



MX553BBA156M250

Ultra-low Jitter 156.25MHz LVPECL XO

ClockWorks™ FUSION

General Description

The MX553BBA156M250 is an ultra-low phase jitter XO with LVPECL output optimized for high line rate applications.

Applications

- 10/40/400 Gigabit Ethernet
- Fibre Channel 10G/12G SERDES

Absolute Maximum Ratings

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

Features

- 156.25MHz LVPECL
- Typical phase noise:
-80fs (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

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, outputs terminated with 50 Ohms to VDD - 2.¹

| Symbol | Parameter | Condition | Min. | Typ. | Max. | Units |
|--------|-----------------------------------|-----------------------------------------------------------------------------|------------|------------|-----------|-------|
| IDD | Supply Current | | | | 120 | mA |
| F0 | Center Frequency | | | 156.25 | | MHz |
| | Frequency Stability | Note 2 | | | ±50 | ppm |
| Øj | Phase Noise | Integration Range (12kHz to 20MHz) Integration Range (1.875MHz to 20MHz) | | 175 80 | | fsRMS |
| Tstart | Start-Up Time | | | | 20 | ms |
| TR/TF | Rise/Fall time | | 300 | | | ps |
| | Duty Cycle | | 45 | | 55 | % |
| VOH | Output High Voltage | LVPECL output levels | VDD - 1.35 | VDD - 1.01 | VDD - 0.8 | V |
| VOL | Output Low Voltage | LVPECL output levels | VDD - 2.0 | VDD - 1.78 | VDD - 1.6 | V |
| Vswing | Peak to Peak Output Voltage Swing | | 0.65 | 0.77 | 0.95 | V |

Notes:

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

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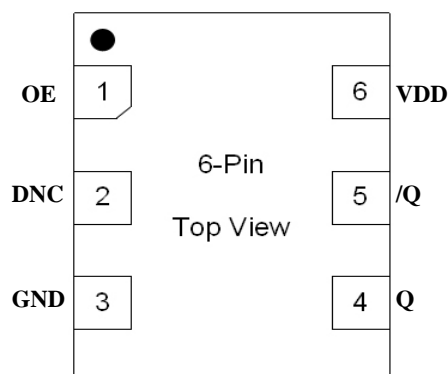
Revision 1.0
tcghelp@micrel.com or (408) 955-1690

Ordering Information

| Ordering Part Number | Marking Line 1 | Marking Line 3 | Shipping | Package |
|----------------------|----------------|----------------|---------------|-----------------------|
| MX553BBA156M250 | MX553BB | A156M250 | Tube | 6-Pin 5mm x 3.2mm LGA |
| MX553BBA156M250 TR | MX553BB | A156M250 | 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.

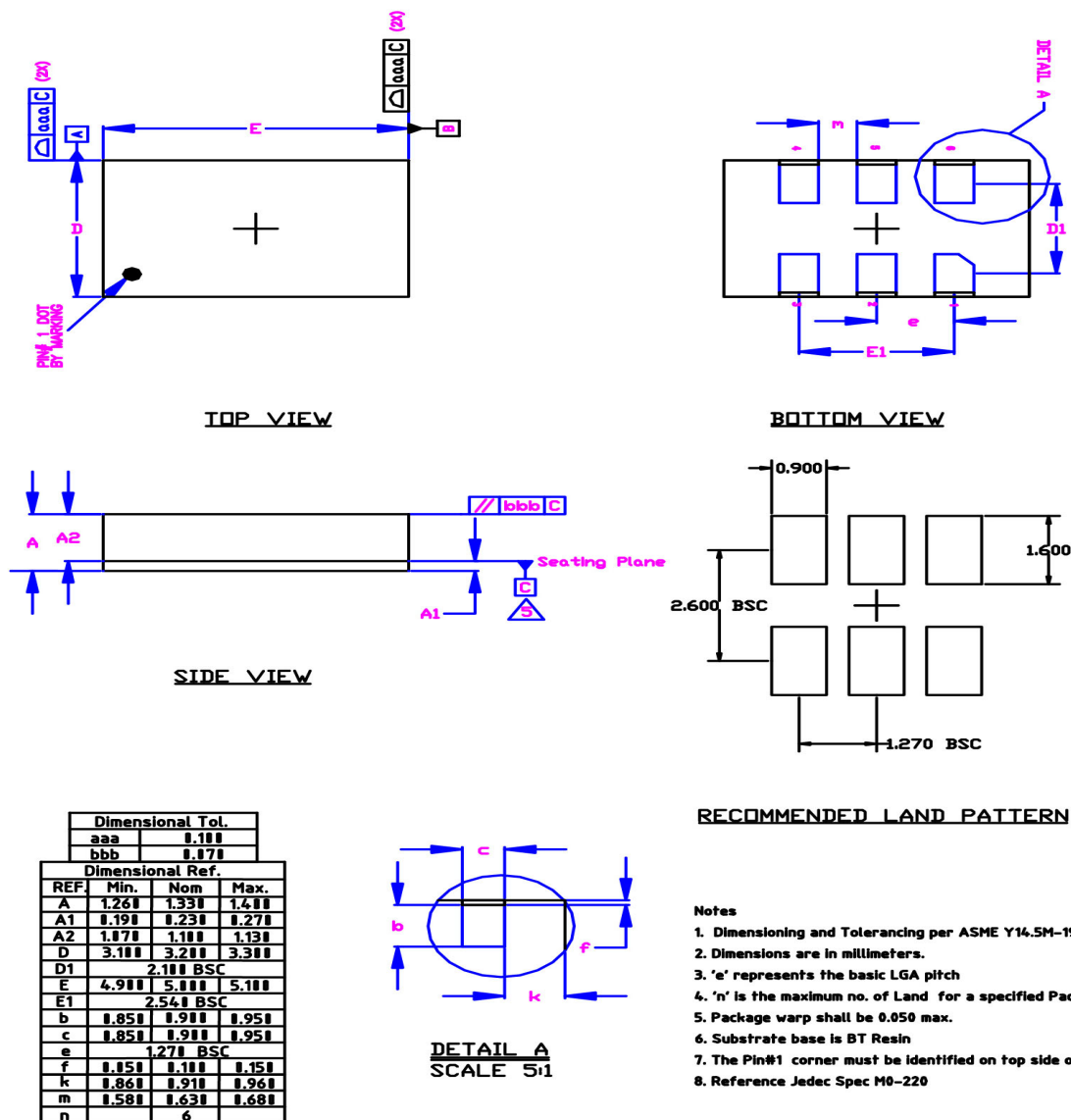
Pin Configuration



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, /Q | O, Diff | LVPECL | Clock Output Frequency = 156.25MHz |
| 6 | VDD | PWR | | Power Supply |

Package Information and Recommended Land Pattern for 6-Pin LGA³



6-Pin LGA (5x3.2mm)

Note:

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

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