



MX555ABH25M0000

Ultra-low Jitter 25MHz LVC MOS XO

ClockWorks™ FUSION

General Description

The MX555ABH25M0000 is an ultra-low phase jitter XO with LVC MOS output optimized for high line rate applications.

Features

- 25MHz LVC MOS
- Typical phase noise:
 - 100fs (Integration range: 1.875MHz-20MHz)
- ±50ppm total frequency stability
- -40°C to +85°C temperature range
- Industry standard 6-Pin 5mm x 3.2mm LGA package

Absolute Maximum Ratings

Supply Voltage (VIN).....+3.6V
 Lead Temperature (soldering, 10s).....260°C
 Storage Temperature (T_s).....125°C
 ESD Rating (HBM).....2kV

Operating Ratings

Supply Voltage (VIN).....+2.375V to +3.63V
 Ambient Temperature (TA).....-40°C to +85°C

Electrical Characteristics

VDD = 2.375 - 3.63V, TA = -40°C to +85°C, output terminated with 50 Ohms to VDD/2.¹

| Symbol | Parameter | Condition | Min. | Typ. | Max. | Units |
|--------|---------------------|---|-----------|------------|-----------|-------|
| IDD | Supply Current | | | | 95 | mA |
| F0 | Center Frequency | | | 25 | | MHz |
| | Frequency Stability | Note 2 | | | ±50 | ppm |
| ∅j | Phase Noise | Integration Range (12kHz to 20MHz) Integration Range (1.875MHz to 20MHz) | | 220 100 | | fsRMS |
| Tstart | Start-Up Time | | | | 20 | ms |
| TR/TF | Rise/Fall time | | 300 | | | ps |
| | Duty Cycle | | 45 | | 55 | % |
| VIH | Input High Voltage | 3.3V Operation | 2 | | VDD + 0.3 | V |
| VIL | Input Low Voltage | 3.3V Operation | -0.3 | | 0.8 | V |
| VOH | Output High Voltage | LVC MOS output levels | VDD - 0.6 | | | V |
| VOL | Output Low Voltage | LVC MOS output levels | | | 0.6 | V |

Notes:

1. Guaranteed after thermal equilibrium.
2. Inclusive of initial accuracy, temperature drift, aging, shock, vibration from -40°C to +85°C.

ClockWorks is a registered trademark of Micrel, Inc

Micrel Inc. • 2180 Fortune Drive • San Jose, CA 95131 • USA • tel +1 (408) 944-0800 • fax + 1 (408) 474-1000 • <http://www.micrel.com>

May 06, 2014
MX555AB1-1488

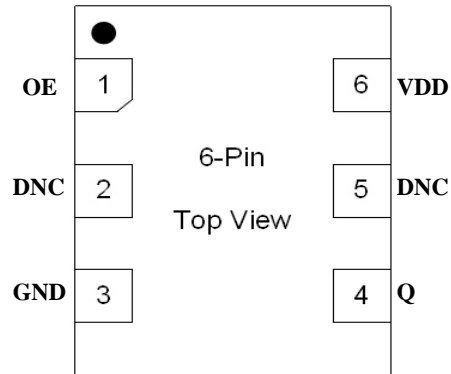
Revision 1.0
tcghelp@micrel.com or (408) 955-1690

Ordering Information

| Ordering Part Number | Marking Line 1 | Marking Line 3 | Shipping | Package |
|----------------------|----------------|----------------|---------------|-----------------------|
| MX555ABH25M0000 | MX555A | BH0250 | Tube | 6-Pin 5mm x 3.2mm LGA |
| MX555ABH25M0000 TR | MX555A | BH0250 | Tape and Reel | 6-Pin 5mm x 3.2mm LGA |

Devices are Green and RoHS compliant. Sample material may have only a partial top mark.

