



MX575ABJ100M000

Ultra-Low Jitter 100MHz HCSL XO

ClockWorks® FUSION

General Description

The MX575ABJ100M000 is an ultra-low phase jitter XO with HCSL 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 _s)..... | 125°C |
| 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.¹

| Symbol | Parameter | Condition | Min. | Typ. | Max. | Units |
|--------|-----------------------------------|---|-----------|-----------|-----------|-------|
| IDD | Supply Current | | | | 95 | 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) | | 166 97 | | 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. Guaranteed after thermal equilibrium.
2. Inclusive of initial accuracy, temperature drift, aging, shock, vibration.

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Features

- 100MHz HCSL
- Typical phase noise:
 - 97fs (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

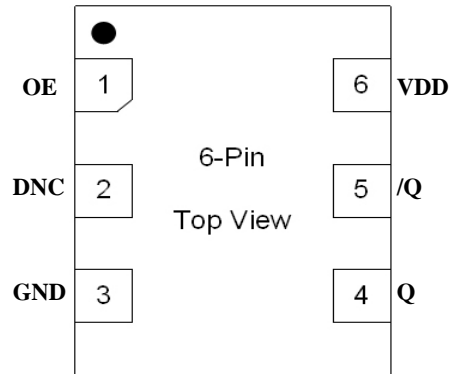
| | |
|-------------------------------|-------------------|
| Supply Voltage (VIN)..... | +2.375V to +3.63V |
| Ambient Temperature (TA)..... | -40°C to +85°C |

Ordering Information

| Ordering Part Number | Marking Line 1 | Marking Line 3 | Shipping | Package |
|----------------------|----------------|----------------|---------------|---------------------|
| MX575ABJ100M000 | MX575AB | J100M000 | Tube | 6-Pin 7mm x 5mm LGA |
| MX575ABJ100M000-TR | MX575AB | J100M000 | 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, 1 = Disabled, 0 = Enabled, 50k Ohms Pull-Down |
| 2 | DNC | | | Make no connection, leave floating. |
| 3 | GND | PWR | | Power Supply Ground |
| 4, 5 | Q, /Q | O, Diff | HCSL | Clock Output Frequency = 100MHz |
| 6 | VDD | PWR | | Power Supply |

