



# MX575ANS100M000

## Ultra-Low Jitter 100MHz LVDS XO

### ClockWorks® FUSION

### General Description

The MX575ANS100M000 is an ultra-low phase jitter XO with LVDS output optimized for high line rate applications.

### Applications

- PCI-Express Gen 1/2/3/4
- 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 100 Ohms between Q and /Q.<sup>1</sup>

Symbol	Parameter	Condition	Min.	Typ.	Max.	Units
IDD	Supply Current				90	mA
F0	Center Frequency			100		MHz
	Frequency Stability	Note 2			±50	ppm
∅j	Phase Noise	Integration Range (12kHz to 20MHz) Integration Range (1.875MHz to 20MHz)		142 100		fsRMS
Tstart	Start-Up Time				20	ms
TR/TF	Rise/Fall time		100		400	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.

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[tcghelp@microchip.com](mailto:tcghelp@microchip.com)

### Features

- 100MHz LVDS
- Typical phase noise:
  - 100fs (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

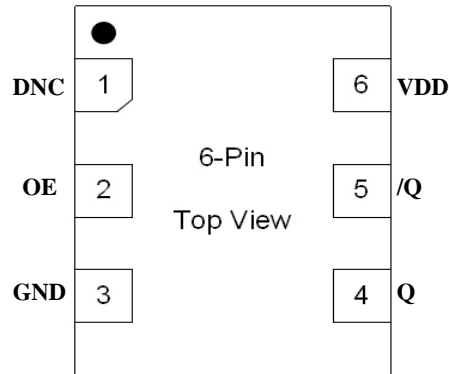
Supply Voltage (VIN).....	+2.375V to +3.63V
Ambient Temperature (TA).....	-40°C to +85°C

## Ordering Information

Ordering Part Number	Marking Line 1	Marking Line 3	Shipping	Package
MX575ANS100M000	MX575AN	S100M000	Tube	6-Pin 7mm x 5mm LGA
MX575ANS100M000-TR	MX575AN	S100M000	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	LVDS	Clock Output Frequency = 100MHz
6	VDD	PWR		Power Supply

