

LXOM-AT OSCILLATOR

500 kHz to 120 MHz
Low Power Crystal Oscillator

DESCRIPTION

The LXOM-AT consists of a TTL and CMOS-compatible hybrid circuit and a miniature quartz crystal packaged in a hermetically-sealed metal DIP. Permanent, precision tuning and a hermetically sealed AT quartz crystal allows for very tight calibration tolerance and eliminates the need for a tuning capacitor, a major source of long-term frequency drift.

FEATURES

- Low aging
- CMOS and TTL compatible
- Double hermetically sealed package
- Full military testing available
- 3 Volt operation also available
- Optional Tri-State or Output Enable

APPLICATIONS

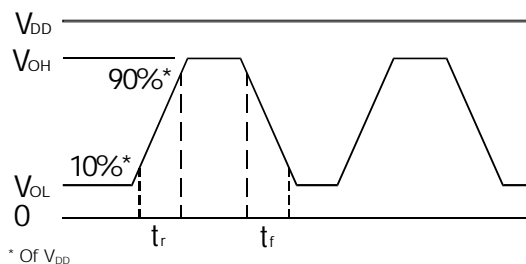
Industrial, Computer & Communications

- General purpose clock oscillator

Military

- Flight recorder

OUTPUT WAVE FORM



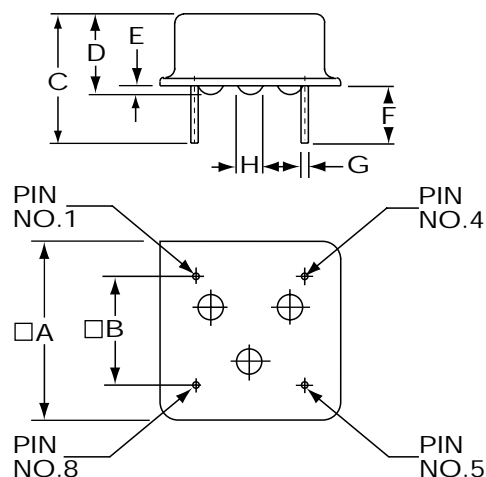
* Of V_{DD}

PACKAGING

LXOM-AT - Tube Pack (Standard)



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

10118 - Rev D

SPECIFICATIONS

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

Supply Voltage (V_{DD})	5V \pm 5% (3.3V available)	
Calibration	A:	\pm 0.01% (100ppm)
Tolerance (@ 5V)*	B:	\pm 0.03%
	C :	\pm 0.10%
Frequency -Temperature	0°C to +50°C from \pm 5 to \pm 30ppm	
Stability*/**	-10°C to +70°C from \pm 10 to \pm 50ppm	
	-40°C to +85°C from \pm 20 to \pm 100ppm	
	-55°C to +125°C from \pm 30 to \pm 100ppm	
Supply Current	4 mA to 60 mA (Depending on freq.)	
Output Levels	V_{OL}	V_{OH}
	TTL	0.4V MAX. 2.4V MIN.
	CMOS	0.5V MAX. 4.5V MIN.
Start-up Time	5 msec. MAX.	
Rise/Fall Time	6 nsec. Typ., 10 nsec. MAX.	
Duty Cycle*	40% Min., 60% MAX.	
Aging, first year	5 ppm MAX.	
Shock, survival	1,000g peak 1 msec., 1/2 sine	
Vibration survival	10g rms 10-2000 Hz random	
Operating Temperature	-10°C to +70°C Commercial	
	-40°C to +85°C Industrial	
	-55°C to +125°C Military	
Storage Temperature	-55°C to +125°C	

* Tighter tolerances available for calibration, stability and duty cycle.

** Does not include calibration tolerance.

Note: All parameters are measured at ambient temperature
with a 10M Ω and 10pF load at 5V

ABSOLUTE MAXIMUM RATINGS

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

TRUTH TABLE

	PIN 1*	PIN 5
LXOM-AT-8E	Low (0)	High (1)
	High (1)	Freq. Output
LXOM-AT-2E	Low (0)	Low (0)
	High (1)	Freq. Output
LXOM-AT-10T	Low (0)	High (Z)
	High (1)	Freq. Output

* Normally high (internal pull-up resistor)

ENABLE VS. TRI-STATE

Enable: When pin 1 is low (0), the oscillator stops oscillation.

Tri-state: When pin 1 is low, the oscillator is running.
However, the output buffer amplifier stops functioning and output is in high impedance (Z) state.

	Enable	Tri-state
Current consumption when pin 1 is low	Low	High
Output recovery delay when pin 1 changes from low (0) to high (1)	Delayed	Immediate

PIN CONNECTIONS

Pin Connection

- Output Enable, \overline{INH} (Tri-State) or NC
- Ground
- Output
- V_{DD}

HOW TO ORDER LXOM-AT CRYSTAL OSCILLATORS

LXOM-AT	S	10	T	32 MHz	(100ppm	/	100ppm	/	200ppm	/	I)
"S" if special or custom design. Blank if Std.	2 = 2 LS TTL Load 8 = 8 TTL Load 10 = 10 TTL Load	E = Enable T = Tri-State N = Neither	Calibration Tolerance* @ 25°C (A) (B) (C)	Frequency		Frequency Stability over Temp. Range		Total Frequency Tolerance		Temp. Range: C = Commercial I = Industrial M = Military S = Specify			

* Other calibration fill in ppm