



# 250.00 MHz LVPECL Oscillator

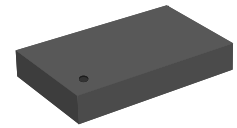
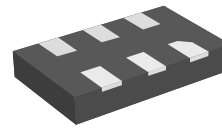
High Performance Differential Oscillator

4MA250000Z3

## ADVANCE DATASHEET

### Features

- Frequency: 250.00 MHz
- Output Type: LVPECL
- Frequency Stability:  $\pm 50$ ppm
- Supply Voltage: 2.5V & 3.3V
- Standard Packages: 5.0 x 3.2 mm; 7.0 x 5.0 mm
- RMS phase jitter: 0.7ps typical (12k to 20MHz)
- Operating Temperature: -40 to 85 °C



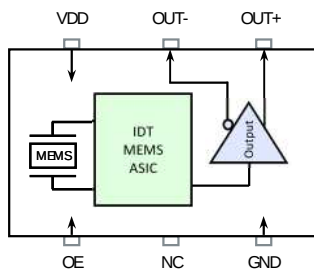
This product is rated "Green", please contact IDT for environmental compliancy information

### Specification

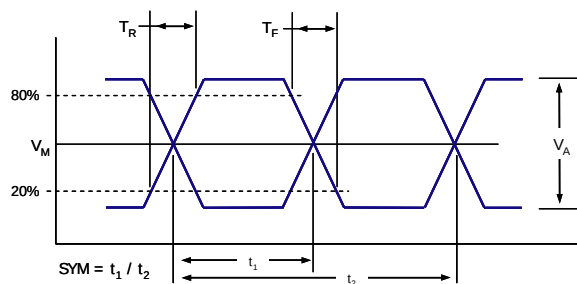
| Parameter                   | 2.5 V Specifications |                |                | 3.3 V Specifications |                |                | Units | Conditions                                              |
|-----------------------------|----------------------|----------------|----------------|----------------------|----------------|----------------|-------|---------------------------------------------------------|
|                             | Min                  | Typ            | Max            | Min                  | Typ            | Max            |       |                                                         |
| Supply Voltage ( $V_{DD}$ ) |                      | 2.50           |                |                      | 3.30           |                | V     |                                                         |
| Output Frequency            |                      | 250.00         |                |                      | 250.00         |                | MHz   |                                                         |
| Frequency Stability         |                      |                | $\pm 50$       |                      |                | $\pm 50$       | ppm   | -40 to 85°C                                             |
| Supply Current              |                      |                | 100            |                      |                | 100            | mA    | no load                                                 |
| Input LOW level             |                      |                | $0.3V_{DD}$    |                      |                | $0.3V_{DD}$    | V     | At OEpin                                                |
| Input HIGH level            | $0.7V_{DD}$          |                |                | $0.7V_{DD}$          |                |                | V     | At OEpin                                                |
| Output LOW level            |                      |                | $V_{DD} - 1.6$ |                      |                | $V_{DD} - 1.6$ | V     |                                                         |
| Output HIGH level           | $V_{DD} - 1.0$       |                |                | $V_{DD} - 1.0$       |                |                | V     |                                                         |
| Rise Time ( $T_R$ )         |                      |                | 300            |                      |                | 300            | ps    | Maximum; 20/ 80% of $V_A$ ; Output load ( $C_L$ ) = 2pF |
| Fall Time ( $T_F$ )         |                      |                | 300            |                      |                | 300            | ps    | Maximum; 20/ 80% of $V_A$ ; Output load ( $C_L$ ) = 2pF |
| Amplitude ( $V_A$ )         |                      | 0.75           |                |                      | 0.75           |                | V     | Single Ended output swing (Pk-Pk)                       |
| Mid Level ( $V_M$ )         |                      | $V_{DD} - 1.3$ |                |                      | $V_{DD} - 1.3$ |                | V     |                                                         |
| Symmetry (SYM)              | 45                   |                | 55             | 45                   |                | 55             | %     | Worst case; measured at 50% of waveform                 |
| Period Jitter               |                      |                | 3              |                      |                | 3              | ps    | Measured over 10k cycles, rms                           |
| Phase Jitter                |                      |                | 1.0            |                      |                | 1.0            | ps    | 12k to 20MHz, rms                                       |
| Aging                       |                      |                | $\pm 5$        |                      |                | $\pm 5$        | ppm   | 25°C, 10 years                                          |

Note: Above specifications are typical at room temperature (25°C) unless otherwise specified. Frequency stability includes initial frequency tolerance, temperature variation, supply voltage variation, reflow drift, and aging (+25 °C, 10 years).