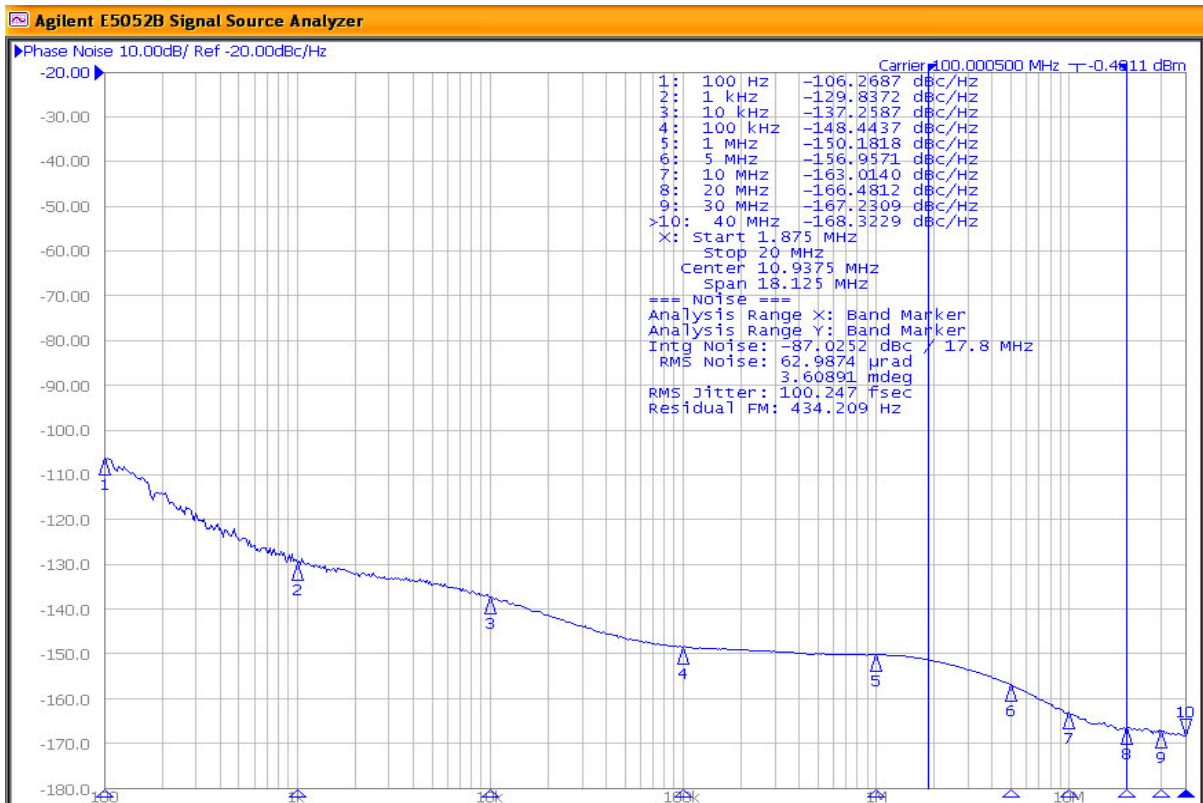


Figure 1. LVDS Output 100MHz 1.875MHz-20MHz 100fs

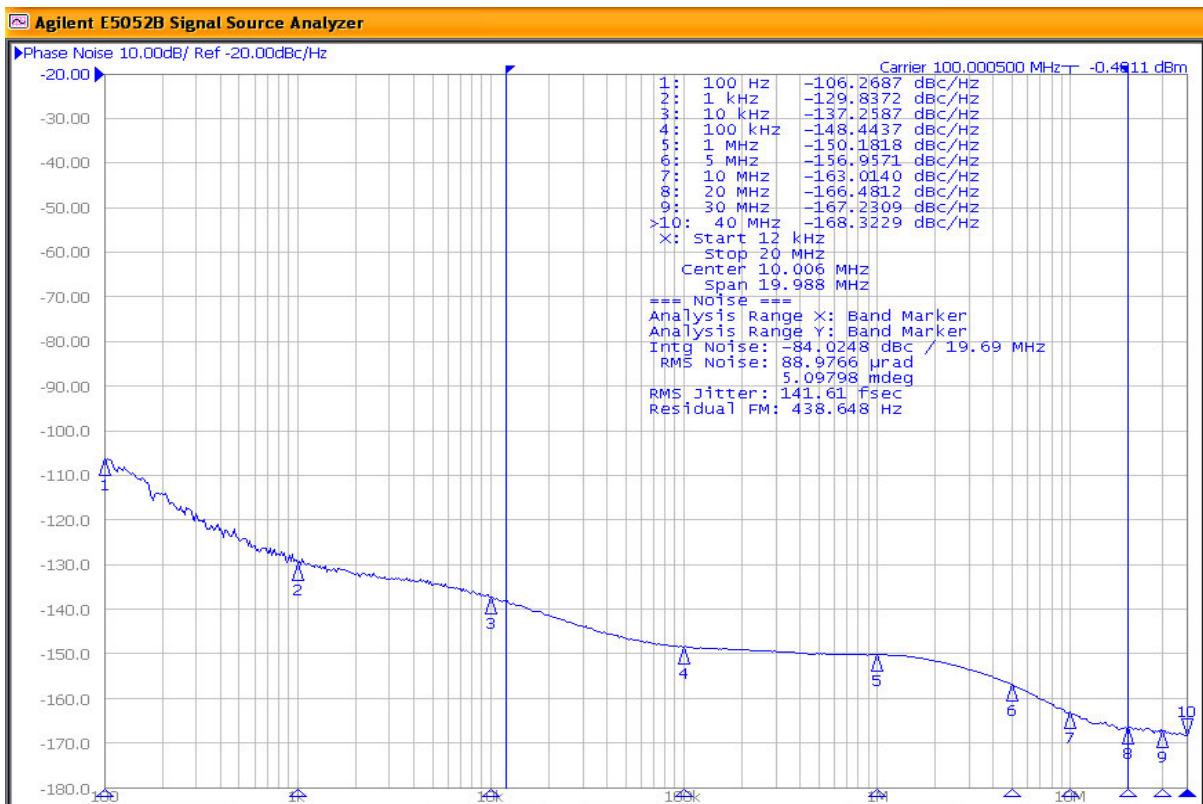


Figure 2. LVDS Output 100MHz 12kHz-20MHz 142fs

