

# Ultra-Low Phase Jitter HCSL SMD Clock Oscillator

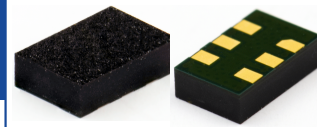
ASFLMX-100.000MHz-5ABD



ESD Sensitive



RoHS/RoHS II compliant



5.0 x 3.2 x 1.4mm

Moisture Sensitivity Level – MSL 3

## FEATURES:

- 100MHz HCSL
- Typical phase noise: 100fs (Integration range: 1.875MHz-20MHz)
- $\pm 50$ ppm total frequency stability over  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  temperature range
- Industry standard 6-Pin 5 x 3.2mm LGA package

## APPLICATIONS:

- PCI-Express
- Storage

## KEY ELECTRICAL SPECIFICATIONS

### Absolute Maximum Ratings

Item	Minimum	Maximum	Unit	Condition
Supply Voltage	-0.3	+3.6	V	
Storage Temp.	-55	+125	$^{\circ}\text{C}$	
Lead Temp.(soldering, 10s)		+260	$^{\circ}\text{C}$	
ESD (HBM)		2	kV	

VDD = 2.5V $\pm 5\%$  or 3.3V $\pm 10\%$ , TA =  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ , outputs terminated with 50 Ohms to VSS.<sup>(1)</sup>

Parameters	Minimum	Typical	Maximum	Units	Notes
Frequency	100.000			MHz	
Operating Temperature (T <sub>A</sub> )	-40		+85	$^{\circ}\text{C}$	
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> )			95	mA	
Output Logic Level	V <sub>OH</sub>	640	700	850	mV
	V <sub>OL</sub>	-150	0	27	mV
Max Output Including Overshoot (V <sub>OVS</sub> )			V <sub>OH</sub> +0.3	V	
Min Output Including Undershoot (V <sub>UDS</sub> )	V <sub>OL</sub> -0.3			V	
Ringback Voltage (V <sub>RB</sub> )	0.2			V	
Absolute Crossing Point (V <sub>OX</sub> )	250	450	550	mV	
Peak to Peak Output Voltage Swing (V <sub>swing</sub> )	640	700	950	mV	
Start-up Time			20	ms	
Rise Time (Tr)	150		450	ps	
Fall Time (Tf)	150		450		
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  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .

## PART IDENTIFICATION

ASFLMX-100.000MHz -5ABD -

### Packing

Blank: Bulk or Tube

T: Tape & Reel (1k/reel)

ABRACON IS  
ISO9001:2008  
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**ABRACON**<sup>®</sup>  
The Power of Linking Together LLC

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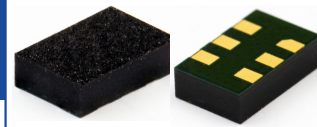
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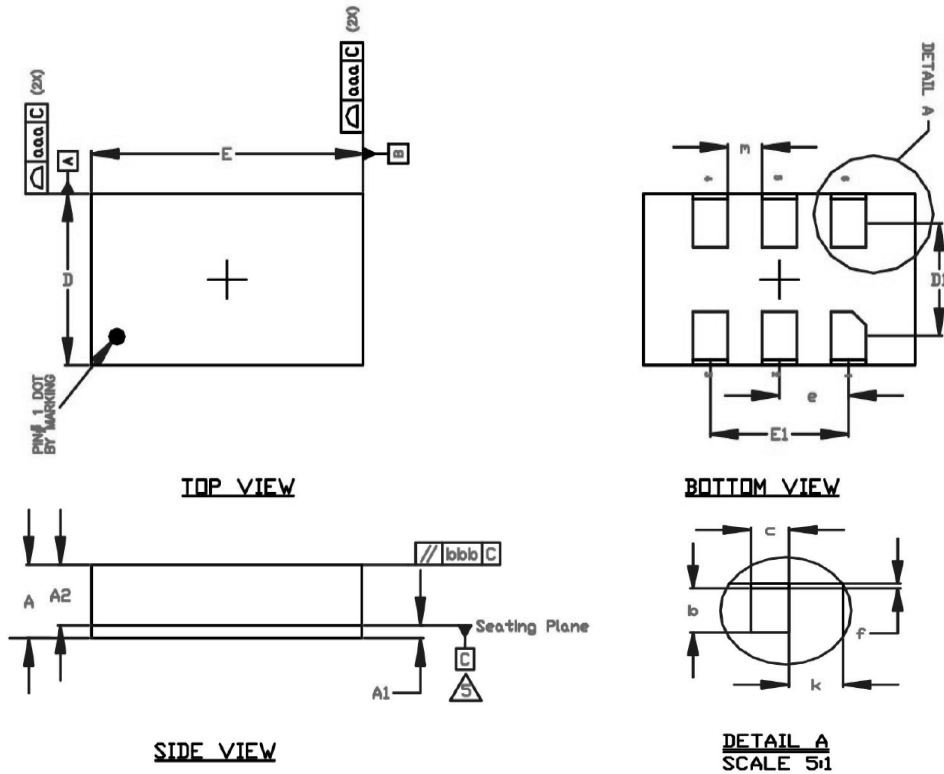


