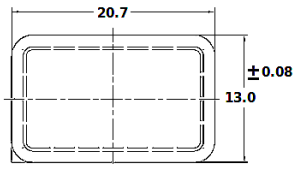
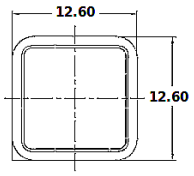
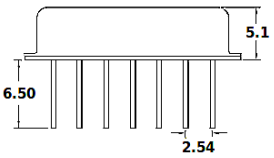
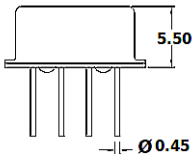
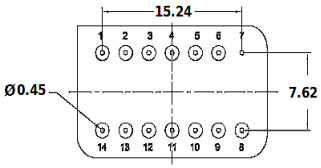
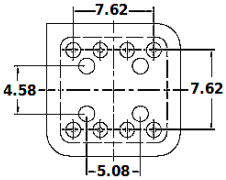
# CXO-300, 400, 425, 1300, 1400 & 1425

**Features**

- All metal welded package
- Wide frequency range from 1 MHz ~ 70 MHz
- HCMOS/ TTL compatible in general application
- Sinusoidal Vibration, Non operating

## Mechanical Specifications

| | Full Size | Half Size |
|---|---|---|
| Top View |   |   |
| Front View |   |   |
| Bottom View |   |   |

▲ All dimensions are in mm. Tolerance is ± 0.1 mm, unless otherwise specified. Sharp edges indicates Pin 1.

| Pin Configuration for Full Size-DIL 14 | | Pin Configuration for Half Size-DIL 8 | |
|---|---|---|---|
| 1 | No Connection (or) E/ D Control (Optional) | 1 | No Connection (or) E/ D Control (Optional) |
| 7 | Ground | 4 | Ground |
| 8 | Output | 5 | Output |
| 14 | DC Input | 8 | DC Input |

**Marking Details:**

Example 1: CXO300LMN001M000000
AE CXO 300 LM
1.000 MHz
YEAR WEEK S.No.
Example 2: CXO1400LMN001M000000
AE S.No.
CXO 1400
1.000 MHz
LM YEAR WEEK

## Table 1: Electrical Specifications

| Parameters | Variant HCMOS | Variant TTL |
|---|---|---|
| **Series:** | | |
| CXO-300 (Full Size, All 14 pins) | | ■ |
| CXO-400, CXO-425 (Full Size, All 14 pins) | ■ | |
| CXO-1300 (Half Size, All 8 pins) | | ■ |
| CXO-1400, CXO-1425 (Half Size, All 8 Pins) | ■ | |
| **Frequency Range:** | | |
| 1 MHz ~ 70 MHz | ■ | ■ |
| **Output Drive:** | | |
| 50 pF (max.) | ■ | |
| 10 TTL gates for ≤ 20 MHz | | ■ |
| 6 TTL gates > 20 MHz | | ■ |
| **Logic Levels:** | | |
| '0' = 0.4 V (max.) '1' = 2.4 V (min.) | | ■ |
| '0' = 0.1 Vcc (max.) '1' = 0.9 Vcc (min.) | ■ | |
| **Rise/ Fall Time:** | | |
| 10 ns (max.) (Between Logic '0' & Logic '1' Level) | ■ | ■ |
| **Start up Time:** | | |
| 10 ms (max.) | ■ | ■ |
| **Duty Cycle:** | | |
| 40% to 60% @ 1.4 V dc | | ■ |
| 40% to 60% @ ½ Vcc | ■ | |
| **Output Waveform:** | | |
| Square Wave | ■ | ■ |
| **Frequency Stability: with respect to (25 ± 2°C)** | | |
| Select from Table 2 | ☐ | ☐ |
| **Operating Temperature Range (OTR):** | | |
| Select from Table 2 | ☐ | ☐ |
| **Supply Voltage, Vcc:** | | |
| Select from Table 3 | | |
| +5.0 V dc (± 10%) | ■ | ■ |
| +3.3 V dc (± 10%) | ■ | |
| **Supply Current: For 5 Volts,** | | |
| 30 mA (max.) (250 KHz ~ 24 MHz) | ■ | ■ |
| 40 mA (max.) (24 MHz ~ 50 MHz) | ■ | ■ |
| 50 mA (max.) (50 MHz ~ 70 MHz) | ■ | ■ |
| **Supply Current: For 3.3 Volts,** | | |
| 15 mA (max.) (250 KHz ~ 24 MHz) | ■ | |
| 20 mA (max.) (24 MHz ~ 50 MHz) | ■ | |
| 25 mA (max.) (50 MHz ~ 70 MHz) | ■ | |
| **Tristate Function:** | | |
| Output is Enabled when Pin 1 is 2 V dc (min.). or 'Open' | ■ | |
| Output is Disabled when Pin 1 is 0.8 V dc (max.) or Ground | | ■ |
| **Aging @ 25°C:** | | |
| ± 5 ppm (max.) for First Year | ■ | ■ |
| **Storage Temperature Range:** | | |
| -55°C to +125°C | ■ | ■ |

■ Standard, ☐ Optional – please specify required code(s) when ordering.