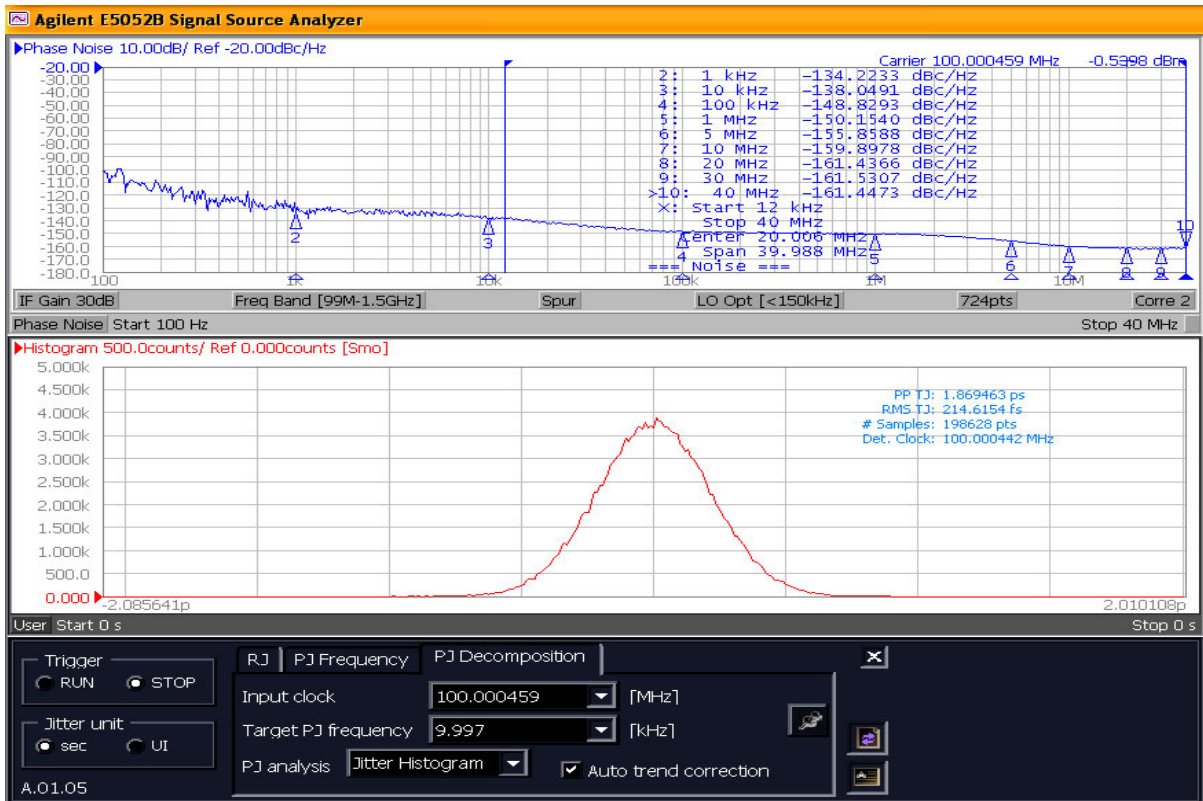
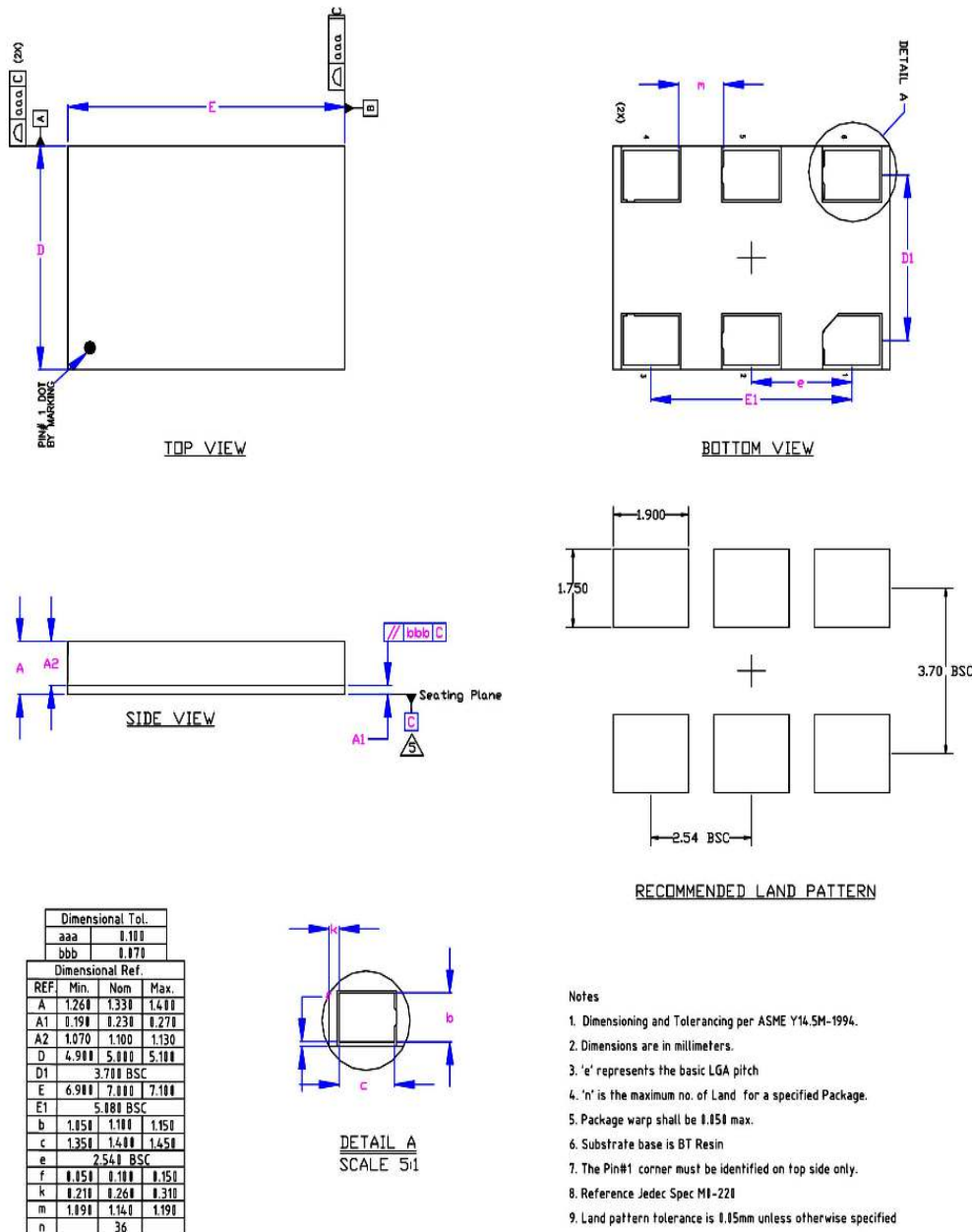


Figure 3. E5001A Period Jitter @ 100MHz LVDS, RMS TJ: 215fs, Pk-Pk TJ: 1.87ps

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



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

**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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