

# Ultra-Low Phase Jitter LVDS SMD Clock Oscillator

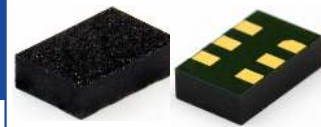
ASFLMX-200.000MHz-5ABB



ESD Sensitive



RoHS/RoHS II compliant



5.0 x 3.2 x 1.4mm

Moisture Sensitivity Level – MSL 3

## FEATURES:

- 200MHz LVDS
- Typical phase noise: -100fs (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.<sup>(1)</sup>

Parameters	Minimum	Typical	Maximum	Units	Notes	
Frequency	200.000			MHz		
Operating Temperature (T <sub>A</sub> )	-40		+85	°C		
Overall Frequency Stability <sup>(2)</sup>	-50		+50	ppm		
Supply Voltage (V <sub>DD</sub> )	+2.375		+3.63	V		
Supply Current (I <sub>DD</sub> )			90	mA		
Output Logic Level	V <sub>OH</sub>	1.248	1.375	1.602	V	V <sub>OH max</sub> = V <sub>CM max</sub> +1/2 V <sub>OD max</sub>
	V <sub>OL</sub>	0.898	1.025	1.252	V	V <sub>OL min</sub> = V <sub>CM min</sub> -1/2 V <sub>OD max</sub>
Output Differential Voltage (V <sub>OD</sub> )	247	350	454	mV		
Common Mode Output voltage (V <sub>CM</sub> )	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		220	fsRMS		
	Integration Range: 1.875MHz to 20MHz		100			

### 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-200.000MHz -5ABB -

### Packing

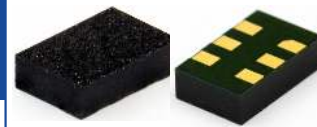
Blank: Bulk or Tube  
T: Tape & Reel (1k/reel)

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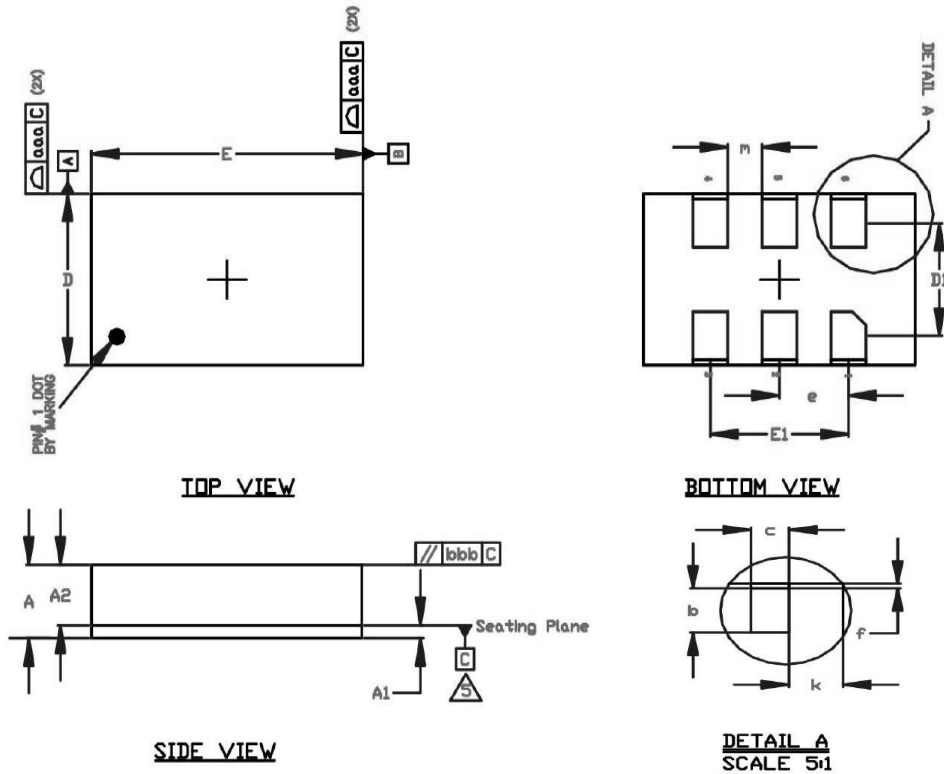