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## Table 2: Frequency Stability/ OTR Code

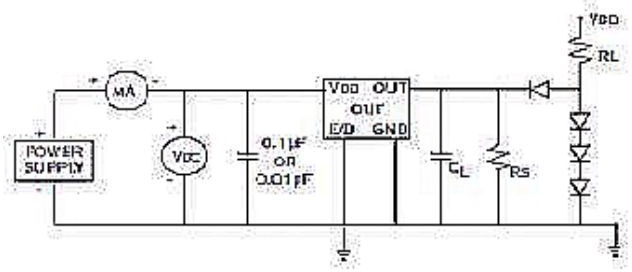
| OTR Code | Stability Codes / Frequency Stability | | D ± 10 ppm | E ± 15 ppm | F ± 20 ppm | G ± 25 ppm | M ± 50 ppm | K ± 100 ppm |
|---|---|---|---|---|---|---|---|---|
| A | Operating Temperature Range | 0°C to +50°C | ■ | ■ | ■ | ■ | ■ | ■ |
| B | | 0°C to +60°C | ■ | ■ | ■ | ■ | ■ | ■ |
| F | | 0°C to +70°C | ■ | ■ | ■ | ■ | ■ | ■ |
| D | | -10°C to +60°C | ■ | ■ | ■ | ■ | ■ | ■ |
| E | | -10°C to +70°C | ■ | ■ | ■ | ■ | ■ | ■ |
| C | | -20°C to +70°C | ■ | ■ | ■ | ■ | ■ | ■ |
| G | | -30°C to +80°C | | | ■ | ■ | ■ | ■ |
| H | | -30°C to +85°C | | | ■ | ■ | ■ | ■ |
| I | | -40°C to +85°C | | | ■ | ■ | ■ | ■ |
| J | | -40°C to +90°C | | | | ■ | ■ | ■ |
| K | | -55°C to +105°C | | | | | ■ | ■ |
| L | | -55°C to +125°C | | | | | ■ | ■ |

■ Denotes Available  □ Denotes not Available

## Table 3

| Supply Voltage | 5 V | | 3.3 V |
|---|---|---|---|
| Series | CXO-300 | CXO-400 | CXO-425 |
| | CXO-1300 | CXO-1400 | CXO-1425 |

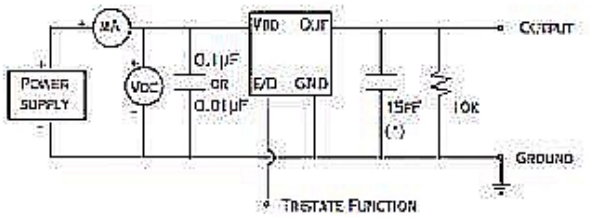
### Typical Test Circuit For TTL Logic




| LOAD | CL(*) | RL | RS |
|---|---|---|---|
| 6 TTL | 12 pF | 430 Ω | 10 kΩ |
| 10 TTL | 20 pF | 270 Ω | 6 kΩ |

(*)CL INCLUDES THE LOADING EFFECT OF THE OSCILLOSCOPE PROBE

### Typical Test Circuit For HCMOS Logic




(*)CL INCLUDES PROBE AND JIG CAPACITANCE



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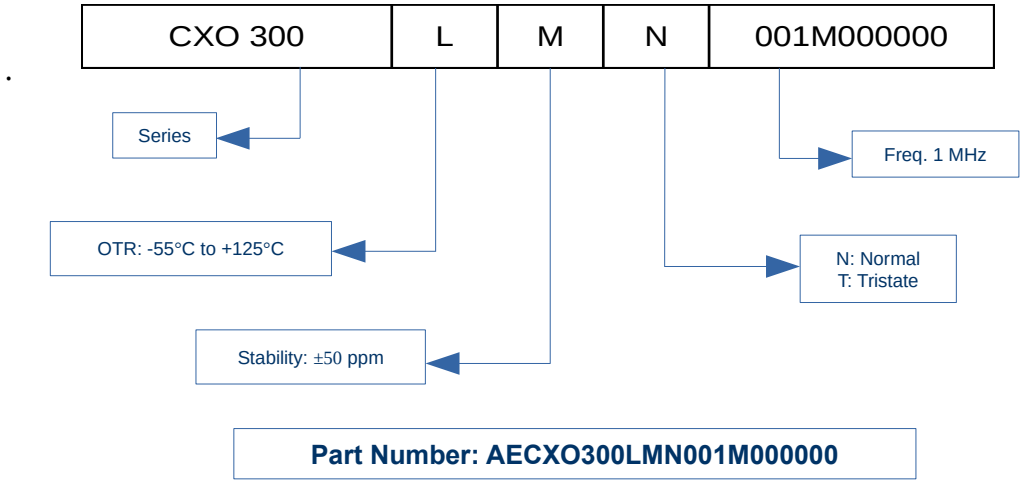
## CLASS 'B' SCREENING TESTS

| TEST DESCRIPTION | TEST CONDITION |
|---|---|
| Temperature Cycling | MIL-STD-883, Method 1010, Condition B |
| Constant Acceleration | MIL-STD-883, Method 2001, Condition A, Y1 only (5000 g) |
| Seal test | MIL-STD-202, method 112<br>a. Fine leak: (1) Test condition C.<br>b. Gross leak: Bubble Test |
| Electrical test: | MIL-PRF-55310E-Methods<br>Measure all the electrical parameters as per the device specifications and shall meet the requirements (tolerance limits) as per the device specifications. |
| Burn-in (load) | Maximum specified operating temperature, nominal supply voltage and burn – in load, 160 hours minimum |
| Electrical test: | MIL-PRF-55310E-Methods<br>Measure all the electrical parameters as per the device specifications and shall meet the requirements (tolerance limits) as per the device specifications. |

**Ordering Information**

**Example**




**Part Number: AECXO300LMN001M000000**

Specifications subject to change without notice

Rev. Date: 19th March 2021

Note: Not all combination of options are available. Other specifications may be available upon request.



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