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## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: [info@chipsmall.com](mailto:info@chipsmall.com) Web: [www.chipsmall.com](http://www.chipsmall.com)

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





# MX554EBC20M0000

## Ultra-Low Jitter 20MHz LVCMOS XO

ClockWorks® FUSION

### General Description

The MX554EBC20M0000 is an ultra-low phase jitter XO with LVCMOS output optimized for high line rate applications.

### Features

- 20MHz LVCMOS
- Typical phase noise:
  - 83fs (Integration range: 1.875MHz-5MHz)
- $\pm 50$ ppm 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).....+4.6V  
Lead Temperature (soldering, 10s).....260°C  
Storage Temperature (T<sub>g</sub>).....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, output terminated with 50 Ohms to VDD/2.<sup>1</sup>

Symbol	Parameter	Condition	Min.	Typ.	Max.	Units
IDD	Supply Current				95	mA
F0	Center Frequency			20		MHz
	Frequency Stability	Note 2			$\pm 50$	ppm
$\phi_j$	Phase Noise	Integration Range (12kHz to 5MHz) Integration Range (1.875MHz to 5MHz)		136 83		fsRMS
Tstart	Start-Up Time				20	ms
TR/TF	Rise/Fall time		100		500	ps
	Duty Cycle		45		55	%
VIH	Input High Voltage	3.3V Operation	2		VDD + 0.3	V
VIL	Input Low Voltage	3.3V Operation	-0.3		0.8	V
VOH	Output High Voltage	LVCMOS output levels	VDD - 0.8			V
VOL	Output Low Voltage	LVCMOS output levels			0.6	V

#### Notes:

1. Guaranteed after thermal equilibrium.
2. Inclusive of initial accuracy, temperature drift, aging, shock, vibration.

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August 18, 2016  
MX554EB1-4235

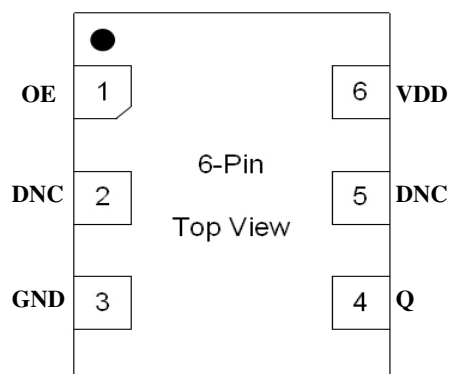
Revision 1.0  
[tcghelp@microchip.com](mailto:tcghelp@microchip.com)

## Ordering Information

Ordering Part Number	Marking Line 1	Marking Line 3	Shipping	Package
MX554EBC20M0000	MX554E	BC0200	Tube	6-Pin 5mm x 3.2mm LGA
MX554EBC20M0000 TR	MX554E	BC0200	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, DNC	O, SE	LVC MOS	Clock Output Frequency = 20MHz
6	VDD	PWR		Power Supply