### Block Diagram

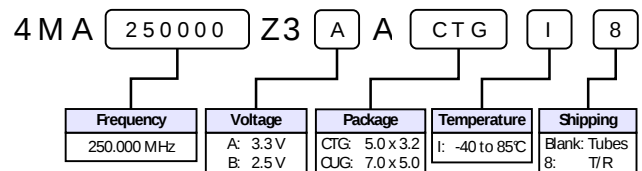


### Output Waveform

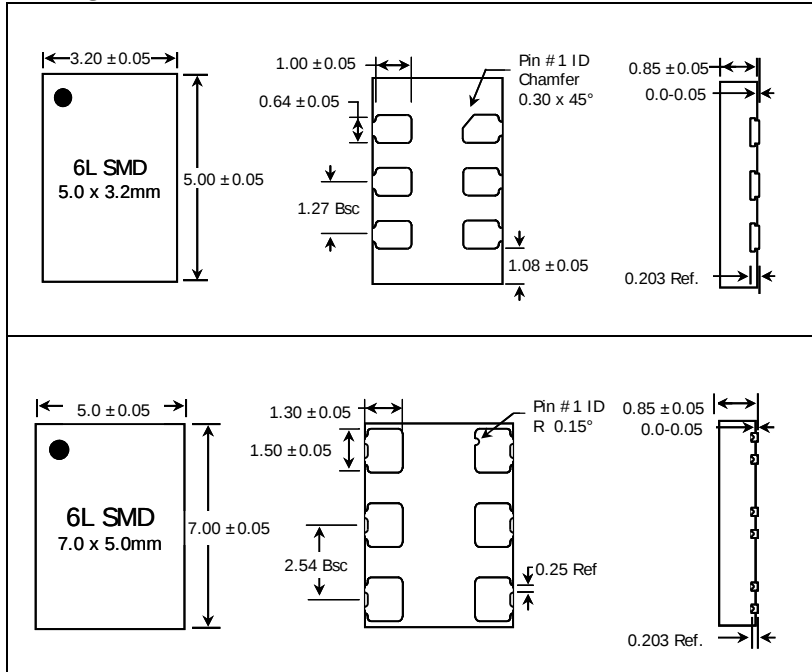


### Part Ordering Information

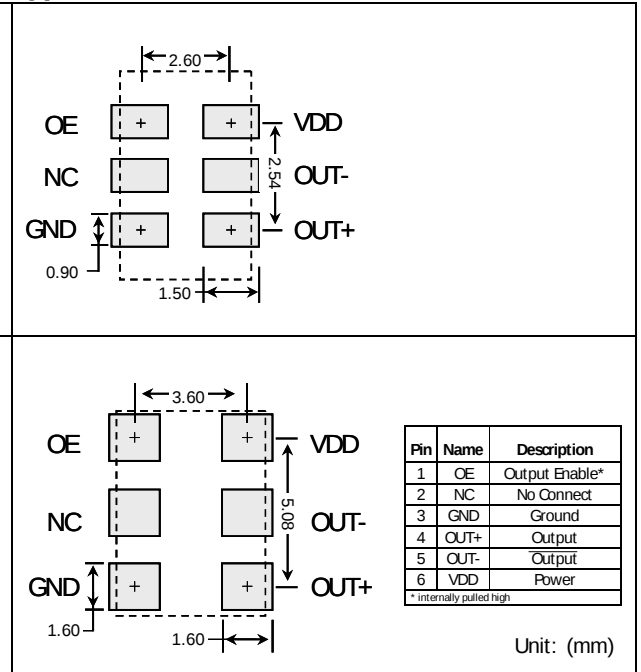
| Package Size | Voltage | Ordering Code     |
|--------------|---------|-------------------|
| 5.0 x 3.2 mm | 3.3 V   | 4MA250000Z3AACTGI |
|              | 2.5 V   | 4MA250000Z3BACTGI |
| 7.0 x 5.0 mm | 3.3 V   | 4MA250000Z3AACUGI |
|              | 2.5 V   | 4MA250000Z3BACUGI |



## Package Outline and Dimensions



## Typical PCB Land Pattern



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