



## General Description

The MX553ENR125M000 is an ultra-low phase jitter XO with LVPECL output optimized for high line rate applications.

## Applications

- Gigabit Ethernet
- Storage

## Absolute Maximum Ratings

Supply Voltage (VIN).....+4.6V  
 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			125		MHz
	Frequency Stability	Note 2			±50	ppm
∅j	Phase Noise	Integration Range (12kHz to 20MHz) Integration Range (1.875MHz to 20MHz)		159 115		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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## Features

- 125MHz LVPECL
- Typical phase noise:
  - 115fs (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

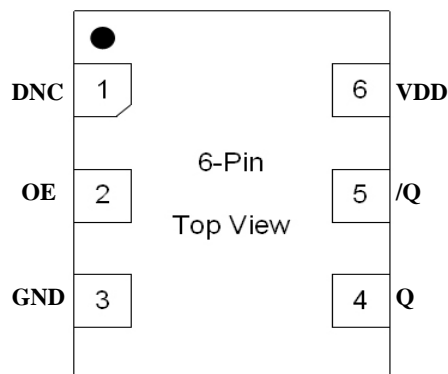
Supply Voltage (VIN).....+2.375V to +3.63V  
 Ambient Temperature (TA).....-40°C to +85°C

## Ordering Information

Ordering Part Number	Marking Line 1	Marking Line 3	Shipping	Package
MX553ENR125M000	MX553E	NR1250	Tube	6-Pin 5mm x 3.2mm LGA
MX553ENR125M000 TR	MX553E	NR1250	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	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 = 125MHz
6	VDD	PWR		Power Supply

