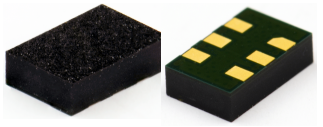
# Ultra-Low Phase Jitter LVDS SMD Clock Oscillator



5.0 x 3.2 x 1.4mm

ASFLMX-50.000MHz-5ABB

ESD Sensitive

RoHS/RoHS II compliant

**Moisture Sensitivity Level – MSL 3**

## FEATURES:

- 50MHz LVDS
- Typical phase noise: 121fs (Integration range: 1.875MHz-20MHz)
- ±50ppm total frequency stability over -40°C to +85°C temperature range
- Industry standard 6-Pin 5 x 3.2mm LGA package

## APPLICATIONS:

- Communications
- Backplane reference clock
- SERDES reference clock
- FPGA

## KEY ELECTRICAL SPECIFICATIONS

### Absolute Maximum Ratings

| Item | Minimum | Maximum | Unit | Condition |
|---|---|---|---|---|
| Supply Voltage | -0.3 | +3.6 | V | |
| Storage Temp. | -55 | +125 | °C | |
| Lead Temp.(soldering, 10s) | | +260 | °C | |
| ESD (HBM) | | 2 | kV | |

VDD = 2.375 - 3.63V, TA = -40°C to +85°C, outputs terminated with 100 Ohms between Q and /Q.(1)

| Parameters | | Minimum | Typical | Maximum | Units | Notes |
|---|---|---|---|---|---|---|
| Frequency | | | 50.000 | | MHz | |
| Operating Temperature ($T_A$) | | -40 | | +85 | °C | |
| Overall Frequency Stability (2) | | -50 | | +50 | ppm | |
| Supply Voltage ($V_{DD}$) | | +2.375 | | +3.63 | V | |
| Supply Current ($I_{DD}$) | | | | 90 | mA | |
| Output Logic Level | $V_{OH}$ | 1.248 | 1.375 | 1.602 | V | $V_{OH\ max}= V_{CM\ max}+1/2\ V_{OD\ max}$ |
| | $V_{OL}$ | 0.898 | 1.025 | 1.252 | V | $V_{OL\ min}= V_{CM\ min}-1/2\ V_{OD\ max}$ |
| Output Differential Voltage ($V_{OD}$) | | 247 | 350 | 454 | mV | |
| Common Mode Output voltage ($V_{CM}$) | | 1.125 | 1.2 | 1.375 | V | |
| Start-up Time | | | | 20 | ms | |
| Rise Time (Tr) | | 100 | | 400 | ps | RL=100Ω , CL=0pF 20% to 80% |
| Fall Time (Tf) | | 100 | | 400 | | |
| Duty Cycle | | 45 | | 55 | % | |
| Phase Noise | Integration Range: 12kHz to 20MHz | | 156 | | fsRMS | |
| | Integration Range: 1.875MHz to 20MHz | | 121 | | | |

**Notes:**

1. Guaranteed after thermal equilibrium
2. Inclusive of initial accuracy, temperature drift, aging, shock, vibration from -40°C to +85°C.