RoHS/RoHS II compliant



5.0 x 3.2 x 1.4mm

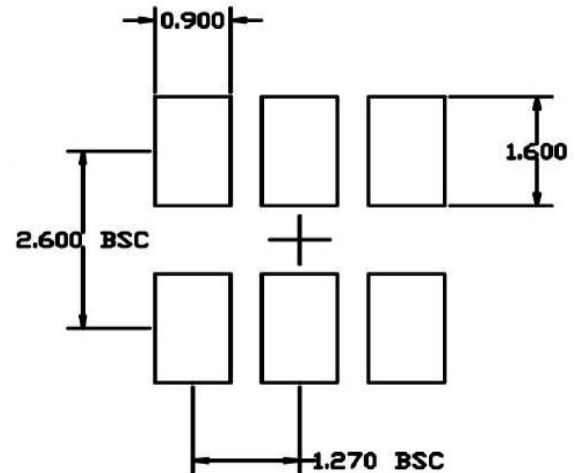
## OUTLINE DIMENSION



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



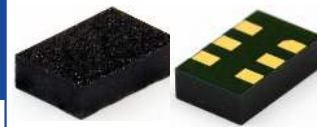
Dimensions: mm

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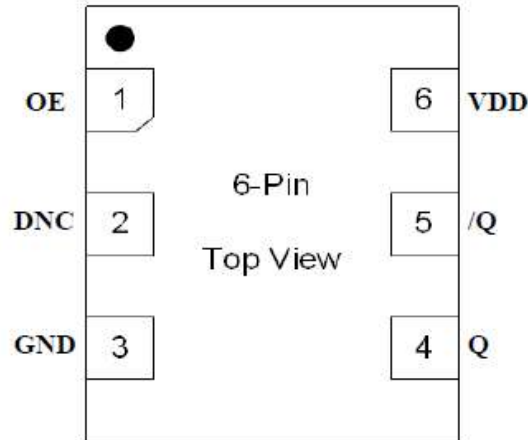


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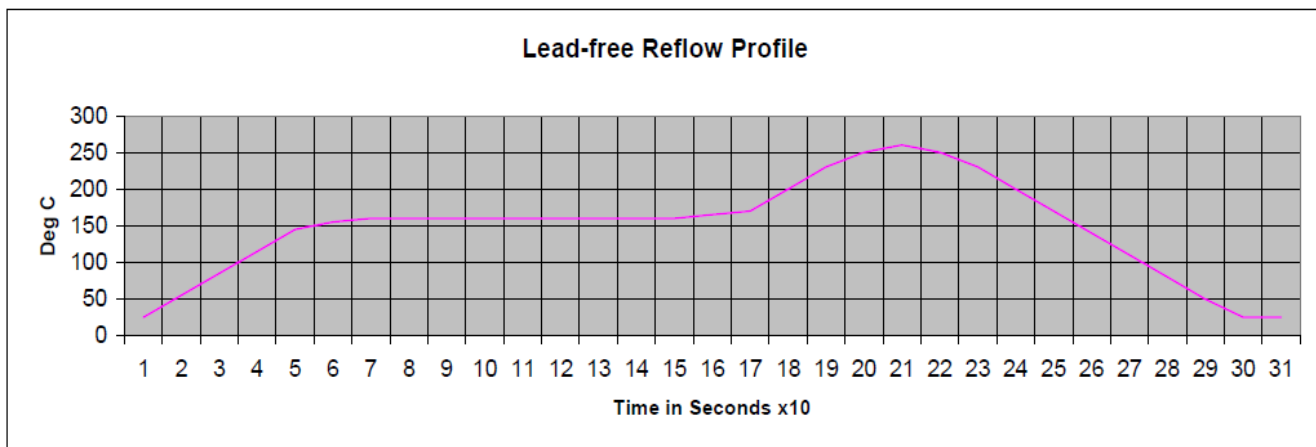
5.0 x 3.2 x 1.4mm

## PIN CONFIGURATION



Pin #	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 $\Omega$ 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



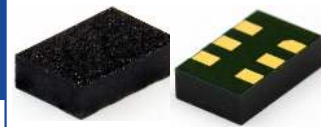
Parameters	Specifications
Average Ramp-up Rate	3°C /second max.
Pre-Heat Temp 150 – 200°C	60 – 180 second
Temp > 217°C	60 – 150 second
Time @ Peak Temperature	20 – 40 second
Peak Temperature	260°C + 0°C / -5°C
Ramp-down Rate	-6°C / second max.
Time 25°C to Peak Temp.	8 minutes max.

