



MX555ABB50M0000

Ultra-low Jitter 50MHz LVDS XO

ClockWorks™ FUSION

General Description

The MX555ABB50M0000 is an ultra-low phase jitter XO with LVDS output optimized for high line rate applications.

Features

- 50MHz LVDS
- Typical phase noise:
 - 121fs (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

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			50		MHz
	Frequency Stability	Note 2			±50	ppm
∅j	Phase Noise	Integration Range (12kHz to 20MHz) Integration Range (1.875MHz to 20MHz)		156 121		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.

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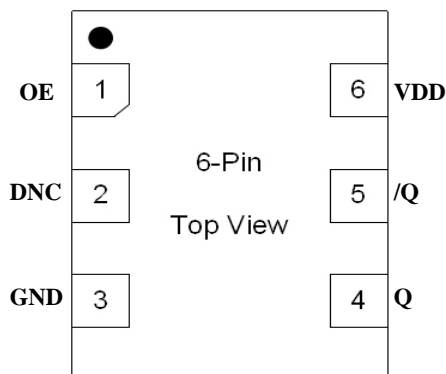
Revision 1.0
tcghelp@micrel.com or (408) 955-1690

Ordering Information

Ordering Part Number	Marking Line 1	Marking Line 3	Shipping	Package
MX555ABB50M0000	MX555A	BB0500	Tube	6-Pin 5mm x 3.2mm LGA
MX555ABB50M0000 TR	MX555A	BB0500	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	LVDS	Clock Output Frequency = 50MHz
6	VDD	PWR		Power Supply

