MX573BBB156M250

Ultra-low Jitter 156.25MHz LVDS XO

ClockWorks™ FUSION

General Description

The MX573BBB156M250 is an ultra-low phase jitter XO with LVDS output optimized for high line rate applications.

Applications

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

Features

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

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, outputs terminated with 100 Ohms between Q and /Q.[1]

Symbol	Parameter	Condition	Min.	Typ.	Max.	Units
IDD	Supply Current				90	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 VOH max = VCM max + 1/2 VOD max	LVDS output levels	1.248	1.375	1.602	V
VOL	Output Low Voltage VOL min = VCM min - 1/2 VOD max	LVDS output levels	0.898	1.025	1.252	V
VOD	Output Differential Voltage		247	350	454	mV
VCM	Common Mode Output Voltage		1.125	1.2	1.375	V

Notes:

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

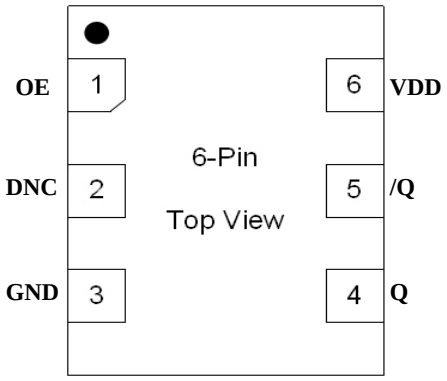
Micrel Inc. • 2180 Fortune Drive • San Jose, CA 95131 • USA • tel +1 (408) 944-0800 • fax + 1 (408) 474-1000 • http://www.micrel.com

Ordering Information

Ordering Part Number	Marking Line 1	Marking Line 3	Shipping	Package
MX573BBB156M250	MX573BB	B156M250	Tube	6-Pin 7mm x 5mm LGA
MX573BBB156M250 TR	MX573BB	B156M250	Tape and Reel	6-Pin 7mm x 5mm LGA

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

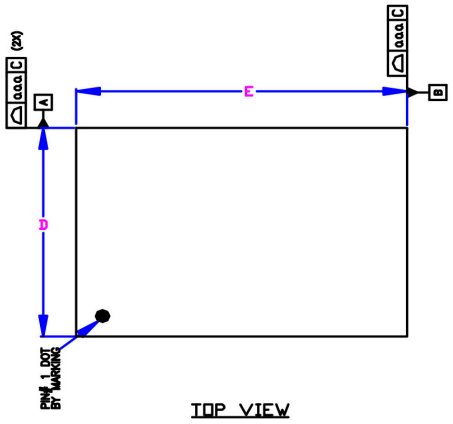
Pin Configuration



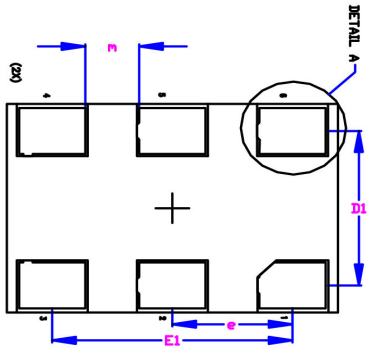
Pin Description

Pin Number	Pin Name	Pin Type	Pin Level	Pin Function
1	OE	I, SE	LVCMOS	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	LVDS	Clock Output Frequency = 156.25MHz
6	VDD	PWR		Power Supply

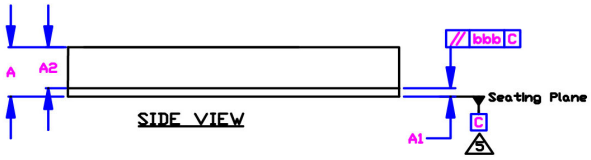
Package Information and Recommended Land Pattern for 6-Pin LGA[3]



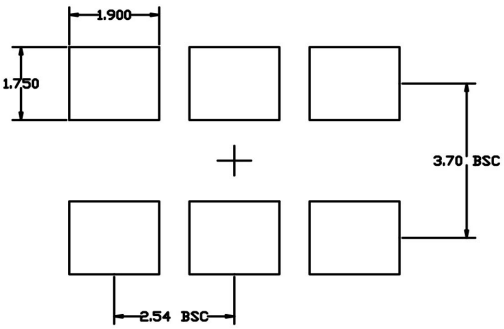
TOP VIEW



BOTTOM VIEW



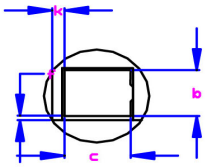
SIDE VIEW



RECOMMENDED LAND PATTERN

Dimensional Tol.	
aaa	0.10
bbb	0.07

Dimensional Ref.			
REF.	Min.	Nom	Max.
A	1.26	1.33	1.40
A1	0.19	0.23	0.27
A2	1.070	1.100	1.130
D	4.90	5.00	5.10
D1		3.70 BSC	
E	6.90	7.00	7.10
E1		5.00 BSC	
b	1.05	1.10	1.15
c	1.35	1.40	1.45
e		2.54 BSC	
f	0.05	0.10	0.15
k	0.21	0.26	0.31
m	1.09	1.14	1.19
n		36	



DETAIL A
SCALE 5:1

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 0.05 max.
6. Substrate base is BT Resin
7. The Pin#1 corner must be identified on top side only.
8. Reference Jedec Spec MO-220
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