## PART IDENTIFICATION

ASFLMX-50.000MHz -5ABB - ☐

| Packing |
|---|
| Blank: Bulk or Tube |
| T: Tape & Reel (1k/reel) |

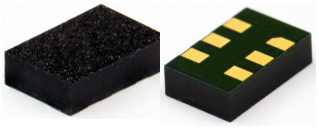


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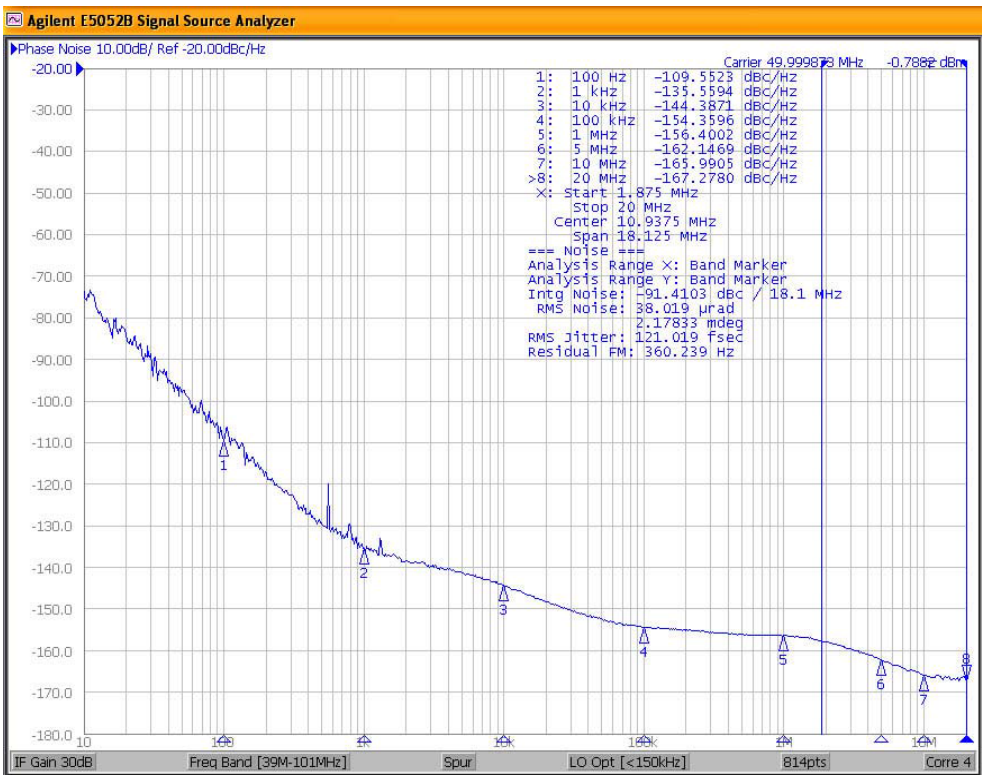
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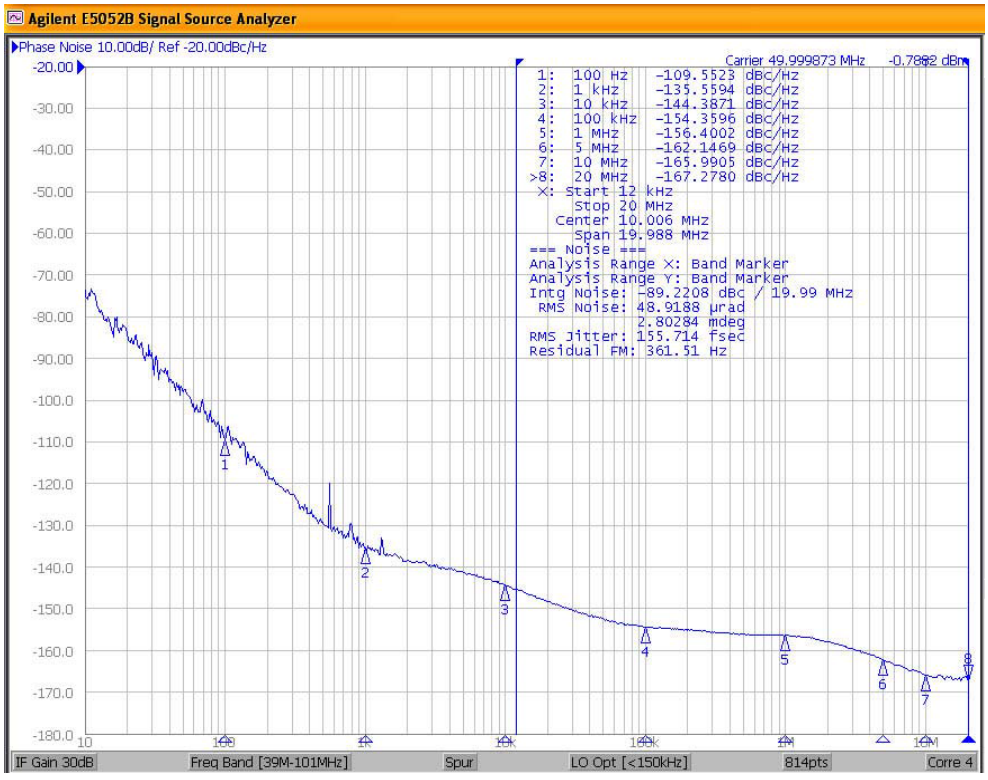
RoHS/RoHS II compliant