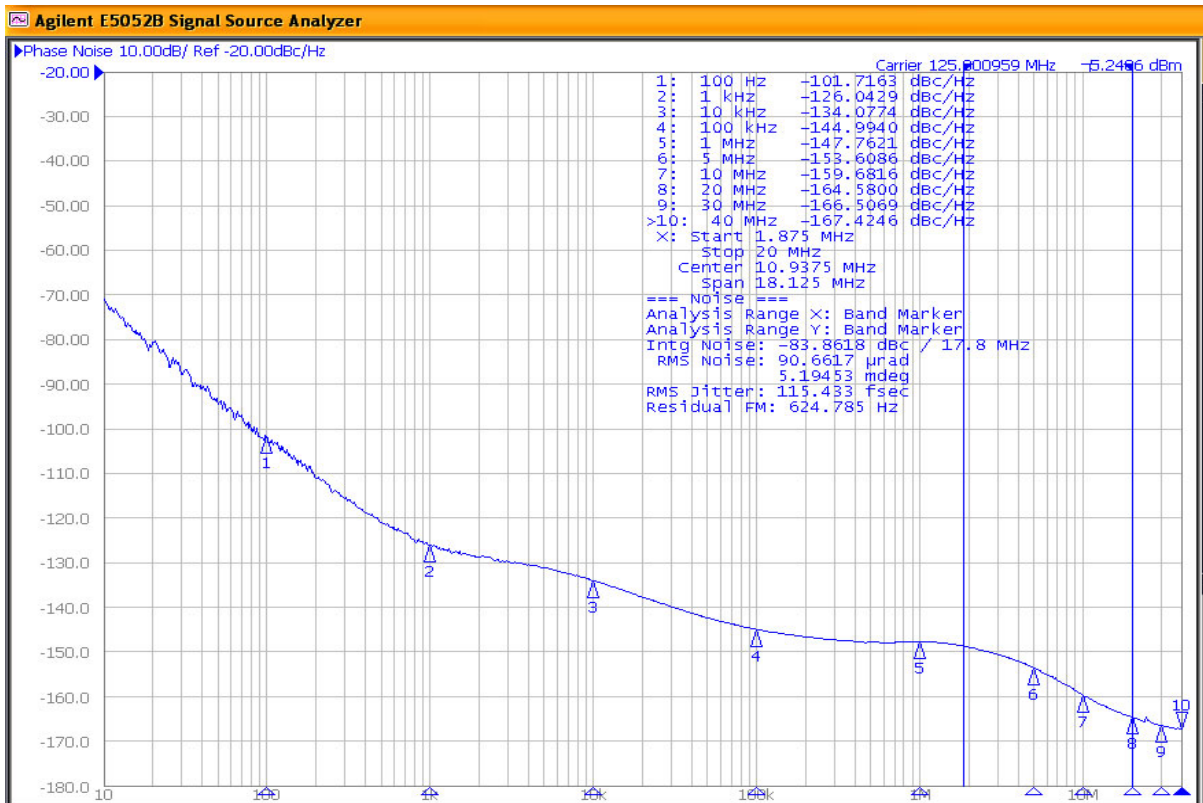


Figure 1. LVPECL Output 125MHz 1.875MHz-20MHz 115fs

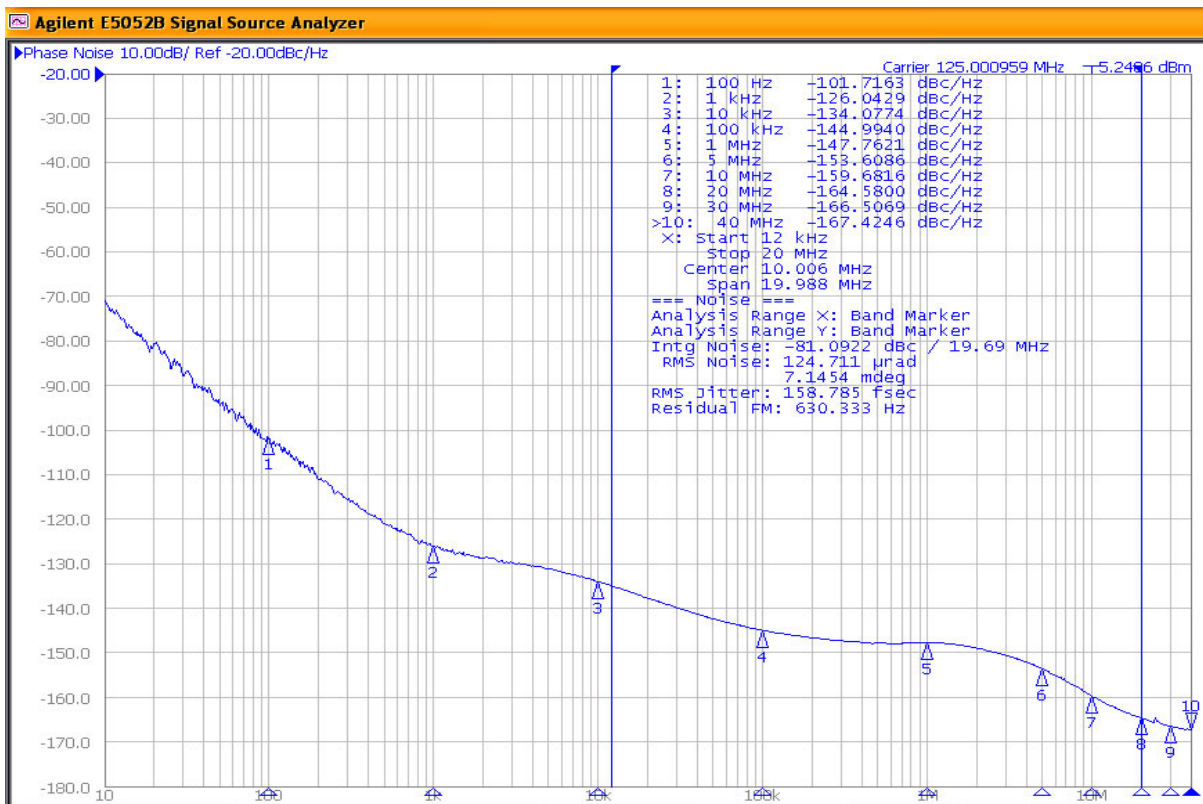
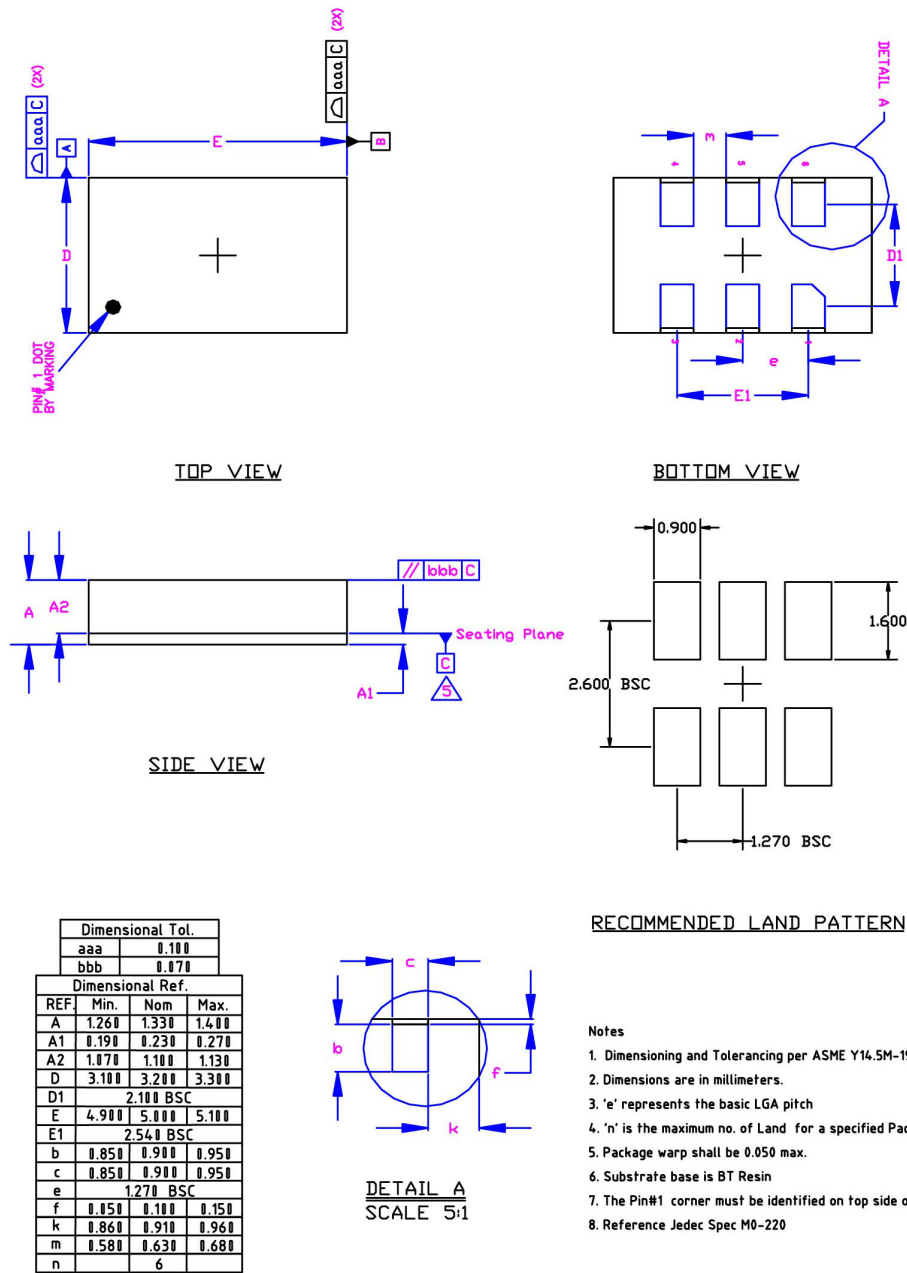


Figure 2. LVPECL Output 125MHz 12kHz-20MHz 159fs

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



**RECOMMENDED LAND PATTERN**

- 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 0.050 max.
  6. Substrate base is BT Resin
  7. The Pin#1 corner must be identified on top side only.
  8. Reference Jeduc Spec M0-220

**Note:**

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

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