



# MX573BNR156M250

## Ultra-Low Jitter 156.25MHz LVPECL XO

### ClockWorks® FUSION

### General Description

The MX573BNR156M250 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 <sub>s</sub> ).....	125°C
ESD Rating (HBM).....	2kV

### Electrical Characteristics

VDD = 2.375 - 3.63V, TA = -40°C to +85°C, outputs terminated with 50 Ohms to VDD - 2V.<sup>1</sup>

Symbol	Parameter	Condition	Min.	Typ.	Max.	Units
IDD	Supply Current				120	mA
F0	Center Frequency			156.25		MHz
	Frequency Stability	Note 2			±50	ppm
∅j	Phase Noise	Integration Range (12kHz to 20MHz) Integration Range (1.875MHz to 20MHz)		165 110		fsRMS
Tstart	Start-Up Time				20	ms
TR/TF	Rise/Fall time		85		350	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.

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[tcghelp@micrel.com](mailto:tcghelp@micrel.com) or (408) 955-1690

### Features

- 156.25MHz LVPECL
- Typical phase noise:
  - 110fs (Integration range: 1.875MHz-20MHz)
- ±50ppm total frequency stability
- -40°C to +85°C temperature range
- Industry standard 6-Pin 7mm x 5mm LGA package

### Operating Ratings

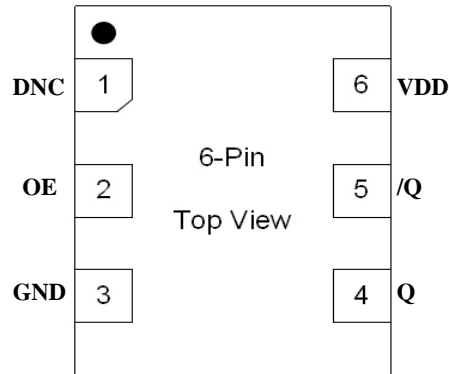
Supply Voltage (VIN).....	+2.375V to +3.63V
Ambient Temperature (TA).....	-40°C to +85°C

## Ordering Information

Ordering Part Number	Marking Line 1	Marking Line 3	Shipping	Package
MX573BNR156M250	MX573BN	R156M250	Tube	6-Pin 7mm x 5mm LGA
MX573BNR156M250 TR	MX573BN	R156M250	Tape and Reel	6-Pin 7mm x 5mm 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	DNC			Make no connection, leave floating.
2	OE	I, SE	LVC MOS	Output Enable, disables output to tri-state, 0 = Disabled, 1 = Enabled, 50k Ohms Pull-Up
3	GND	PWR		Power Supply Ground
4, 5	Q, /Q	O, Diff	LVPECL	Clock Output Frequency = 156.25MHz
6	VDD	PWR		Power Supply