5.0 x 3.2 x 1.4mm

## TYPICAL PHASE NOISE

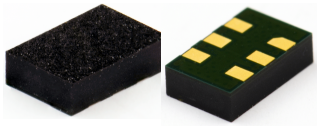


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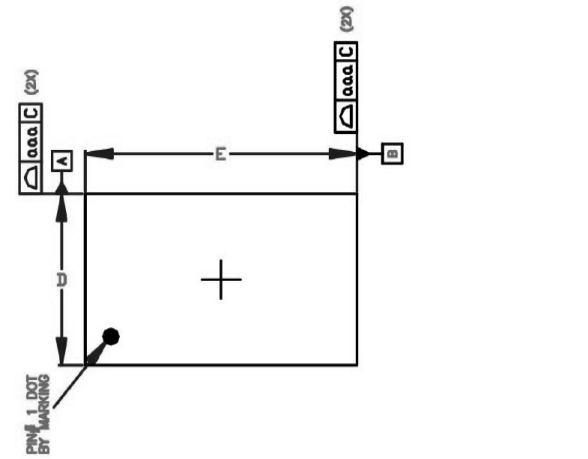
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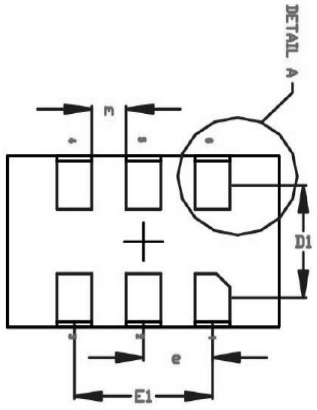