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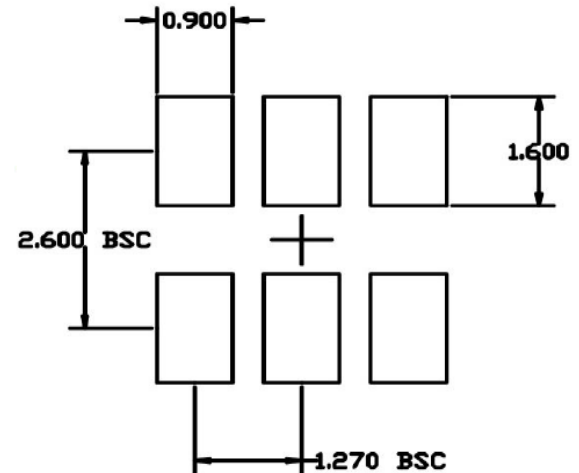
## OUTLINE DIMENSION



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



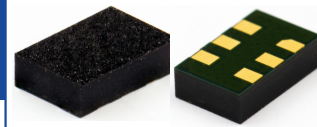
Dimensions: mm

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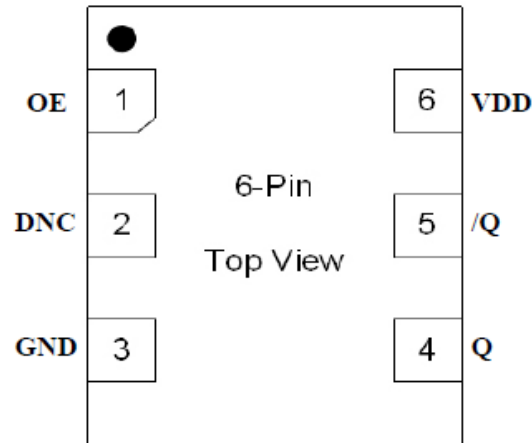


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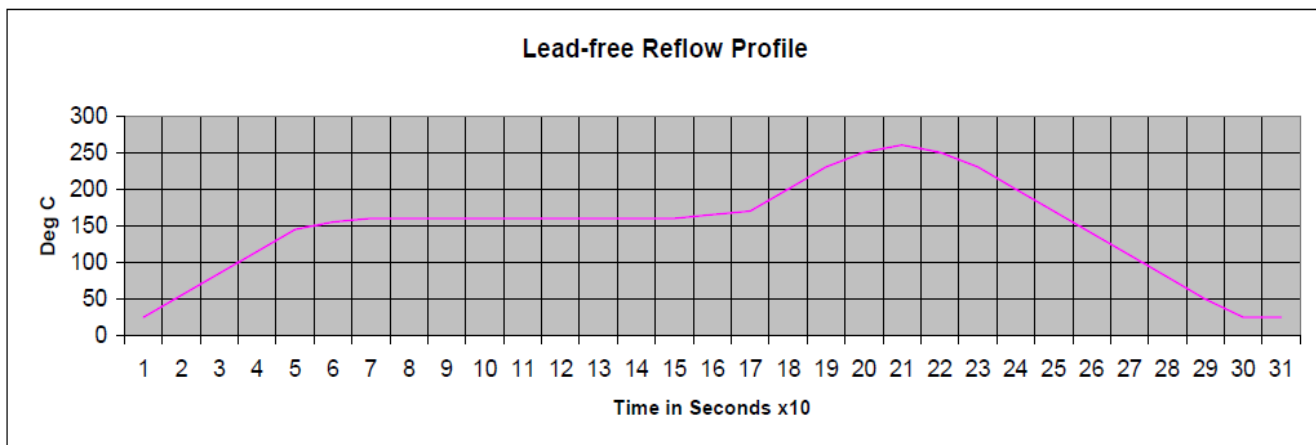
5.0 x 3.2 x 1.4mm

## 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	HCSL	Clock Output
5	/Q	O	HCSL	Complimentary Clock Output
6	VDD	PWR		Power Supply

## REFLOW PROFILE



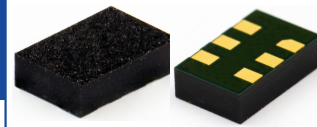
Parameters	Specifications
Average Ramp-up Rate	3°C /second max.
Pre-Heat Temp 150 – 200°C	60 – 180 second
Temp > 217°C	60 – 150 second
Time @ Peak Temperature	20 – 40 second
Peak Temperature	260°C + 0°C / -5°C
Ramp-down Rate	-6°C / second max.
Time 25°C to Peak Temp.	8 minutes max.

