



LXOM OSCILLATOR

10 kHz to 2.1 MHz*

Low Power Crystal Oscillator

DESCRIPTION

Statek's LXOM oscillator 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

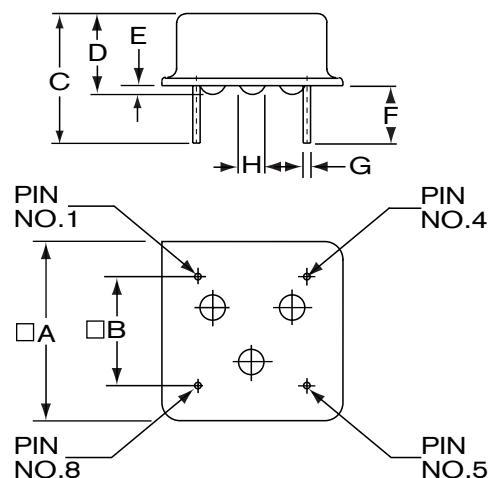
Industrial, Computer & Communications

- 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 TYP.	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

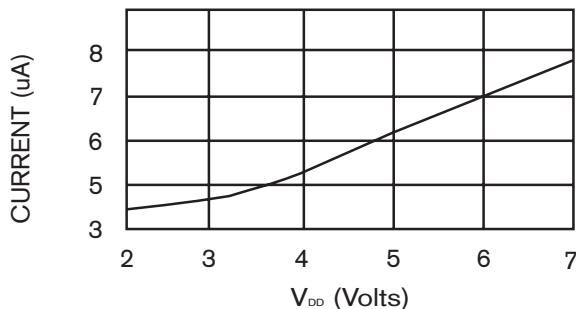
Specifications are typical at 25°C unless otherwise noted.
Specifications are subject to change without notice.

Supply Voltage (V_{DD})	5V $\pm$ 10% (3.3V available)		
Calibration Tolerance ¹	$\pm$ 10 ppm (0.001%)		
	$\pm$ 25 ppm (0.0025%)		
	$\pm$ 100 ppm (0.01%)		
Frequency Stability ²			
	0°C to +50°C	$\pm$ 25 ppm	Typ. (0.0025%)
		$\pm$ 40 ppm	MAX. (0.004%)
	-10°C to +70°C	$\pm$ 70 ppm	Typ. (0.007%)
		$\pm$ 100 ppm	MAX. (0.01%)
Voltage Coefficient	$\pm$ 1 ppm/V Typ.		
	$\pm$ 3 ppm/V MAX.		
Aging	$\pm$ 1 ppm/year Typ.		
	$\pm$ 3 ppm/year MAX.		
Shock	1000 g, 1 ms, 1/2 sine		
	$\pm$ 3 ppm MAX.		
Vibration	10 g RMS, 10-2000 Hz		
	$\pm$ 3 ppm MAX.		
Frequency Change vs 10% Output Load Change	$\pm$ 1 ppm MAX.		
Operating Temp. Range	-10°C to +70°C (Commercial)		
	-40°C to +85°C (Industrial)		
	-55°C to +125°C (Military)		

1. Tighter tolerances available

2. 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

LXOM-32.768 kHz

All parameters are measured at ambient temperature with a 10M Ω 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%)		27	50	ns
t_f	Fall Time (10%-90%)		29	50	ns
SYM	Duty Cycle	40	50	60	%
Supply Current					
I_{DD}	$V_{DD}=5V$		6.5	12	μA
	$V_{DD}=3V$		5	10	μA

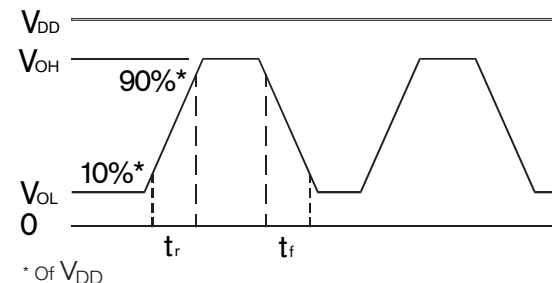
PIN CONNECTIONS

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

PACKAGING

LXOM -Tube Pack

OUTPUT WAVE FORM



HOW TO ORDER LXOM CRYSTAL OSCILLATORS

LXOM	S	T	-	32.768K	,	10	/	I
	"S" if special or custom design. Blank if Std.	T = Tri-State Blank = Pin1 no connection		Frequency K = kHz M = MHz		*Calibration Tolerance @ 25°C (in ppm)		Temp. Range: C = -10°C to +70°C I = -40°C to +85°C M = -55°C to +125°C S = Customer Specified

*Other calibration fill in ppm.
Standard Calibration Tolerances for frequencies other than 32.768 kHz:
1) 100 ppm (0.01%)
2) 300 ppm (0.03%)
3) 1000 ppm (0.1%)