5.0 x 3.2 x 1.4mm

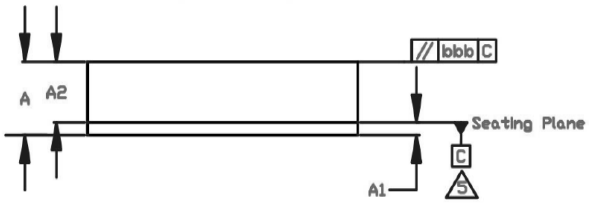
## OUTLINE DIMENSION



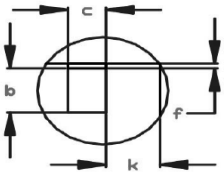

TOP VIEW




BOTTOM VIEW




SIDE VIEW

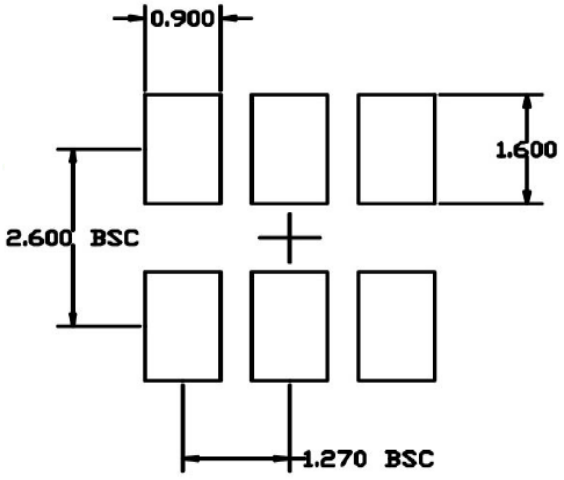



DETAIL A
SCALE 5:1

| Ref. | Min. | Nom. | Max. |
|---|---|---|---|
| A | 1.260 | 1.330 | 1.400 |
| A1 | 0.190 | 0.230 | 0.270 |
| A2 | 1.070 | 1.100 | 1.130 |
| D | 3.100 | 3.200 | 3.300 |
| D1 | | 2.100 BSC | |
| E | 4.900 | 5.000 | 5.100 |
| E1 | | 2.540 BSC | |
| b | 0.850 | 0.900 | 0.950 |
| c | 0.850 | 0.900 | 0.950 |
| e | | 1.270 BSC | |
| f | 0.050 | 0.100 | 0.150 |
| k | 0.860 | 0.910 | 0.960 |
| m | 0.580 | 0.630 | 0.680 |
| n | | 6 | |

| Dimensional Tolerance | |
|---|---|
| aaa | 0.100 |
| bbb | 0.070 |

### Recommended Land Pattern




**Dimensions: mm**

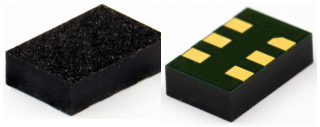



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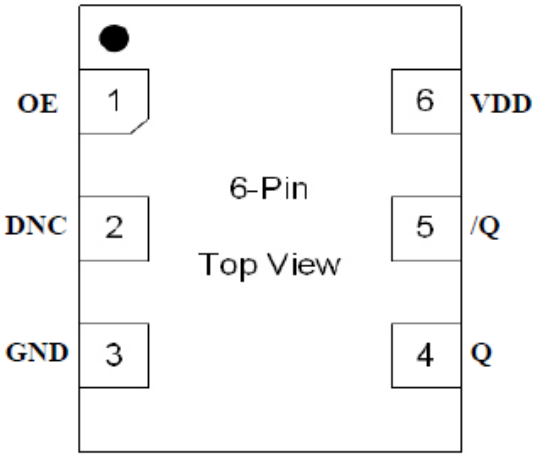
ASFLMX-50.000MHz-5ABB