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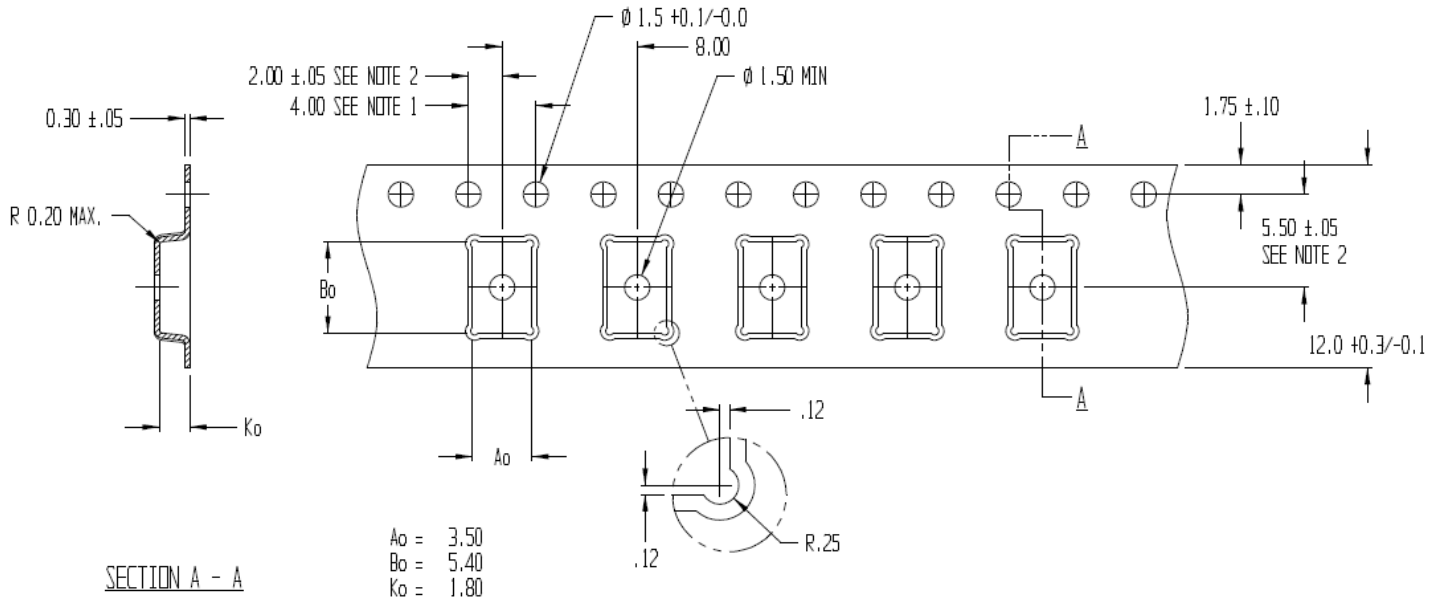
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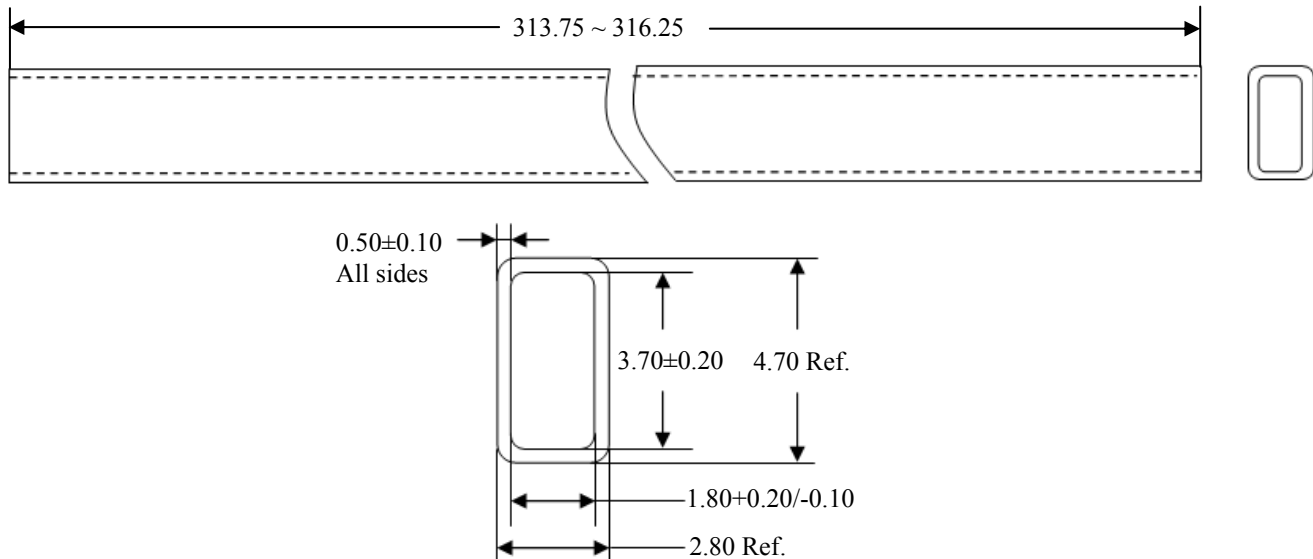
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## TAPE & REEL

**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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