

General Description

The MX574BBD322M265 is an ultra-low phase jitter XO with HCSL output optimized for high line rate applications.

Applications

- Optical communications
- Forward error correction (FEC) rates
- FPGA SERDES reference clock

Absolute Maximum Ratings¹

Supply Voltage (VIN).....	+4.6V
Lead Temperature (soldering, 10s).....	260°C
Case Temperature.....	115°C
Storage Temperature (T _S).....	-65°C to +125°C
ESD Machine Model.....	200V
ESD Rating (HBM).....	2kV

Electrical Characteristics

VDD = 2.5V ±5% or 3.3V ±10%, -40°C to +85°C, outputs terminated with 50 Ohms to VSS.³

Symbol	Parameter	Condition	Min.	Typ.	Max.	Units
IDD	Supply Current				95	mA
F0	Center Frequency			322.265625		MHz
	Frequency Stability	Note 4			±50	ppm
Øj	Phase Noise	Integration Range (12kHz to 20MHz) Integration Range (1.875MHz to 20MHz)		143 98		fsRMS
Tstart	Start-Up Time				10	ms
TR/TF	Rise/Fall time	20%-80%	150	300	450	ps
	Duty Cycle		48	50	52	%
VOH	Output High Voltage	HCSL output levels	660	700	850	mV
VOL	Output Low Voltage	HCSL output levels	-150	0	27	mV
VOVS	Max Output Including Overshoot				VOH + 0.3	V
VUDS	Min Output Including Undershoot		VOL - 0.3			V
VRB	Ringback Voltage		0.2			V
VOX	Absolute Crossing Point		250	350	550	mV
Vswing	Peak to Peak Output Voltage Swing		640	700	950	mV

Notes:

1. Exceeding the absolute maximum ratings may damage the device.
2. The device is not guaranteed to function outside its operating ratings.
3. Guaranteed after thermal equilibrium.
4. Inclusive of initial accuracy, temperature drift, aging, shock, vibration.

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December 06, 2017
MX574BB1-2111

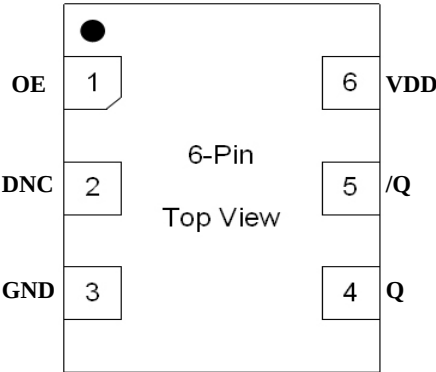
Revision 1.0
tcghelp@microchip.com

Ordering Information

Ordering Part Number	Marking Line 1	Marking Line 3	Shipping	Package
MX574BBD322M265	MX574BB	D322M265	Tube	6-Pin 7mm x 5mm LGA
MX574BBD322M265-TR	MX574BB	D322M265	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	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	HCSL	Clock Output Frequency = 322.265625MHz
6	VDD	PWR		Power Supply

Environmental Specifications

Thermal Shock	MIL-STD-883, Method 1011, Condition A
Moisture Resistance	MIL-STD-883, Method 1004
Mechanical Shock	MIL-STD-883, Method 2002, Condition C
Mechanical Vibration	MIL-STD-883, Method 2007, Condition B
Resistance to Soldering Heat	J-STD-020C, Table 5-2 Pb-free devices (except 2 cycles max)
Hazardous Substance	Pb-Free / RoHS / Green Compliant
Solderability	JESD22-B102-D Method 2 (Preconditioning E)
Terminal Strength	MIL-STD-883, Method 2004, Test Condition D
Gross Leak	MIL-STD-883, Method 1014, Condition C
Fine Leak	MIL-STD-883, Method 1014, Condition A2, R1=2x10-8 atm cc/s
Solvent Resistance	MIL-STD-202, Method 215

