

ULTRA MINIATURE PLASTIC PACKAGE

PURE SILICON™ CLOCK OSCILLATOR

ASEM



RoHS/RoHS II Compliant

ASEM



Life Size

3.2 x 2.5 x 0.85 mm

FEATURES:

- Ultra Miniature Pure Silicon™ Clock Oscillator
- MEMS Technology by Discera
- Low Power Consumption <10mA
- Exceptional Stability Over Temp. at -40 to +85°C.
- Available over Extended Operating Temperature
- Capable of surviving up-to 30kg Mechanical Shock (see note #1)
- Low Cost-Compact QFN Plastic Packaging
- Compact Package design

APPLICATIONS:

- CCD Clock for VTR Camera
- Equipment Connected to PCs
- Low Profile Equipment
- Lower Cost Crystal Oscillator Replacement
- Computers and Peripherals
- Portable Electronics (MP3 Players, Games)
- Consumer Electronics such as TV's, DVR's, etc.
- Vibrant, Shock-Prone & Humid Environments for Industrial Equipment
- Demanding Military & Automotive Electronics

MEMSPEED PRO II™
Clock Oscillator Programmer
Available Now!

[Click here for more details](#)

STANDARD SPECIFICATIONS:

Parameters		Minimum	Typical	Maximum	Units	Notes
Frequency Range:		1.0	-----	150	MHz	
Operating Temperature:		0	-----	+70	°C	See options
Storage Temperature:		-55	-----	+150	°C	
Overall Frequency Stability*:		-100	-----	+100	ppm	See options
Supply Voltage (Vdd):		+1.8 ~ +3.3			V	See options
Supply Current (no load):	1.0 to 39.9999MHz	-----	3	10	mA	No load RL=∞ T=25°C
	40.0 to 79.9999MHz	-----	4	10		
	80.0 to 124.9999MHz	-----	5	10		
	125.0 to 150MHz	-----	6	10		
Output Voltage:	V _{OH}	0.8*V _{dd}	-----	-----	V	15pF
	V _{OL}	-----	-----	0.2*V _{dd}		
Rise Time:	Tr	-----	1.3	2.0	ns	15pF; T=25°C 20%/80%*VDD
Fall Time:	Tf	-----	1.3	2.0		
Output Load:		15pF max / 10kΩ min.			pF	See options
Symmetry:		45	-----	55	%	@1/2Vdd
Startup Time:		-----	1.5	3.0	ms	
Disable Time:		-----	20	100	ns	
Disable Stand-by Current:		-----	-----	1	uA	
Tri-state Function (Stand-by) :		"1" (VIH≥0.75*Vdd) or Open: Oscillation "0" (VIH<0.25*Vdd) : Hi Z			V	
Cycle to cycle jitter:		-----	95	-----	ps	F=100MHz
Aging:		-5.0	-----	+5.0	ppm	First year

Absolute Maximum Ratings

Item	Minimum	Maximum	Unit	Condition
Supply Voltage	-0.3	+4.0	V	
Input Voltage	-0.3	Vdd+0.3	V	
Junction Temp.	-----	+150	°C	
Soldering Temp.	-----	+260	°C	40sec max
ESD			V	
HBM		2,000		
MM		200		
CDM		500		

Note #1: Typical Quartz Based Oscillators cannot survive Mechanical Shock exceeding 12kg

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ISO 9001:2008
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30332 Esperanza, Rancho Santa Margarita, California 92688
tel 949-546-8000 | fax 949-546-8001 | www.abracon.com

Revised: 10.21.13

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3.2 x 2.5 x 0.85 mm

➤ PART NUMBER FOR PROGRAMMED ORDERS (Quantity > 1,000pcs)

ASEM [] - [] MHz - [] [] - []

Supply Voltage
1: $3.3 \pm 0.3V$
2: $3.0 \pm 0.3V$
3: $2.5 \pm 0.2V$
4: $1.8 \pm 0.15V$
5: $2.8 \pm 0.2V$

Frequency in MHz
e.g. 14.3181 MHz (Maximum 4 digits after decimal)

Operating Temp.
Blank: $0^{\circ}C \sim +70^{\circ}C$
E: $-20^{\circ}C \sim +70^{\circ}C$
L: $-40^{\circ}C \sim +85^{\circ}C$

Overall Freq. Stability
Blank: $\pm 100ppm$
R: $\pm 25ppm$
C: $\pm 50ppm$

Packaging
Blank*: 110pcs / Tube
T: 1,000pcs / reel
T3: 3,000pcs / reel
T5: 5,000pcs / reel

* For Quick turn-around programmable orders < 1000pcs: Due to the immediate availability of stock and the qty of the order, the parts may be delivered as BULK: Cut Tape, Loose parts in Antistatic Bag or in Tube(s). The MOQ per the series will still apply for Tube packaging.

Un-Programmed Orders (Quantity < 1,000pcs)

Blank un-programmed oscillators and our low cost portable programmer are available for quick turn engineering requirements. Please call ABRACON or visit MEMSpeed Pro site <http://www.abracon.com/memspeedpro/memspeedpro.html> for more information.