RoHS/RoHS II compliant



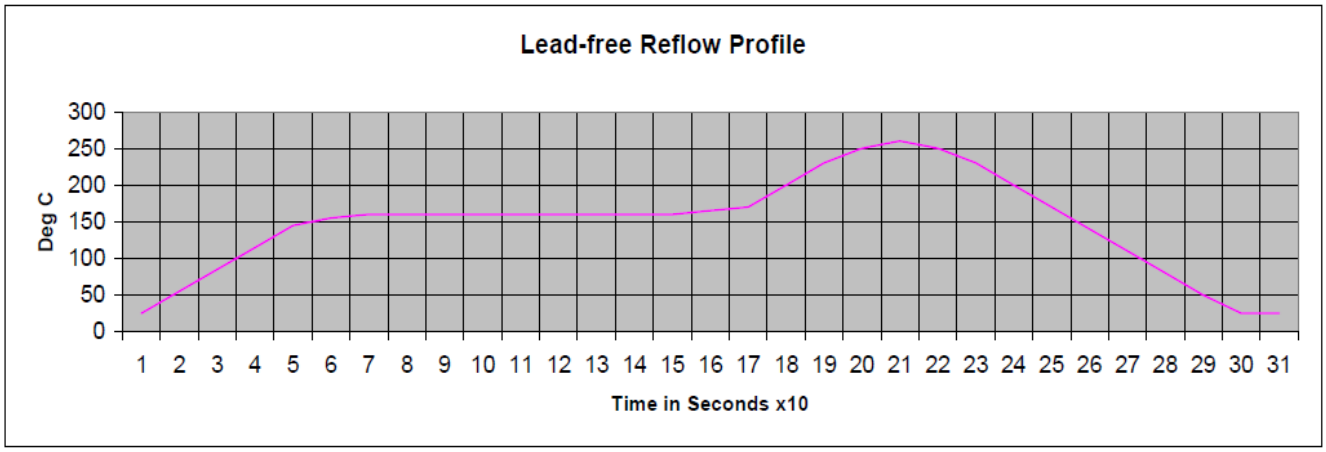
5.0 x 3.2 x 1.4mm

## PIN CONFIGURATION




| Pin # | Pin Name | Pin Type | Pin Level | Pin Function |
|---|---|---|---|---|
| 1 | OE | I, SE | LVCMOS | Output Enable, disables output to tri-state. 0 = Disabled, 1= Enabled, 50k Ω Pull-up |
| 2 | DNC | | | Make no connection, leave floating |
| 3 | GND | PWR | | Power Supply Ground |
| 4 | Q | O | LVDS | Clock Output |
| 5 | /Q | O | LVDS | Complimentary Clock Output |
| 6 | VDD | PWR | | Power Supply |

## REFLOW PROFILE

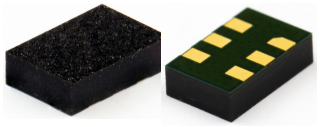



| Parameters | Specifications |
|---|---|
| Average Ramp-up Rate | 3℃ /second max. |
| Pre-Heat Temp 150 – 200℃ | 60 – 180 second |
| Temp > 217℃ | 60 – 150 second |
| Time @ Peak Temperature | 20 – 40 second |
| Peak Temperature | 260℃ + 0℃ / -5℃ |
| Ramp-down Rate | -6℃ / second max. |
| Time 25℃ to Peak Temp. | 8 minutes max. |