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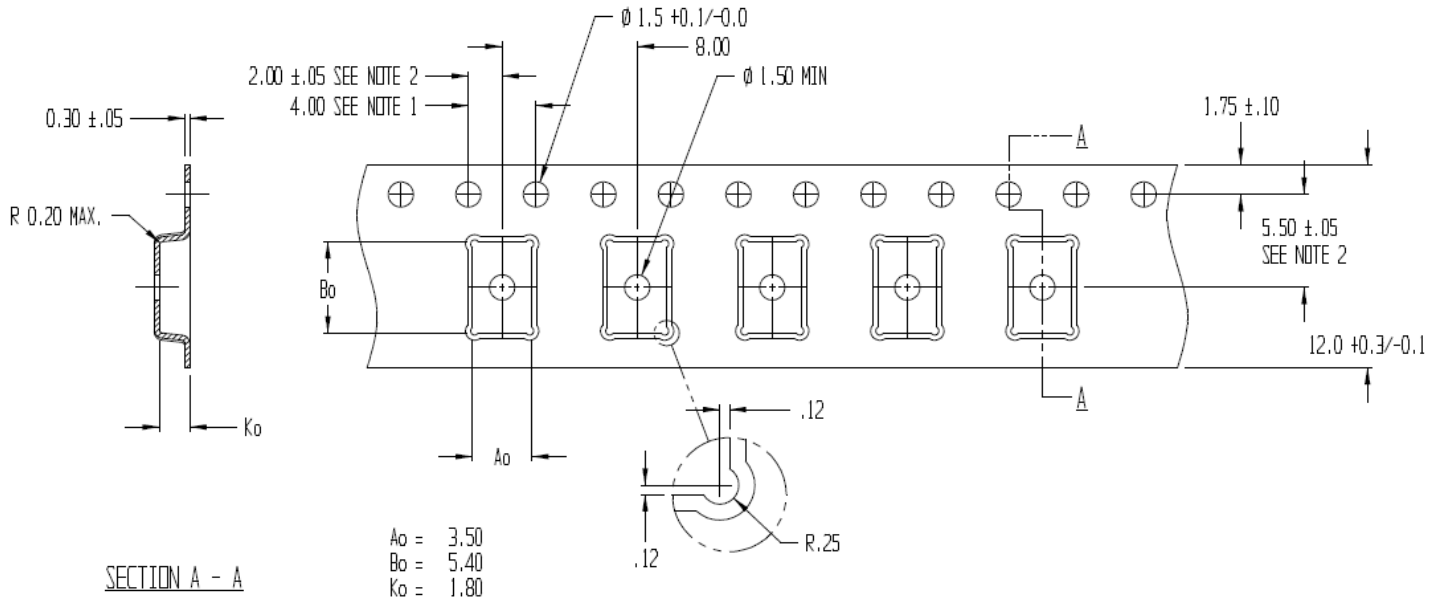
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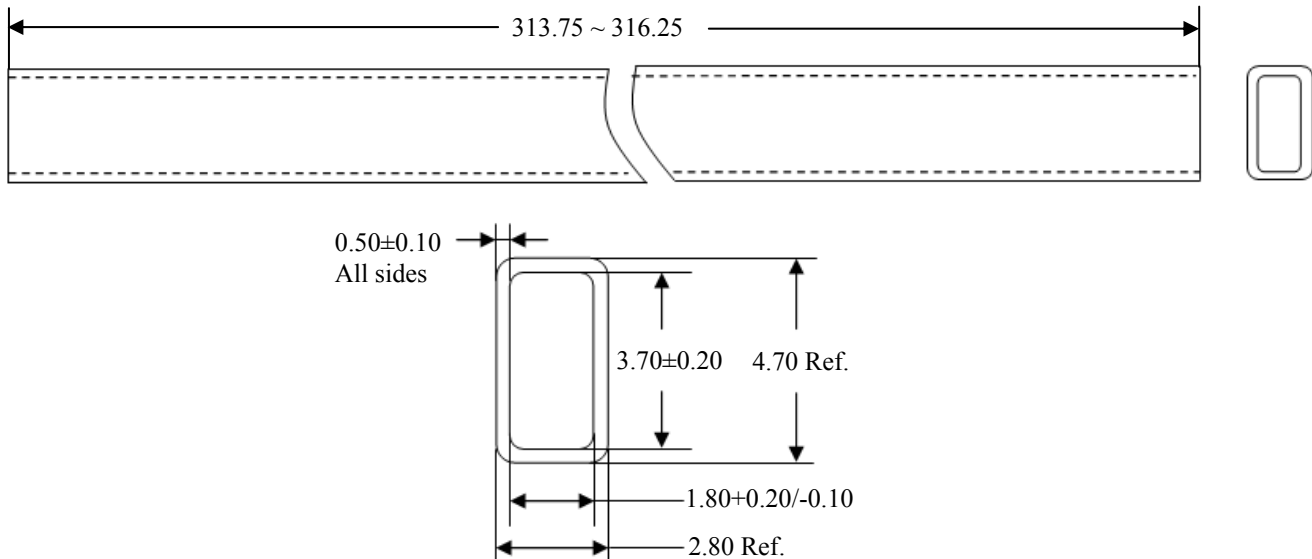
5.0 x 3.2 x 1.4mm

## 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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