

DESCRIPTION

The LXOM oscillator has the highest accuracy, stability and lowest current of all STATEK oscillators. The design consists of a CMOS-compatible hybrid circuit, packaged in a hermetically-sealed, half-size metal DIP. Permanent, precision tuning of the oscillator is accomplished by laser trimming the crystal after it has been hermetically sealed in a ceramic package and connected to the oscillator circuit. This method of fine tuning allows for very tight calibration tolerance and eliminates the need for a trimming capacitor, a major source of long-term frequency drift. The specifications and characteristics of the LXOM vary with frequency. The characteristics of the 32.768 kHz model are presented in this data sheet.



*Consult factory for other frequencies.

FEATURES

- Low power consumption
- Low aging
- CMOS compatible
- Double hermetically sealed package
- Full military testing available
- 3 Volt operation available

APPLICATIONS

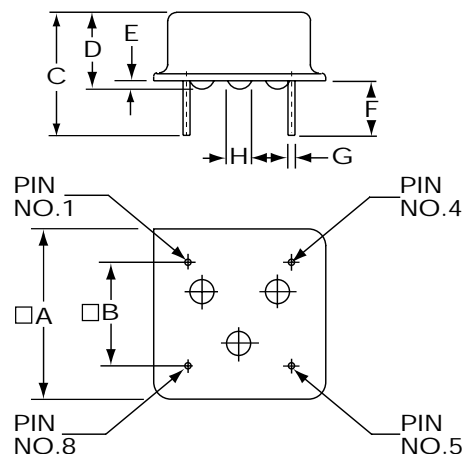
Industrial, Computer & Communications

- General purpose clock oscillator
- Data Logger
- Remote sensor
- Liquid level sensing
- Medical test and diagnostics

Military

- Portable field communication
- Military high speed modem
- Flight recorder

PACKAGE DIMENSIONS



DIM	INCHES	mm
A	□0.505 MAX.	12.83 MAX.
B	□0.300 ±0.005	7.62 ±0.13
C	0.430 TYP.	10.92 TYP.
D	0.225 MAX.	5.72 MAX.
E	0.025 MAX.	0.64 TYP.
F	0.150 MIN.	3.81 MIN.
G	0.018 ±0.002	0.46 ±0.05
H	0.063 TYP.	1.60 TYP.

* Position of bumps for reference only

SPECIFICATIONS: LXOM 32.768 kHz

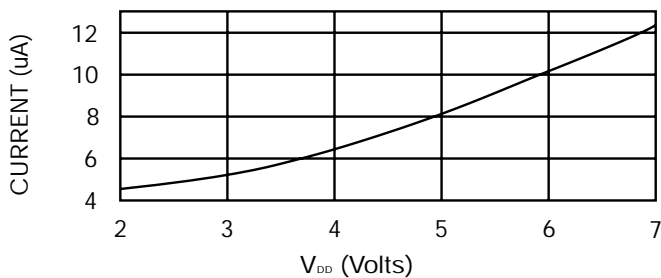
Specifications are typical at 25°C unless otherwise noted.
Specifications are subject to change without notice.

Supply Voltage (V _{DD})	5V ± 10% (3.3V available)
Calibration Tolerance*	A: ± .001% (10ppm) B: ± .0025% C: ± .01%
Frequency Stability**	
0°C to +50°C	-0.0025% Typ. ± 25ppm -0.004% MAX. ± 40ppm
-20°C to +70°C	-0.007% Typ. ± 70ppm -0.01% MAX. ± 100ppm
Voltage Coefficient	1 ppm/V Typ. 3 ppm/V MAX.
Aging	1 ppm/year Typ. 3 ppm/year MAX.
Shock	1000g, 1msec., 1/2 sine 3 ppm MAX.
Vibration	10g rms, 10-2000 Hz 3 ppm MAX.
Frequency Change vs 10% Output Load Change	1 ppm MAX.
Operating Temperature	-10°C to +70°C Commercial -40°C to +85°C Industrial -55°C to +125°C Military

* Tighter tolerances available

** Does not include calibration tolerance. Positive variations small compared to negative variations.

TYPICAL CURRENT CONSUMPTION, LXOM-32.768 kHz



ABSOLUTE MAXIMUM RATINGS

Supply Voltage V _{DD}	-0.3V to 7V
Storage Temperature	-55°C to +125°C

ELECTRICAL CHARACTERISTICS

LXO-M-32.768 kHz

All parameters are measured at ambient temperature with a 10MΩ and 10pF load at 5V.

SYMBOL	PARAMETER	MIN.	TYP.	MAX.	UNIT
V _{OH}	Output Voltage Hi	4.8	4.95		V
V _{OL}	Output Voltage Lo		0.05	0.2	V
t _r	Rise Time (10%-90%)		12	25	nsec.
t _f	Fall Time (10%-90%)		12	25	nsec.
SYM	Duty Cycle	40	50	60	%
Supply Current					
I _{DD}	V _{DD} = 5V		7	15	µA
	V _{DD} = 3V		5	10	µA

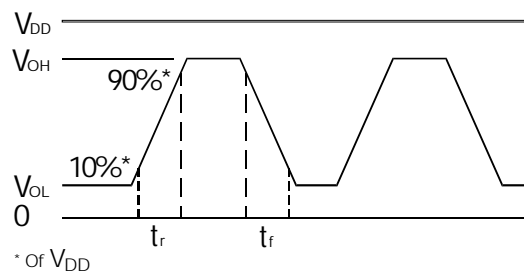
PIN CONNECTIONS

Pin	Connection
1	INH (Tri-State) or NC
4	Ground
5	Output
8	V _{DD}

PACKAGING

LXOM -Tube Pack (Standard)

OUTPUT WAVE FORM



HOW TO ORDER LXOM CRYSTAL OSCILLATORS

LXOM	S		32.768 kHz	(A	/	I)
	"S" if special or custom design. Blank if Std.	T = Tri-State Blank = Pin1 no connection	Frequency		*Calibration Tolerance @25°C (A) (B) (C)		Temp. Range: C = Commercial I = Industrial M = Military S = Specify	

*Other calibration fill in ppm

Frequencies other than 32.768 kHz

A: ± 0.01%

B: ± 0.03%

C: ± 0.1%

10145 - Rev D