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ASFLMX-50.000MHz-5ABB

RoHS/RoHS II compliant

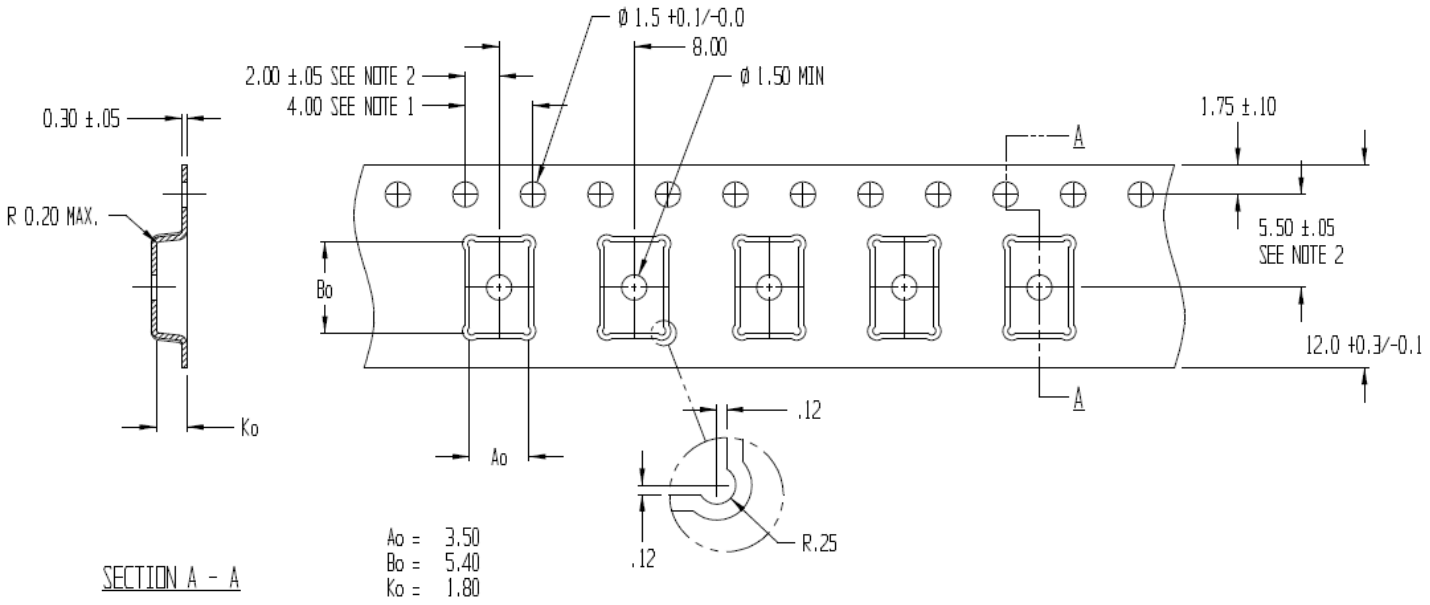


5.0 x 3.2 x 1.4mm

## TAPE & REEL

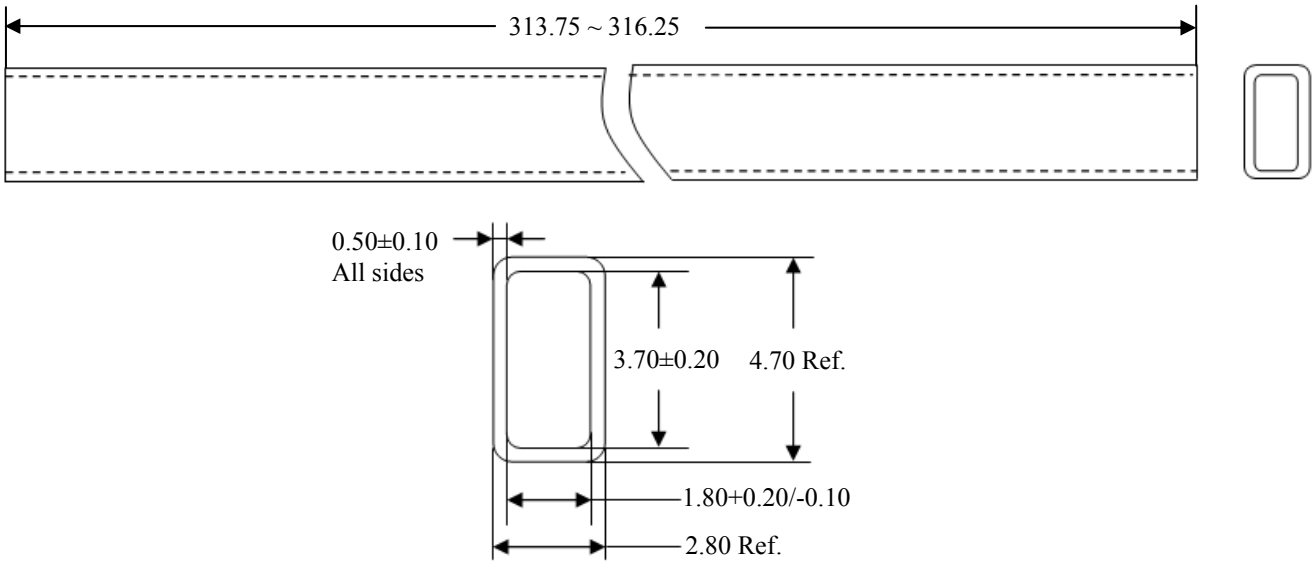
**T= Tape & Reel, 1000pcs/reel. Reel Size = 7-inch Reel**

**MSL-3 packaging applies to –T option.**




**Blank = Bulk or Tube (60pcs/tube)**

**MSL-3 packaging applies to MOQ=60 units (tube)**




**Dimensions: mm**

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