2 minutes Within ± 0.1 ppm in 2.5 minutes Within ± 30 ppb in 5 minutes Within ± 10 ppb in 15 minutes
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1.1.3 Electronic Frequency Adjustment

Control Voltage:	0 to 4V
Slope:	Positive
Sensitivity:	Minimum: 3.5Hz/V Nominal: 4.5 Hz/V Maximum: 5.5Hz/V
Input Impedance:	10 K ohms - 100K ohms

1.2 Environmental:

G- sensitivity:	Office Vibration while meeting all requirements
Operating Temperature Range:	
Normal Operating Range	-5°C to +50°C
Extended Operating Range	-30°C to +70°C
Storage Temperature Range:	-55°C to +85°C
Shock:	5 G's 1 ms, Half sine, 3 shocks per direction,
Sinusoidal Vibration:	0.06" D.A. or 10G's Peak, 10 to 500 Hz, Per MIL-STD-202F, Method 204D, Test Condition A
Random Vibration:	5.35 G's rms. 20 TO 2000 HZ, Per MIL-STD-202F Method 214 Test Condition 1A, 15 minutes each axis
Moisture:	10 cycles, 95% RH, per MIL-STD-202F, Method 106F
Seal:	Condition D Bath @ 90°C \pm 5°C MIL-STD-202F, Method 112

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1.3 Mechanical:

See Figure 1

Marking Permanency: Per MIL-STD-202F, Method 215J

PACKAGE PIN OUT		
Pin #	Symbol	Functional Description
1	VC	Control Voltage
2	Vref	Reference Voltage
3	VDD	Supply Voltage
4	Output	RF Output
5	GND	Circuit and Case Ground

