



9633

Military OCXO

STANDARD FEATURES

- 10MHz Output
- < 3E-10 Per Day Aging
- < 2E-11 G Sensitivity
- Low Phase Noise

As the military moves toward implementing more advanced communications, navigation and targeting systems, precision oscillators that can withstand a wide range of operating environments is(are) becoming more critical.

The Symmetricom 9633 is a military OCXO designed for ground tactical and airborne applications where superior frequency stability and phase noise are required. The 9633 is well suited for these applications as it provides superior dynamic phase noise, frequency accuracy and stability, which are all critical parameters for radar, secure communication and navigation applications. Both electronic and mechanical compensation

techniques are utilized to provide up to 40dB of compensation when operating under vibration. Total gamma acceleration sensitivity of < 2E-11 per g can be achieved.

The 9633 is based around an ovenized 10 MHz 3rd over-tone SC cut crystal resonator enclosed in a hermetically sealed 1.60" x 3.00" x 1.67" H package.



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9633 Specifications

ELECTRICAL SPECIFICATIONS

- Frequency
 - Standard output
 - Frequency: 10MHz
 - Format: Sinewave
 - Amplitude: $7.0 \pm 2\text{dBm}$
 - Harmonic: $< -35\text{dBc}$
 - Non harmonic: $< -80\text{dBc}$
 - Load impedance: 50Ω

PERFORMANCE PARAMETERS

- Stability

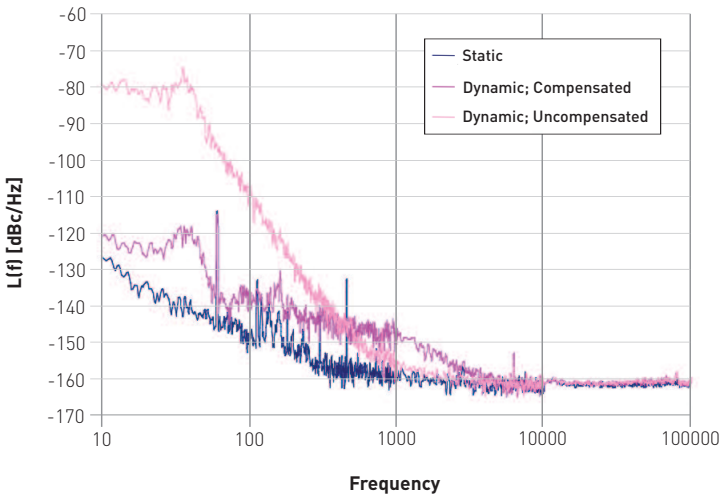
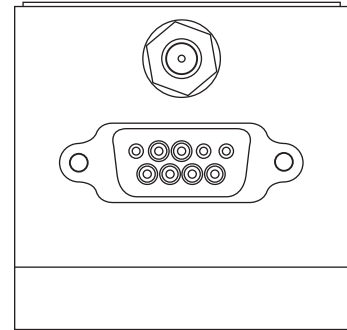
AvgTime (s)	10MHz
1	$< 5.0\text{E}-12$
10	$< 5.0\text{E}-12$
- Aging
 - Per day: $< 3.0\text{E}-10$
 - Per year: $< 4.0\text{E}-8$
 - 10 years: $< 1.0\text{E}-6$
- Retrace: $\pm 1\text{E}-8$
- Acceleration sensitivity
 - Per g, total gamma: $\leq 2.0\text{E}-11$
- SSB Phase noise (static)

Offset (Hz)	10MHz
10	-120dBc
100	-140dBc
1,000	-150dBc
10,000	-155dBc
100k	-155dBc
- Temp vs Freq
 - -40°C to $+55^\circ\text{C}$: $< \pm 1\text{E}-8$
- Tuning range: $\pm 5\text{E}-7$, Analog or I²C

ENVIRONMENTAL & PHYSICAL SPECIFICATIONS

- General environment
 - Operating
 - Temperature: -40°C to 70°C
 - Storage temperature: -55°C to 85°C
 - Humidity: 95% RH up to 65°C
 - Altitude (operating): -1000 to 65,000 feet
- Random vibration
 - Operating (endurance): 30 grms
- DC Power requirements:
 - 15Vdc
 - $< 3\text{W}$ operating power at 15Vdc
 - 4 to 12W warm-up power at 15Vdc
- Dimensions: 1.60 x 3.00 x 1.67 H
- Weight: ≤ 0.35 lbs

PIN	FUNCTION
J1-1	10 MHz Out
J2-1	CHASSIS GND
J2-2	SCL I ² C - CLOCK
J2-3	SDA I ² C - DATA
J2-4	CHASSIS GND
J2-5	CHASSIS GND
J2-6	PWR RETURN
J2-7	PWR RETURN
J2-8	PWR
J2-9	PWR



Dynamic Phase Noise (typical performance)



SYMMETRICOM, INC.
 2300 Orchard Parkway
 San Jose, California
 95131-1017
 tel: 408.433.0910
 fax: 408.428.7896
 info@symmetricom.com
 www.symmetricom.com