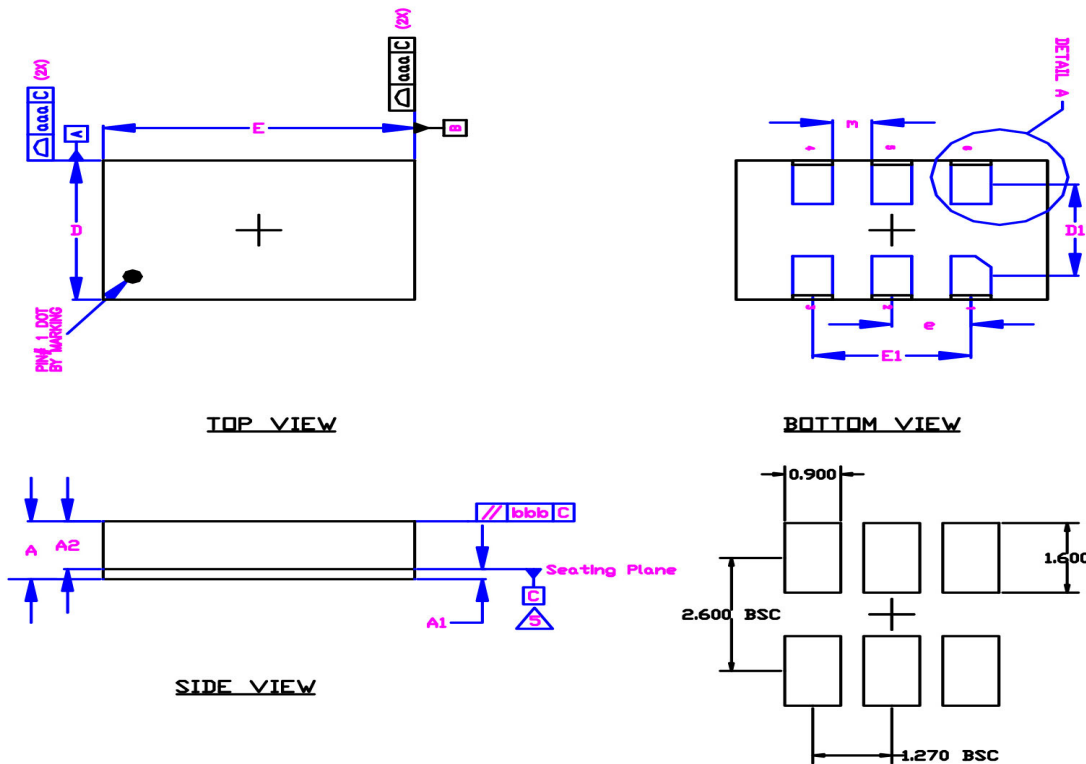
Pin Configuration



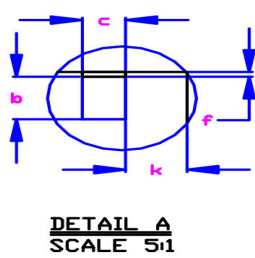
Pin Description

| Pin Number | Pin Name | Pin Type | Pin Level | Pin Function |
|------------|----------|----------|-----------|--|
| 1 | OE | I, SE | LVC MOS | Output Enable, disables output to tri-state, 1 = Disabled, 0 = Enabled, 50k Ohms Pull-Down |
| 2 | DNC | | | Make no connection, leave floating. |
| 3 | GND | PWR | | Power Supply Ground |
| 4, 5 | Q, DNC | O, SE | LVC MOS | Clock Output Frequency = 25MHz |
| 6 | VDD | PWR | | Power Supply |

Package Information and Recommended Land Pattern for 6-Pin LGA³



| Dimensional Tol. | | | |
|------------------|----------|------|------|
| aaa | 0.10 | | |
| bbb | 0.17 | | |
| Dimensional Ref. | | | |
| REF. | Min. | Nom. | Max. |
| A | 1.26 | 1.33 | 1.41 |
| A1 | 0.19 | 0.23 | 0.27 |
| A2 | 1.07 | 1.10 | 1.13 |
| D | 3.10 | 3.28 | 3.38 |
| D1 | 2.10 BSC | | |
| E | 4.90 | 5.00 | 5.10 |
| E1 | 2.54 BSC | | |
| b | 0.85 | 0.90 | 0.95 |
| c | 0.85 | 0.90 | 0.95 |
| e | 1.27 BSC | | |
| f | 0.85 | 0.90 | 0.95 |
| k | 0.86 | 0.91 | 0.96 |
| m | 0.58 | 0.63 | 0.68 |
| n | 6 | | |



RECOMMENDED LAND PATTERN

- Notes**
1. Dimensioning and Tolerancing per ASME Y14.5M-1994.
 2. Dimensions are in millimeters.
 3. 'e' represents the basic LGA pitch
 4. 'n' is the maximum no. of Land for a specified Package.
 5. Package warp shall be 0.050 max.
 6. Substrate base is BT Resin
 7. The Pin#1 corner must be identified on top side only.
 8. Reference Jeduc Spec M0-220

Note:

3. Package information is correct as of the publication date. For updates and most current information, go to www.micrel.com.

MICREL, INC. 2180 FORTUNE DRIVE SAN JOSE, CA 95131 USA
 TEL +1 (408) 944-0800 FAX +1 (408) 474-1000 WEB <http://www.micrel.com>

Micrel makes no representations or warranties with respect to the accuracy or completeness of the information furnished in this data sheet. This information is not intended as a warranty and Micrel does not assume responsibility for its use. Micrel reserves the right to change circuitry, specifications and descriptions at any time without notice. No license, whether express, implied, arising by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Micrel's terms and conditions of sale for such products, Micrel assumes no liability whatsoever, and Micrel disclaims any express or implied warranty relating to the sale and/or use of Micrel products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright or other intellectual property right.

© 2014 Micrel, Incorporated.