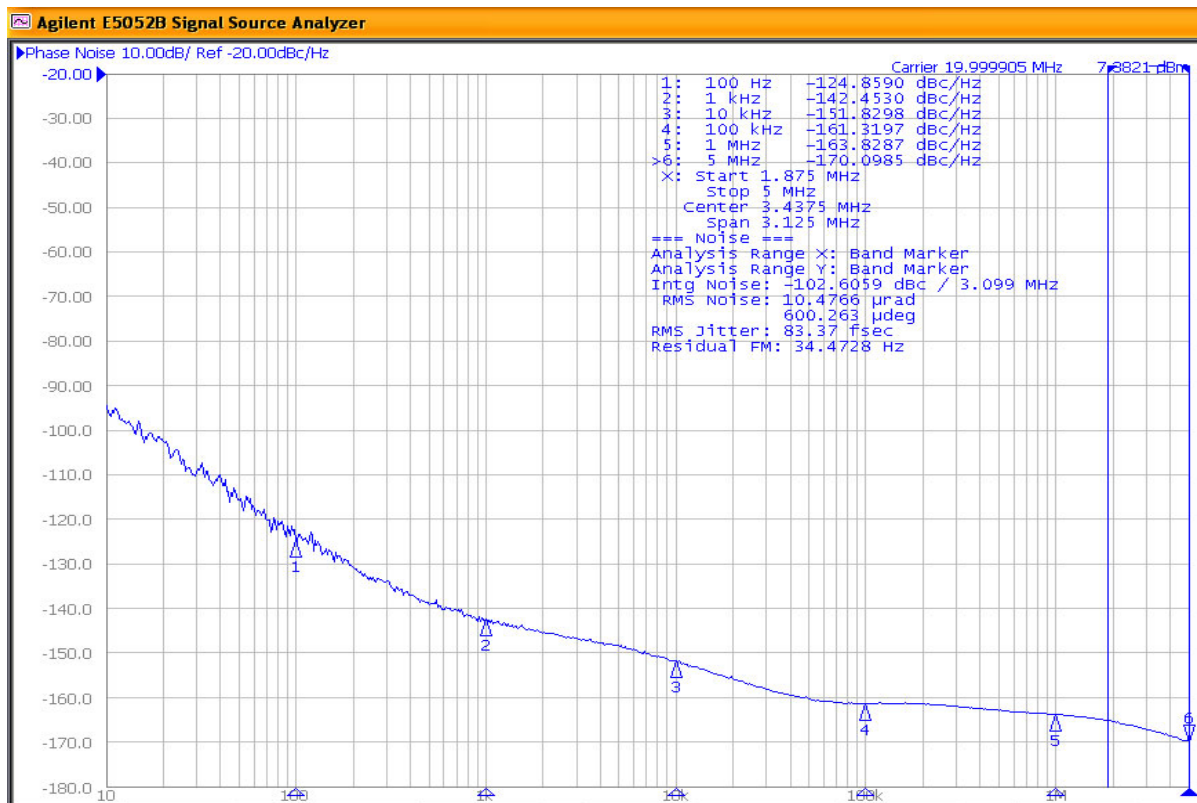


Figure 1. LVC MOS Output 20MHz 1.875MHz-5MHz 83fs

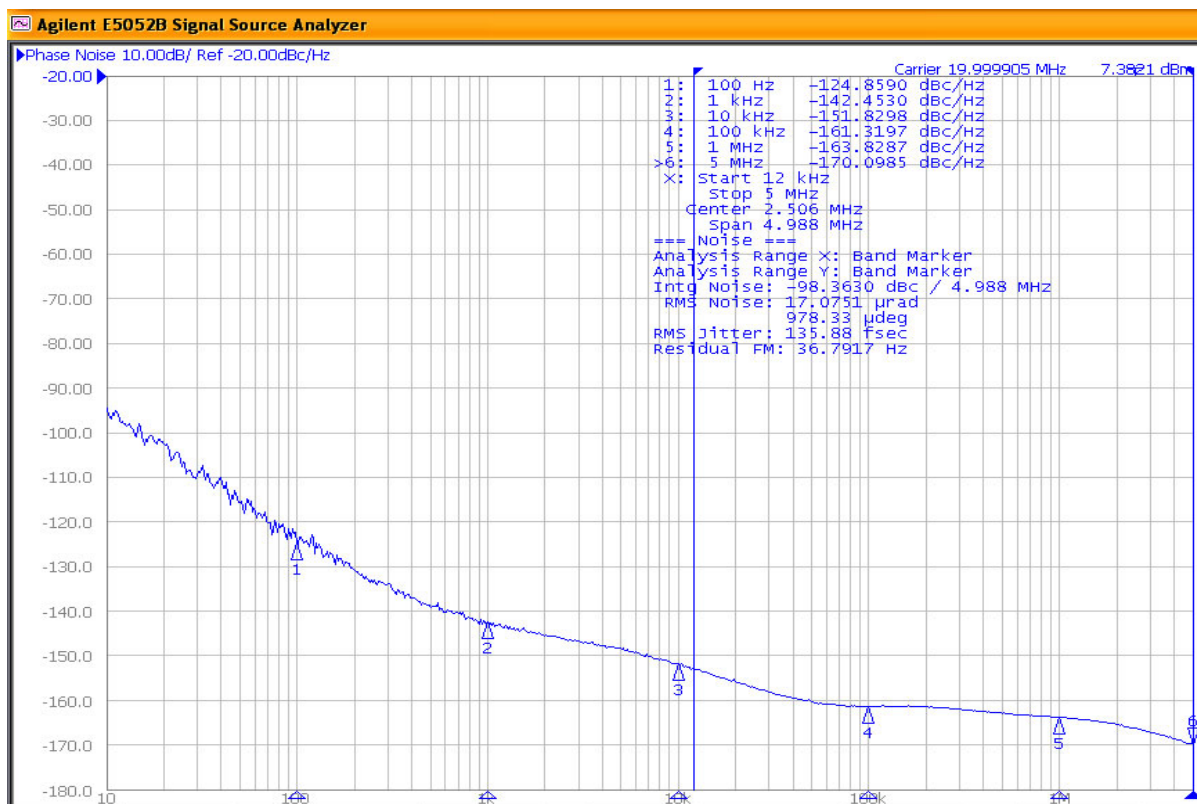
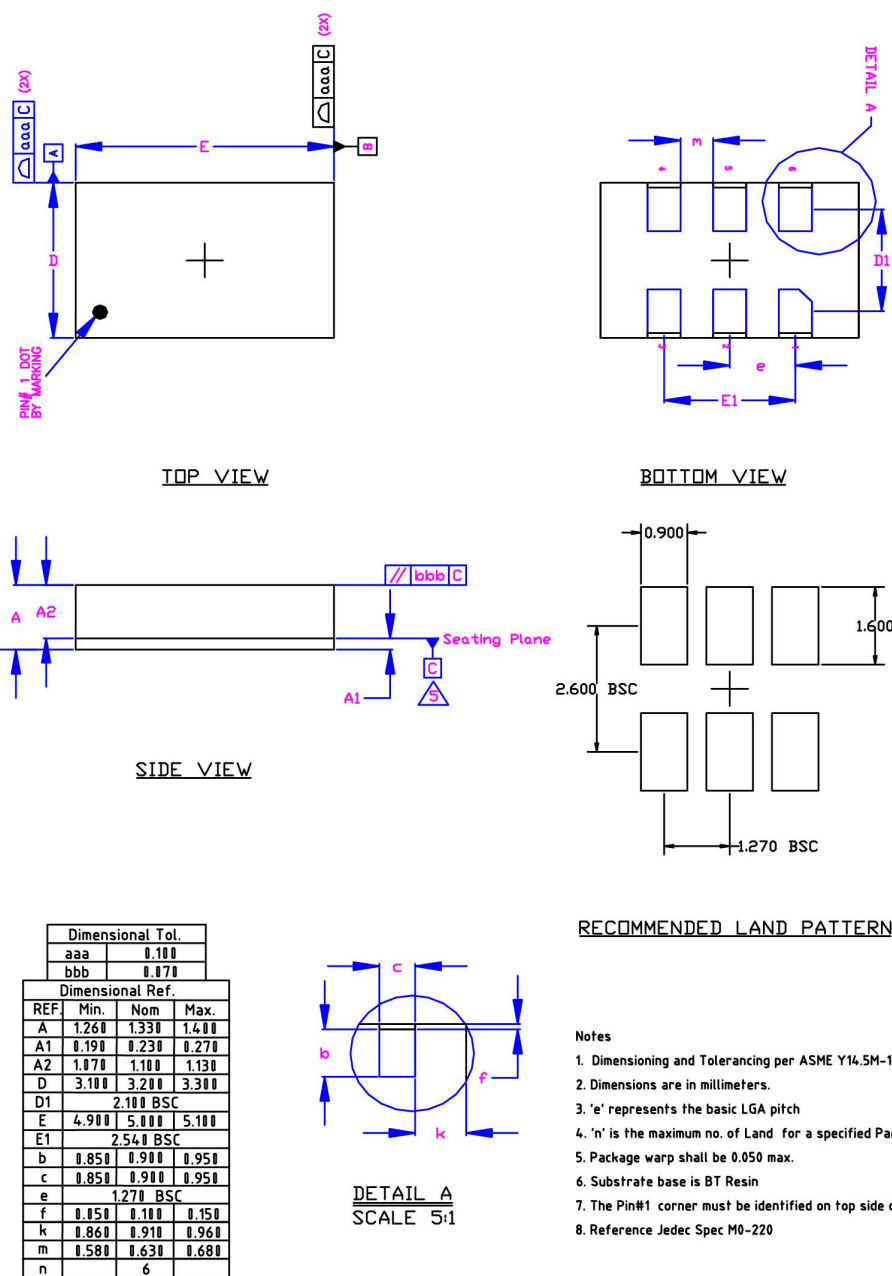


Figure 2. LVC MOS Output 20MHz 12kHz-5MHz 136fs

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



### 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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