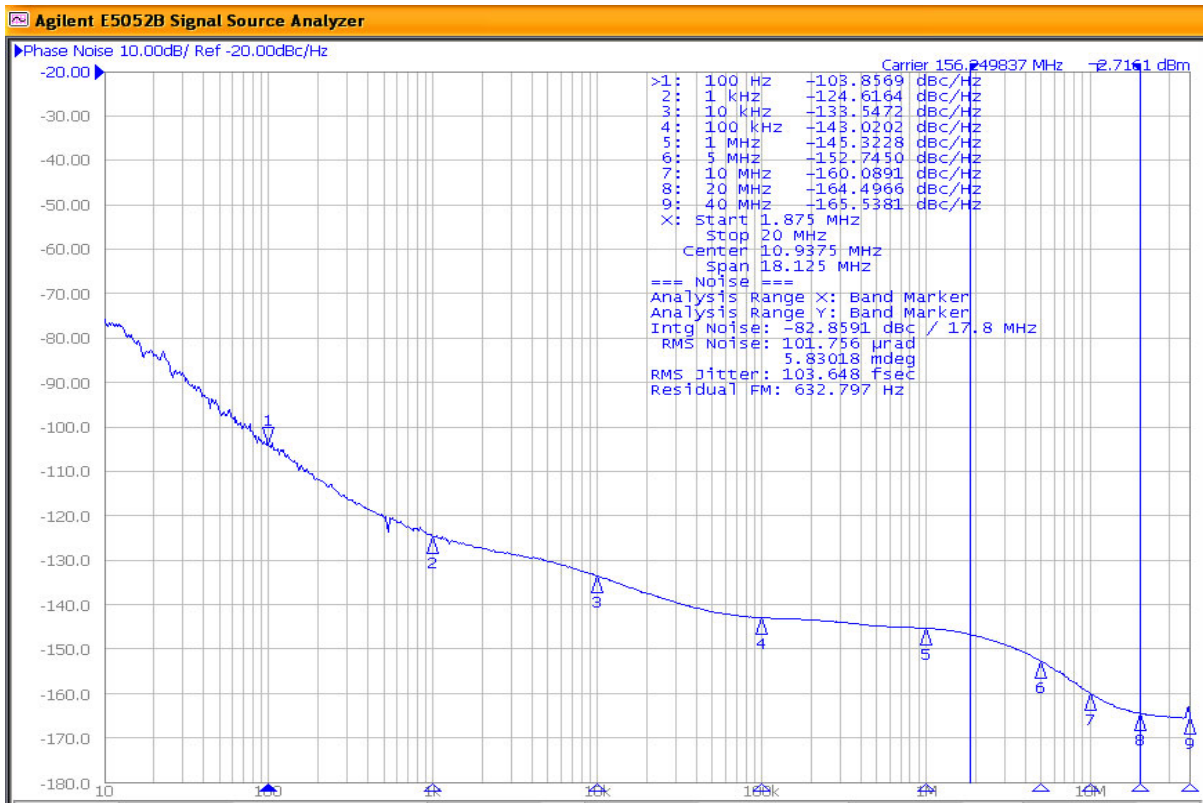


Figure 1. LVPECL Output 156.25MHz 1.875MHz-20MHz 104fs

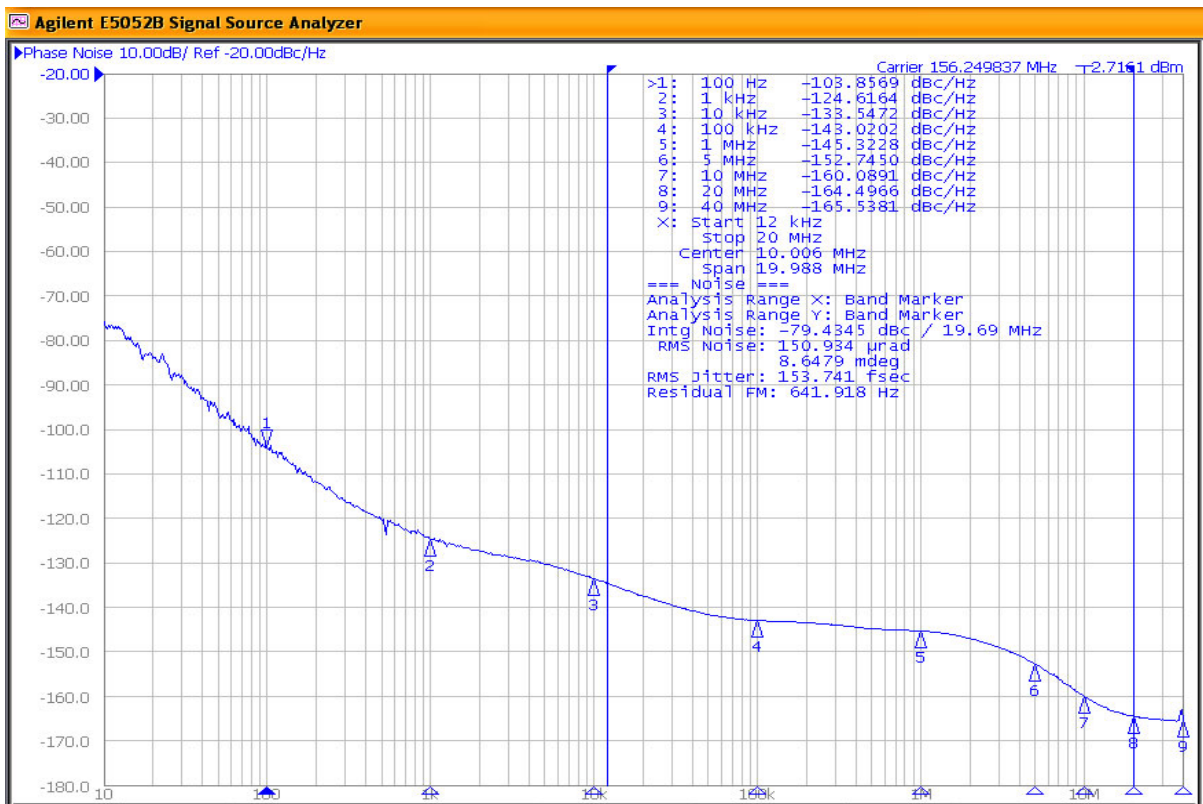
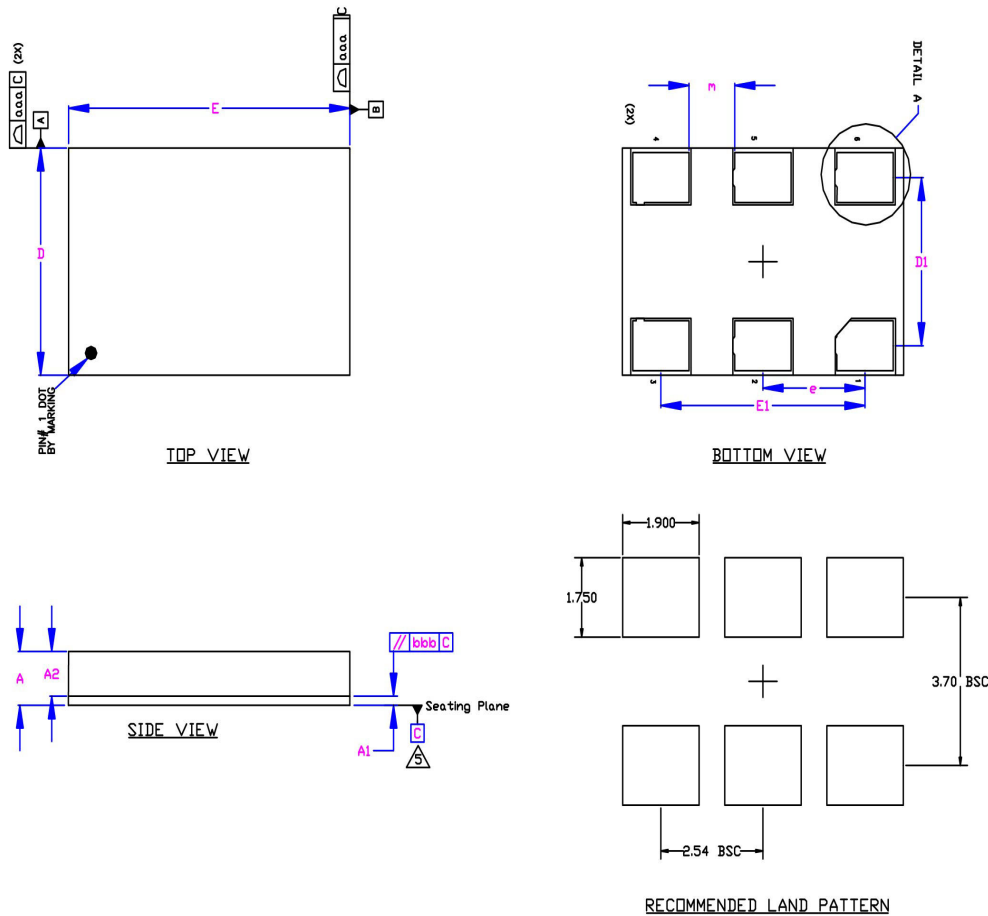


Figure 2. LVPECL Output 156.25MHz 12kHz-20MHz 154fs

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



Dimensional Tol.			
aaa			0.100
bbb			0.070
Dimensional Ref.			
REF.	Min.	Nom	Max.
A	1.260	1.330	1.400
A1	0.190	0.230	0.270
A2	1.070	1.100	1.130
D	4.900	5.000	5.100
D1		3.700 BSC	
E	6.900	7.000	7.100
E1		5.000 BSC	
b	1.050	1.100	1.150
c	1.350	1.400	1.450
e		2.540 BSC	
f	0.050	0.100	0.150
k	0.210	0.260	0.310
m	1.090	1.140	1.190
n		36	



- 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 0.150 max.
  6. Substrate base is BT Resin
  7. The Pin#1 corner must be identified on top side only.
  8. Reference Jeduc Spec M1-221
  9. Land pattern tolerance is 0.05mm unless otherwise specified

**6-Pin LGA (7x5mm)**

**Note:**

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

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