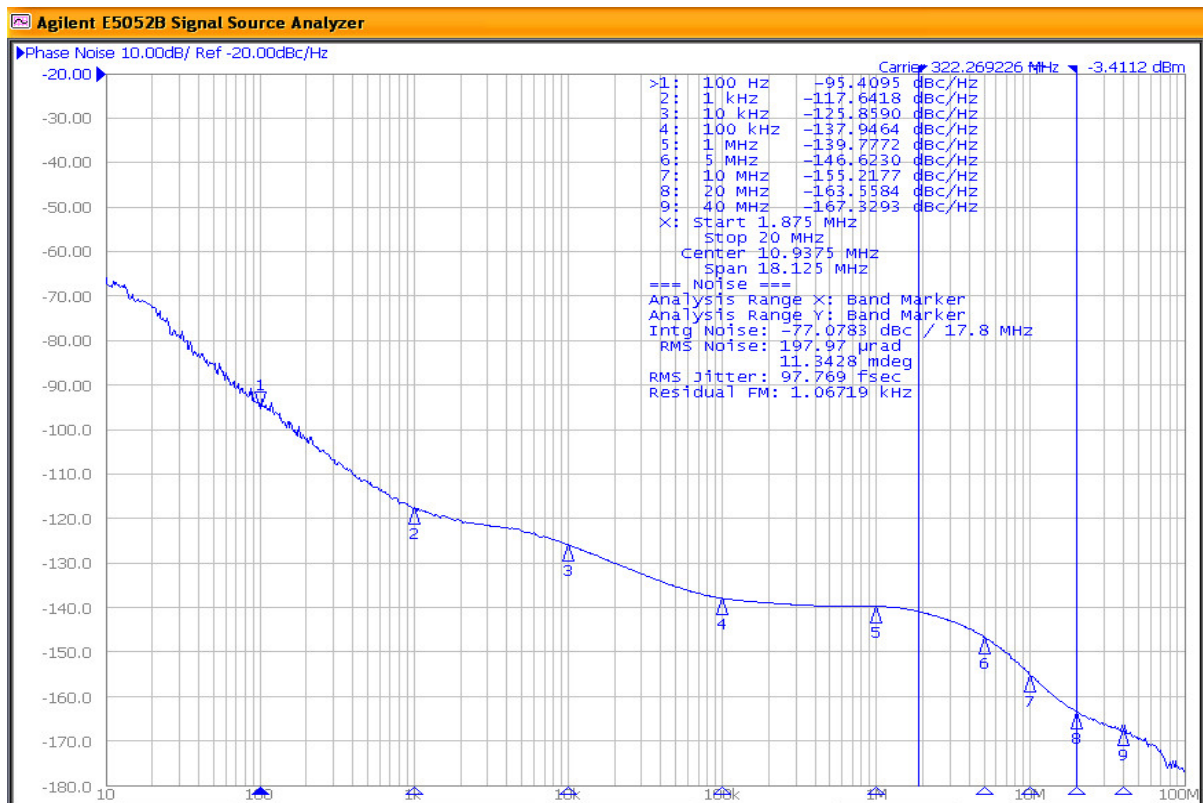


Figure 1. HCSL Output 322.265625MHz 1.875MHz-20MHz 98fs

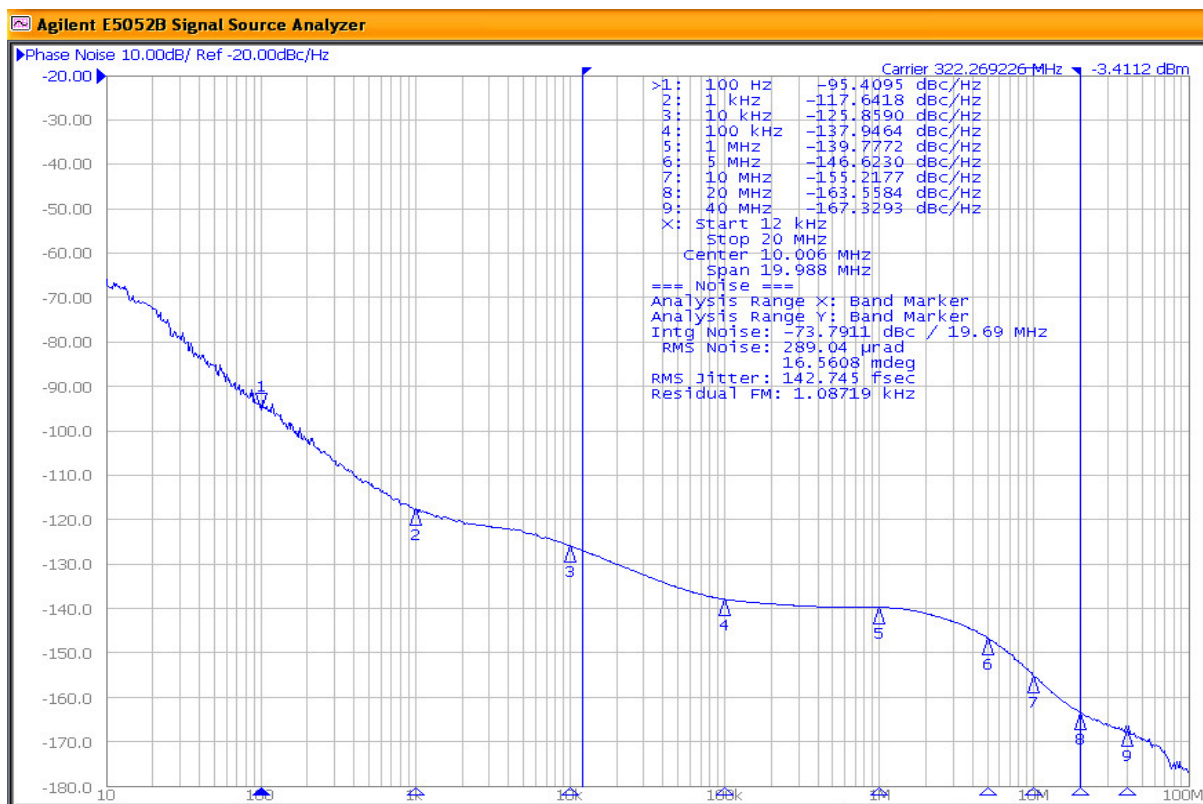
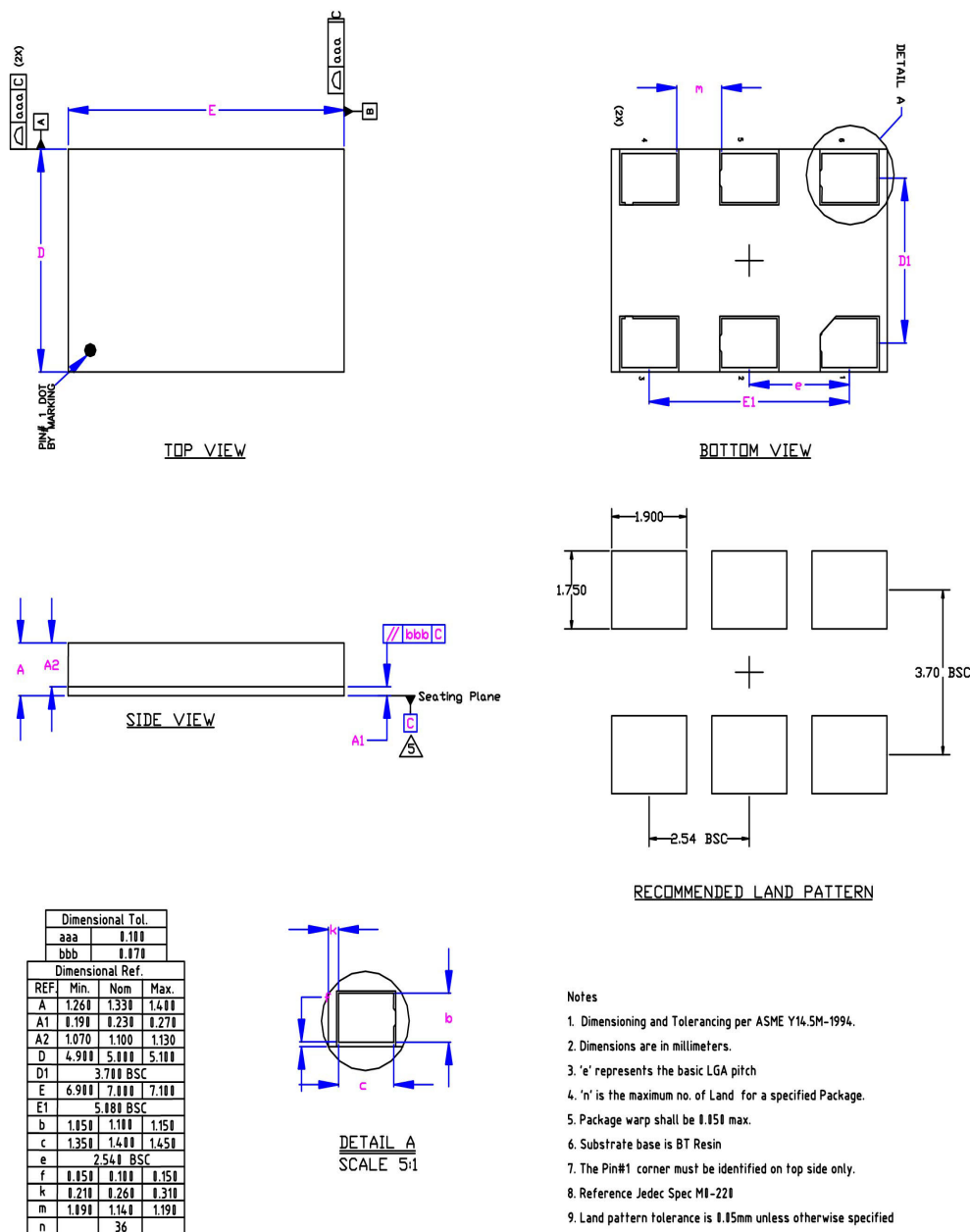


Figure 2. HCSL Output 322.265625MHz 12kHz-20MHz 143fs

Package Information and Recommended Land Pattern for 6-Pin LGA³



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.

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