ASEM - BLANK - [] [] - []

Operating Temp. Freq. Stability
EC: $\pm 50 ppm / -20^{\circ}C \text{ to } +70^{\circ}C$
ER: $\pm 25 ppm / -20^{\circ}C \text{ to } +70^{\circ}C$
LC: $\pm 50 ppm / -40^{\circ}C \text{ to } +85^{\circ}C$
LR: $\pm 25 ppm / -40^{\circ}C \text{ to } +85^{\circ}C$

Packaging
Blank: 110pcs / Tube
T: 1,000pcs / reel
T3: 3,000pcs / reel
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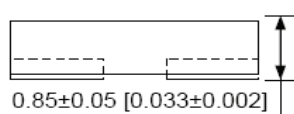
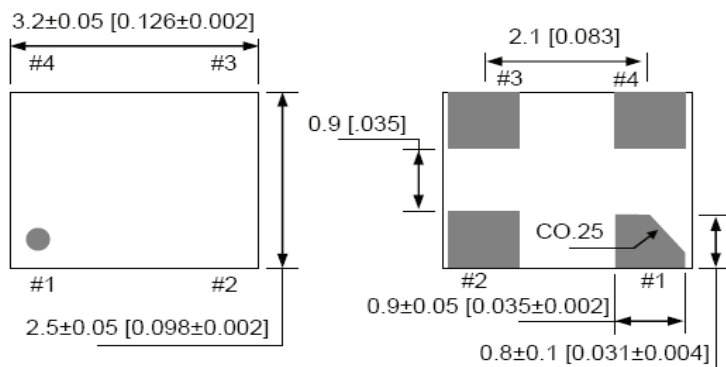
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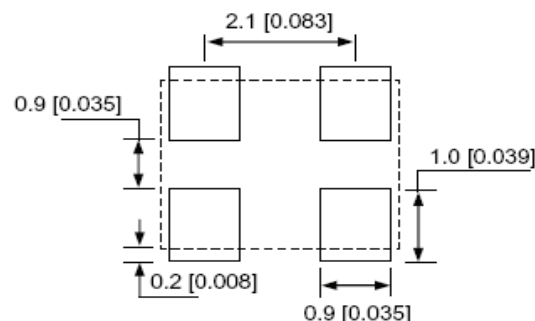
3.2 x 2.5 x 0.85 mm

OUTLINE DRAWING:



No.	Pin Terminal
1	Standby
2	GND
3	Output
4	VDD

Recommended Land Pattern

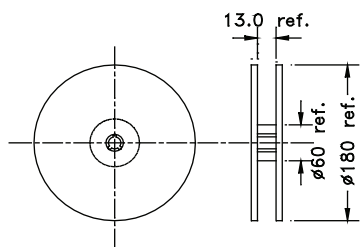
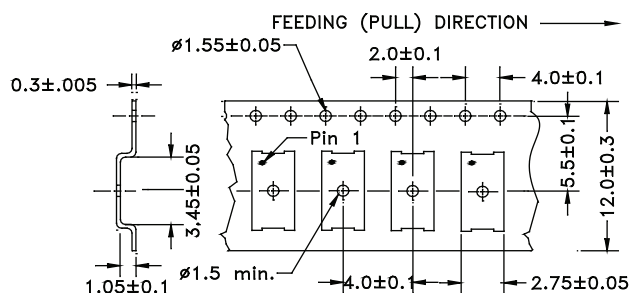


Note: Recommend using an approximately 0.01uF bypass capacitor between PIN 2 and 4.

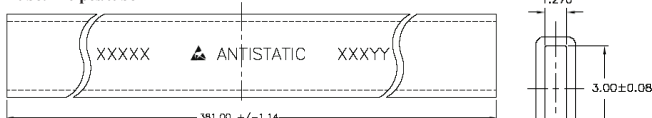
Dimension : mm (Inches)

TAPE & REEL: Tape and reel 1,000pcs/reel

REFLOW PROFILE:



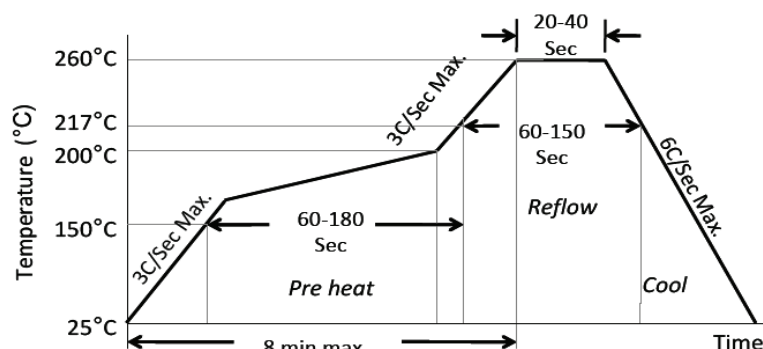
Tube: 110 pcs/tube



Unit orientation in tube:



Dimension : Inches (mm)



Ramp-Up Rate (200°C to Peak Temp)	3°C/Sec Max.
Preheat Time 150°C to 200°C	60-180 Sec
Time maintained above 217°C	60-150 Sec
Peak Temperature	255-260°C
Time within 5°C of actual Peak	20-40 Sec
Ramp-Down Rate	6°C/Sec Max.
Time 25°C to Peak Temperature	8 min Max.



Need a test socket for the ASEM Series? To view compatible **PRECISION TEST & BURN-IN SOCKETS** for these parts, [click here](#). P/N: AXS-3225-04-02

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