



MX573BBA312M500

Ultra-Low Jitter 312.5MHz LVPECL XO

ClockWorks® FUSION

General Description

The MX573BBA312M500 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 _s).....	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.¹

Symbol	Parameter	Condition	Min.	Typ.	Max.	Units
IDD	Supply Current				120	mA
F0	Center Frequency			312.5		MHz
	Frequency Stability	Note 2			±50	ppm
∅j	Phase Noise	Integration Range (12kHz to 20MHz) Integration Range (1.875MHz to 20MHz)		155 108		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.

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>

October 06, 2015
MX573BB1-1840

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

Features

- 312.5MHz LVPECL
- Typical phase noise:
 - 108fs (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

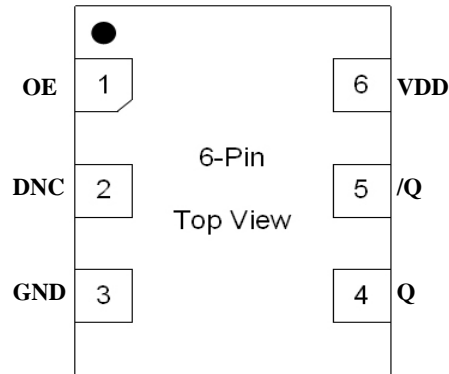
Supply Voltage (VIN).....	+2.375V to +3.63V
Ambient Temperature (TA).....	-40°C to +85°C

Ordering Information

Ordering Part Number	Marking Line 1	Marking Line 3	Shipping	Package
MX573BBA312M500	MX573BB	A312M500	Tube	6-Pin 7mm x 5mm LGA
MX573BBA312M500 TR	MX573BB	A312M500	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	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 = 312.5MHz
6	VDD	PWR		Power Supply

