

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

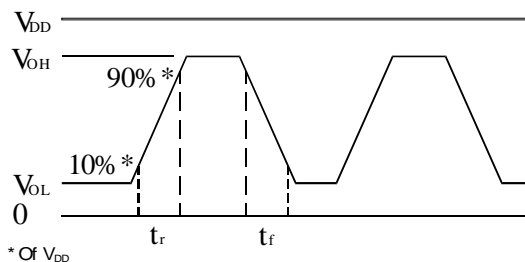
Industrial, Computer & Communications

- General purpose clock oscillator

Military

- Flight recorder

OUTPUT WAVE FORM

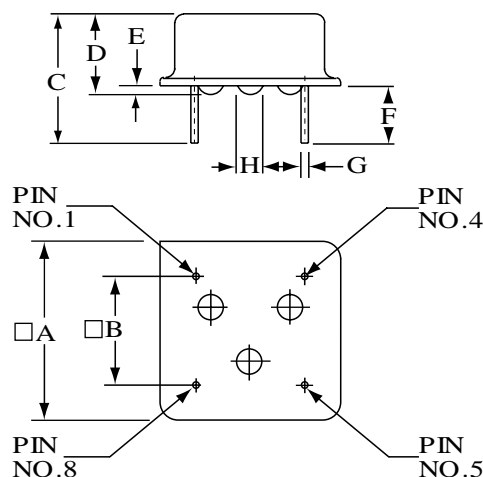


PACKAGING

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

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

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

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}