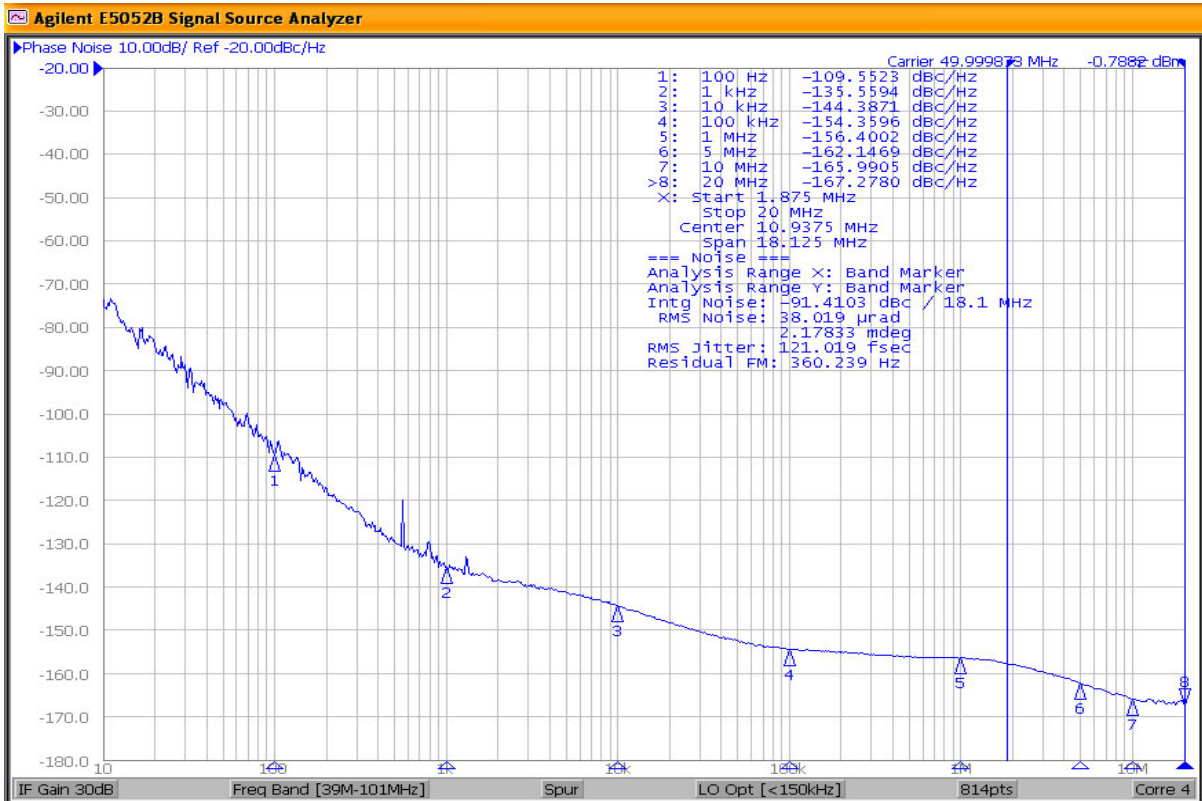


Figure 1. LVDS Output 50MHz 1.875MHz-20MHz 121fs

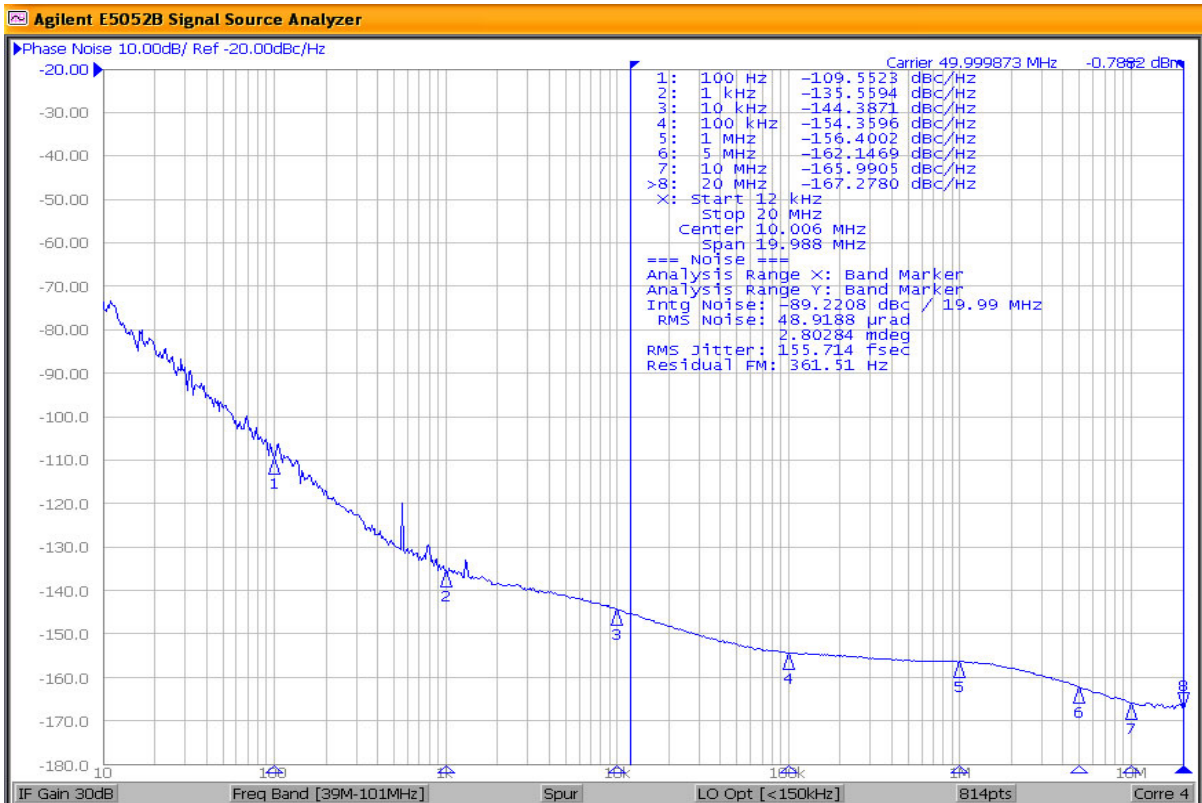
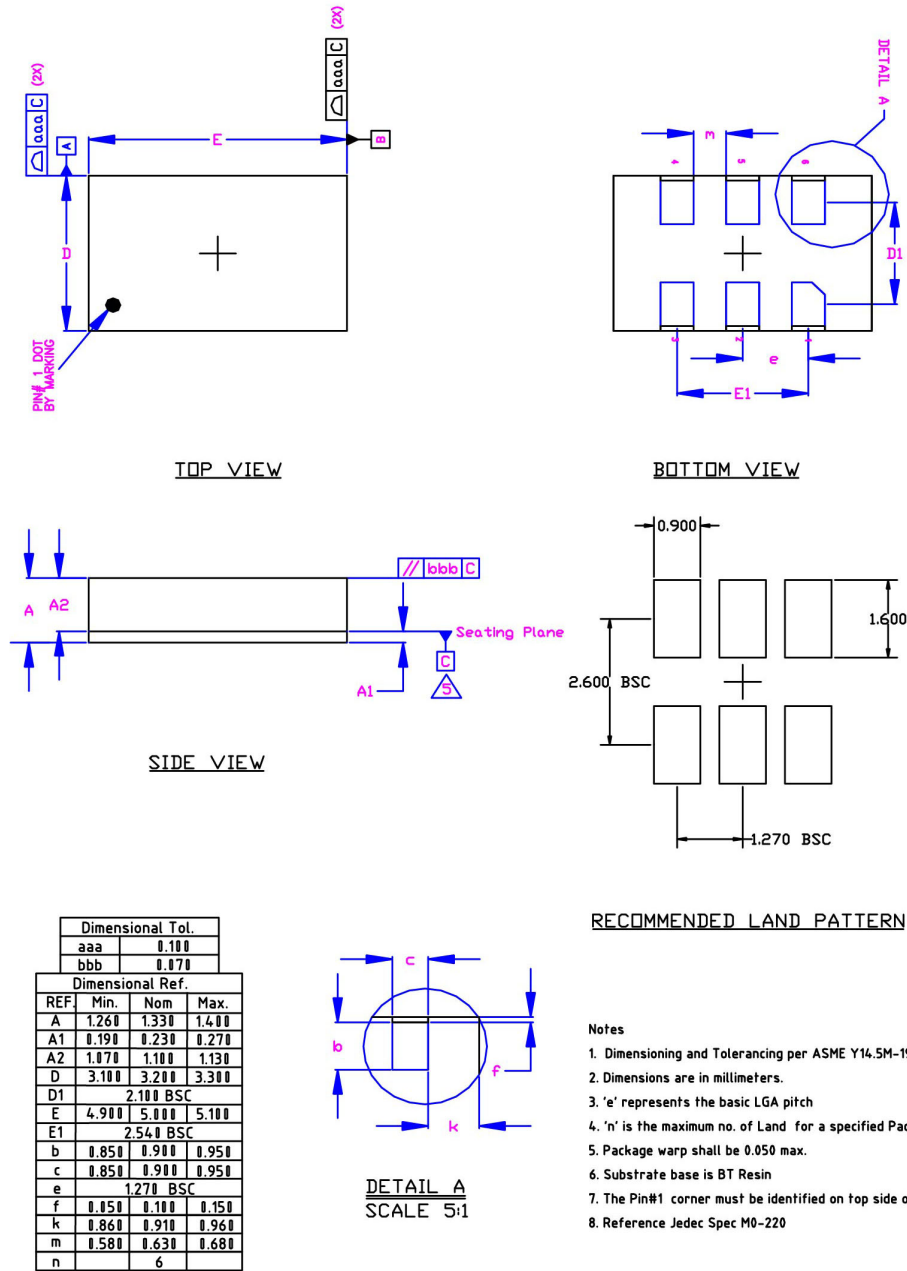


Figure 2. LVDS Output 50MHz 12kHz-20MHz 156fs

Package Information and Recommended Land Pattern for 6-Pin LGA³



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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