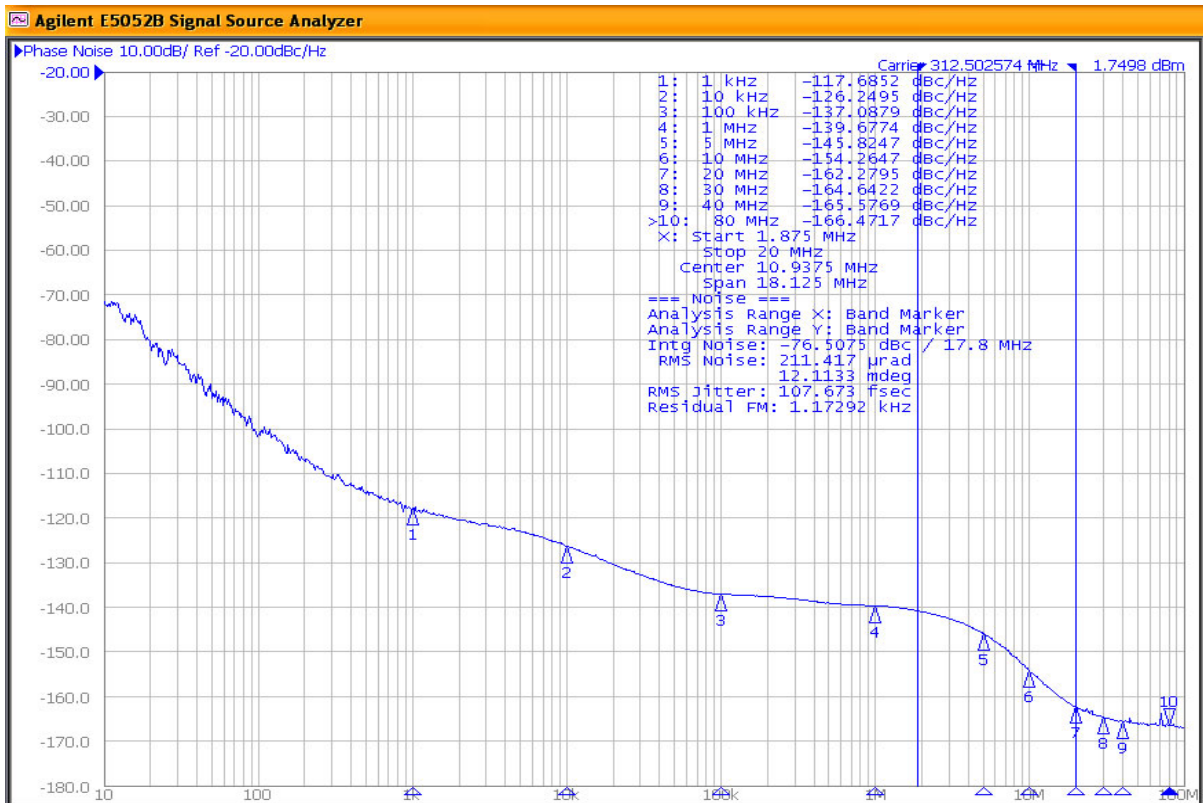


Figure 1. LVPECL Output 312.5MHz 1.875MHz-20MHz 108fs

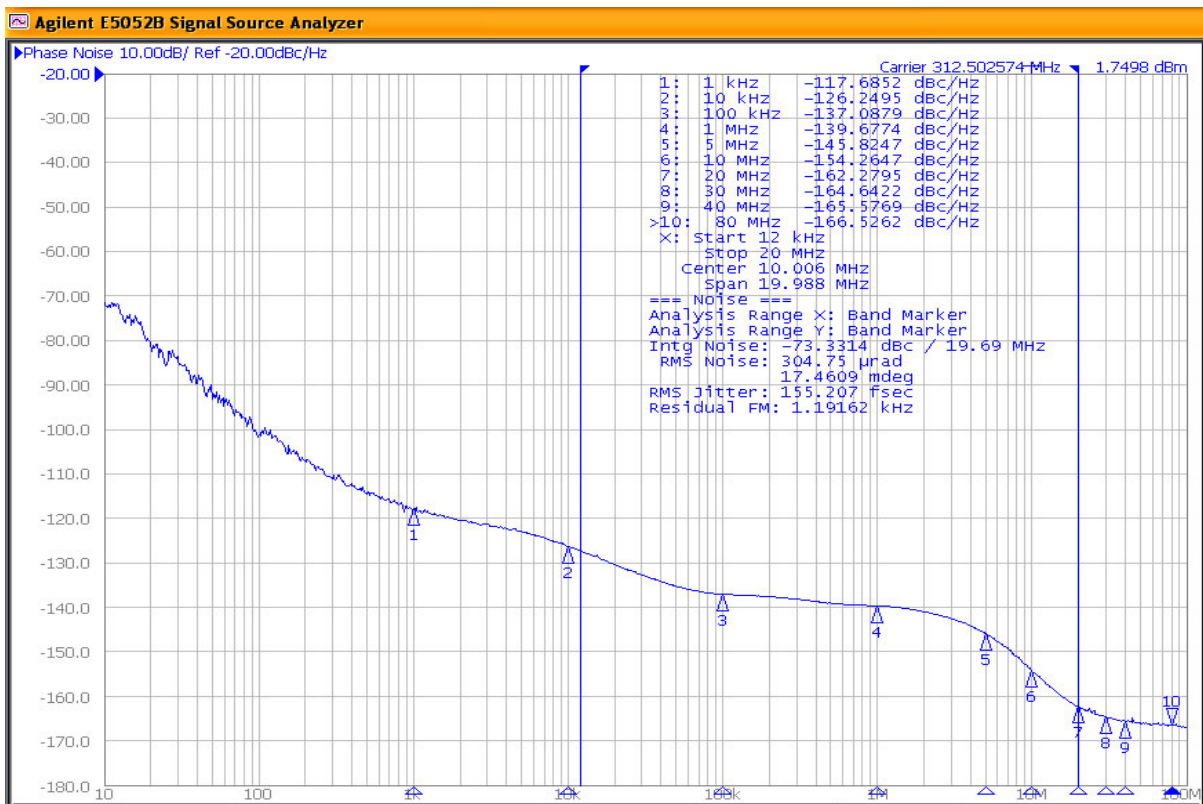
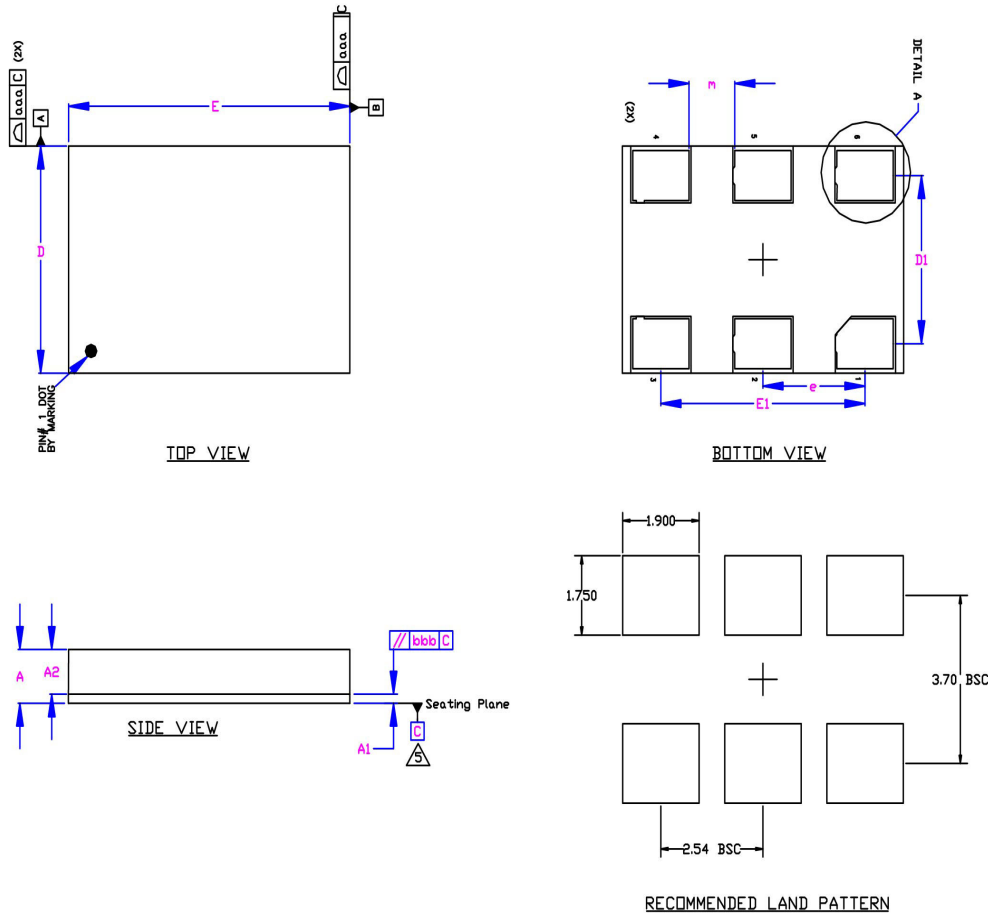


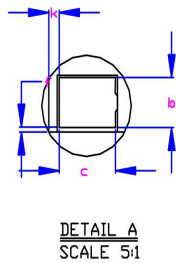
Figure 2. LVPECL Output 312.5MHz 12kHz-20MHz 155fs

Package Information and Recommended Land Pattern for 6-Pin LGA³



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.

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.

© 2015 Micrel, Incorporated.