



# MX553LBC29M7000

## Ultra-Low Jitter 29.7MHz LVCMOS XO

### ClockWorks® FUSION

### General Description

The MX553LBC29M7000 is an ultra-low phase jitter XO with LVCMOS output optimized for high line rate applications.

### Features

- 29.7MHz LVCMOS
- Typical phase noise:
  - 100fs (Integration range: 1.875MHz-20MHz)
- $\pm 50$ ppm 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).....+4.6V  
Lead Temperature (soldering, 10s).....260°C  
Storage Temperature (T<sub>s</sub>).....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.<sup>1</sup>

| Symbol        | Parameter           | Condition                                                                   | Min.      | Typ.       | Max.      | Units |
|---------------|---------------------|-----------------------------------------------------------------------------|-----------|------------|-----------|-------|
| IDD           | Supply Current      |                                                                             |           |            | 95        | mA    |
| F0            | Center Frequency    |                                                                             |           | 29.7       |           | MHz   |
|               | Frequency Stability | Note 2                                                                      |           |            | $\pm 50$  | ppm   |
| $\emptyset j$ | Phase Noise         | Integration Range (12kHz to 20MHz)<br>Integration Range (1.875MHz to 20MHz) |           | 220<br>100 |           | fsRMS |
| Tstart        | Start-Up Time       |                                                                             |           |            | 20        | ms    |
| TR/TF         | Rise/Fall time      |                                                                             | 100       |            | 500       | 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 | LVCMOS output levels                                                        | VDD - 0.8 |            |           | V     |
| VOL           | Output Low Voltage  | LVCMOS output levels                                                        |           |            | 0.6       | V     |

#### Notes:

1. Guaranteed after thermal equilibrium.
2. Inclusive of initial accuracy, temperature drift, aging, shock, vibration.

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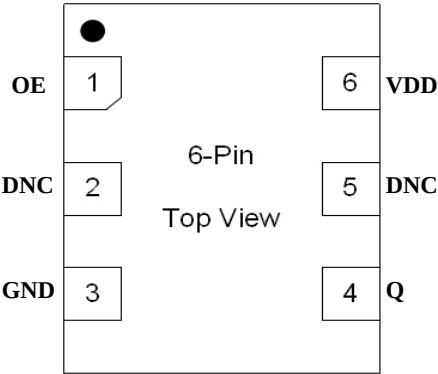
Revision 1.0  
[tcghelp@microchip.com](mailto:tcghelp@microchip.com)

Ordering Information

| Ordering Part Number | Marking Line 1 | Marking Line 3 | Shipping      | Package               |
|----------------------|----------------|----------------|---------------|-----------------------|
| MX553LBC29M7000      | MX553L         | BC0297         | Tube          | 6-Pin 5mm x 3.2mm LGA |
| MX553LBC29M7000-TR   | MX553L         | BC0297         | 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.

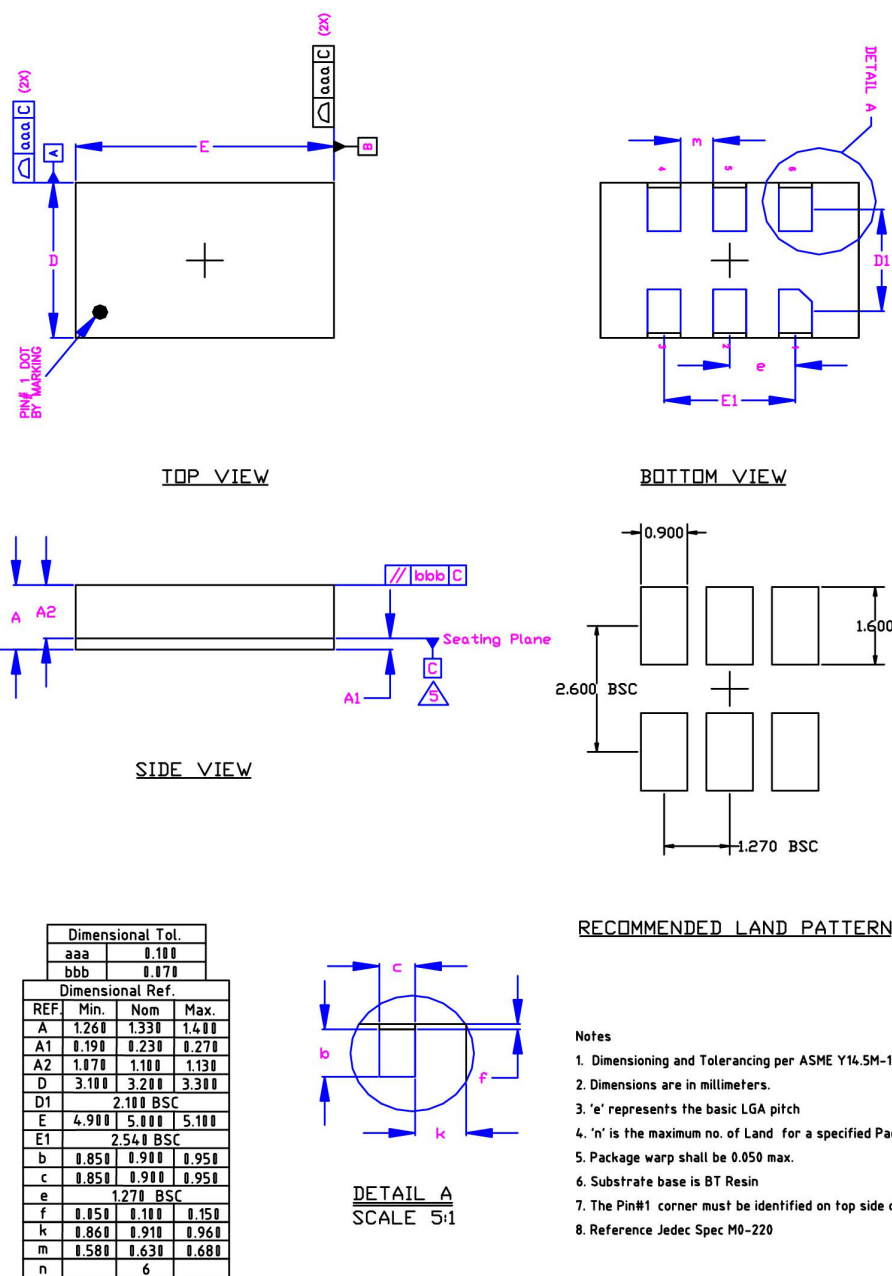
Pin Configuration



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, 0 = Disabled, 1 = Enabled, 50k Ohms Pull-Up |
| 2          | DNC      |          |           | Make no connection, leave floating.                                                      |
| 3          | GND      | PWR      |           | Power Supply Ground                                                                      |
| 4, 5       | Q, DNC   | O, SE    | LVC MOS   | Clock Output Frequency = 29.7MHz                                                         |
| 6          | VDD      | PWR      |           | Power Supply                                                                             |

## Package Information and Recommended Land Pattern for 6-Pin LGA<sup>3</sup>



### Note:

3. Package information is correct as of the publication date. For updates and most current information, go to [www.microchip.com](http://www.microchip.com).

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