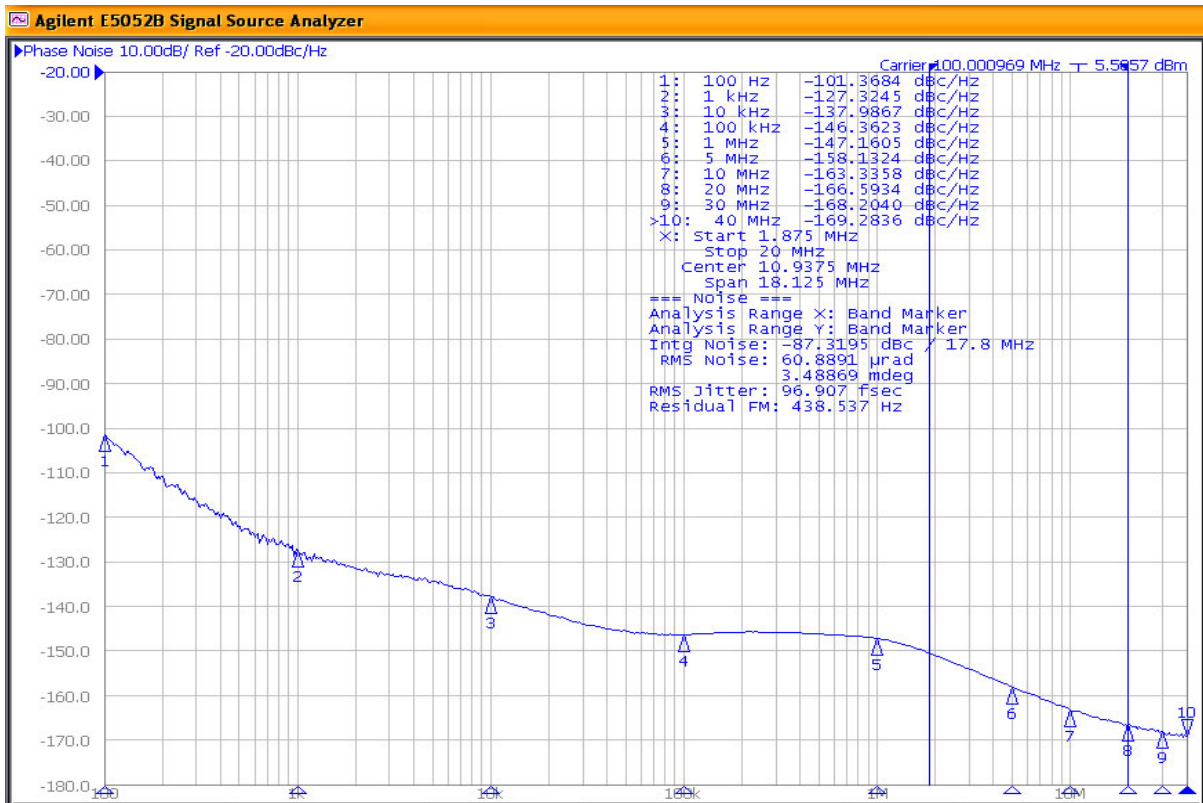


Figure 1. HCSL Output 100MHz 1.875MHz-20MHz 97fs

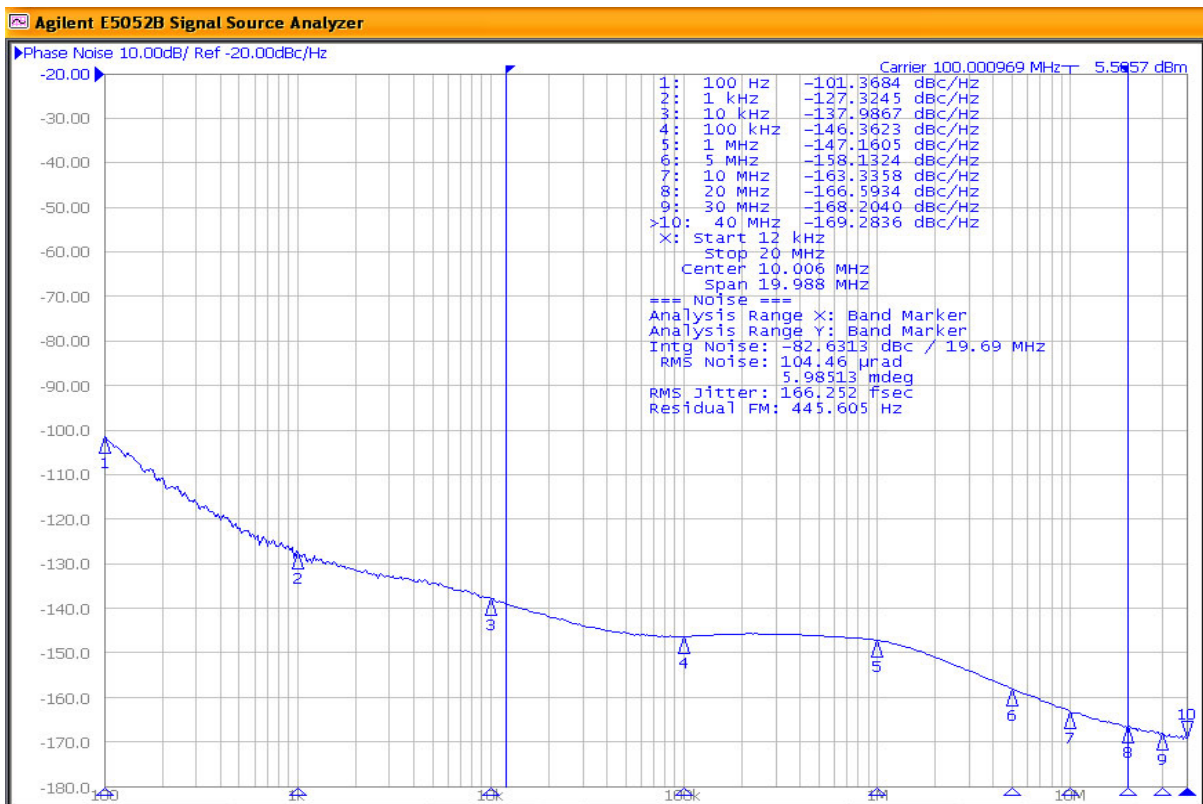
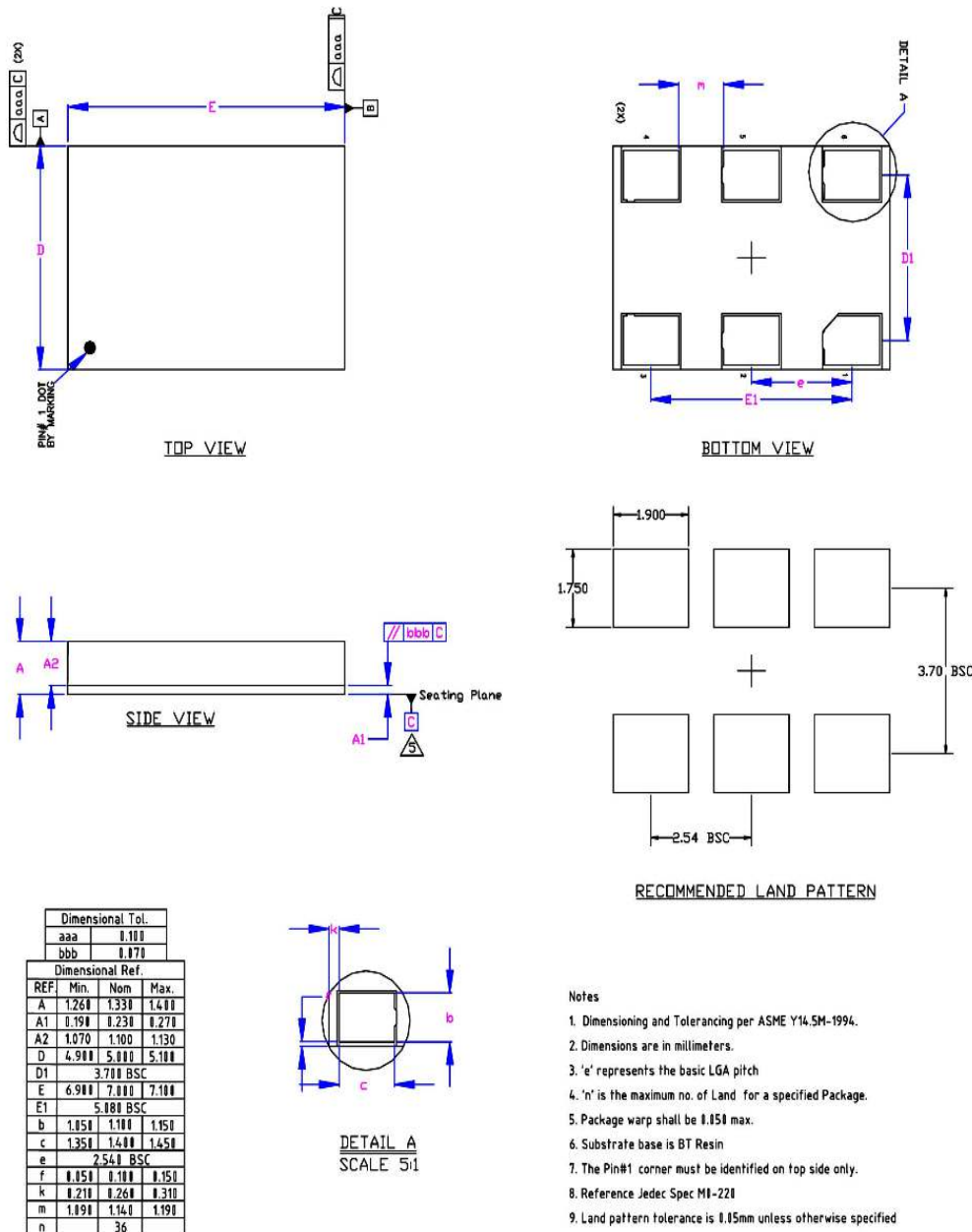


Figure 2. HCSL Output 100MHz 12kHz-20MHz 166fs

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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