PLASTIC PACKAGE INDUSTRIAL GRADE ULTRA MINIATURE PURE SILICON™ CLOCK OSCILLATOR



Life Size

2.5 x 2.0 x 0.85 mm

ASDMB | **Moisture Sensitivity Level – MSL 1** | **RoHS/RoHS II Compliant**

FEATURES:

- Ultra Miniature Pure Silicon™ Clock Oscillator
- 2nd Generation MEMS Technology with reduced jitter by Discera
- Low Power Consumption <10mA
- Exceptional Stability +/- 10ppm Over Temp. at -40 to +105°C
- Compact QFN Plastic Packaging

APPLICATIONS:

- CCD Clock for VTR Camera
- Equipment Connected to PCs
- Low Profile Equipment
- Computers and Peripherals
- Lower Cost Crystal Oscillator Replacement
- 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

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*:	-50		+50	ppm	See options
Supply Voltage (Vdd):	+1.8 ~ +3.3			V	
Output Load:			15, 25, or 40	pF	See options
	10			kΩ	
Symmetry:	45		55	%	@1/2Vdd
Startup Time:		1.5	3.0	ms	
Disable Time:		20	100	ns	
Disable Stand-by Current:			15	uA	
Tri-state Function (Stand-by) :	"1" (VIH≥0.75*Vdd) or Open: Oscillation "0" (VIL<0.25*Vdd) : Hi Z			V	
Aging:	-5.0		+5.0	ppm	First year

Key Electrical Specifications – V_{dd}= 1.8V

Parameters		Minimum	Typical	Maximum	Units	Notes
Supply Current (no load):	1.0 to 39.9999MHz		5	15	mA	CL=0p
	40.0 to 79.9999MHz		6	15	mA	RL=∞
	80.0 to 124.9999MHz		7	15	mA	T=25°C
	125.0 to 150MHz		8	15	mA	(Standard CL: 15pF)
	1.0 to 39.9999MHz		6	15	mA	CL=0p
	40.0 to 79.9999MHz		7	15	mA	RL=∞
	80.0 to 124.9999MHz		8	15	mA	T=25°C
	125.0 to 150MHz		9	15	mA	(CL option: 25pF)
	1.0 to 39.9999MHz		7	15	mA	CL=0p
	40.0 to 79.9999MHz		8	15	mA	RL=∞
	80.0 to 124.9999MHz		9	15	mA	T=25°C
	125.0 to 150MHz		10	15	mA	(CL option: 40pF)
Output Voltage:	V_{OH}	0.8*V_{dd}			V	
	V_{OL}			0.2*V_{dd}	V	CL=15, 25, 40pF
Rise Time: Fall Time:	Tr		1.8	3.0	ns	CL=15pF; T=25°C
	Tf		1.0	3.0	ns	20%/80%*VDD
	Tr		1.5	3.0	ns	CL=25pF; T=25°C
	Tf		1.2	3.0	ns	20%/80%*VDD
	Tr		1.4	3.0	ns	CL=40pF; T=25°C
	Tf		1.1	3.0	ns	20%/80%*VDD
Cycle to Cycle Jitter:			60		ps	F=100MHz
Period Jitter RMS:			10		ps	F=100MHz

ABRACON LLC
The Power of Linking Together

5101 Hidden Creek Ln Spicewood TX 78669
Phone: 512-371-6159 | Fax: 512-351-8858
For terms and conditions of sales, please visit: www.abracon.com

REVISED: 12.6.2017

ABRACON IS ISO9001-2008 CERTIFIED

PLASTIC PACKAGE INDUSTRIAL GRADE ULTRA MINIATURE PURE SILICON™ CLOCK OSCILLATOR

ASDMB

RoHS/RoHS II Compliant



Life Size

2.5 x 2.0 x 0.85 mm

Key Electrical Specifications –V_{dd}= 2.5V

Parameters			Minimum	Typical	Maximum	Units	Notes
Supply Current (no load):	1.0 to 39.9999MHz			6	15	mA	CL=0pF RL=∞ T=25°C (Standard CL: 15pF)
	40.0 to 79.9999MHz			7	15	mA	
	80.0 to 124.9999MHz			8	15	mA	
	125.0 to 150MHz			9	15	mA	
	1.0 to 39.9999MHz			7	15	mA	CL=0pF RL=∞ T=25°C (CL option: 25pF)
	40.0 to 79.9999MHz			8	15	mA	
	80.0 to 124.9999MHz			9	15	mA	
	125.0 to 150MHz			10	15	mA	
	1.0 to 39.9999MHz			8	16	mA	CL=0pF RL=∞ T=25°C (CL option: 40pF)
	40.0 to 79.9999MHz			9	16	mA	
	80.0 to 124.9999MHz			10	16	mA	
	125.0 to 150MHz			11	16	mA	
Output Voltage:		V_{OH}	0.8*V_{dd}			V	CL=15, 25pF
		V_{OL}			0.2*V_{dd}	V	
		V_{OH}	0.9*V_{dd}			V	CL=40pF
		V_{OL}			0.1*V_{dd}	V	
Rise Time: Fall Time:		Tr		1.0	2.0	ns	CL=15pF; T=25°C 20%/80%*VDD
		Tf		0.9	2.0	ns	
		Tr		1.1	2.0	ns	CL=25pF; T=25°C 20%/80%*VDD
		Tf		0.9	2.0	ns	
		Tr		1.0	2.0	ns	CL=40pF; T=25°C 20%/80%*VDD
		Tf		0.9	2.0	ns	
Cycle to Cycle Jitter:				50		ps	F=100MHz
Period Jitter RMS:				5		ps	F=100MHz

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RoHS/RoHS II Compliant

Key Electrical Specifications –V_{dd}= 3.3V

Parameters			Minimum	Typical	Maximum	Units	Notes
Supply Current (no load):	1.0 to 39.9999MHz			7	15	mA	CL=0p RL=∞ T=25°C (Standard CL: 15pF)
	40.0 to 79.9999MHz			8	15	mA	
	80.0 to 124.9999MHz			9	15	mA	
	125.0 to 150MHz			10	15	mA	
	1.0 to 39.9999MHz			8	16	mA	CL=0p RL=∞ T=25°C (CL option: 25pF)
	40.0 to 79.9999MHz			9	16	mA	
	80.0 to 124.9999MHz			10	16	mA	
	125.0 to 150MHz			11	16	mA	
	1.0 to 39.9999MHz			8	16	mA	CL=0p RL=∞ T=25°C (CL option: 40pF)
	40.0 to 79.9999MHz			9	16	mA	
	80.0 to 124.9999MHz			10	16	mA	
	125.0 to 150MHz			11	16	mA	
Output Voltage:		V_{OH}	0.8*V_{dd}			V	
		V_{OL}			0.2*V_{dd}	V	CL=15pF
		V_{OH}	0.9*V_{dd}			V	
		V_{OL}			0.1*V_{dd}	V	CL=25, 40pF
Rise Time: Fall Time:		Tr		1.0	2.0	ns	CL=15pF; T=25°C 20%/80%*VDD
		Tf		0.9	2.0	ns	
		Tr		1.0	2.0	ns	CL=25pF; T=25°C 20%/80%*VDD
		Tf		0.9	2.0	ns	
		Tr		0.8	2.0	ns	CL=40pF; T=25°C 20%/80%*VDD
		Tf		0.8	2.0	ns	
Cycle to Cycle Jitter:				50		ps	F=100MHz
Period Jitter RMS:				5		ps	F=100MHz

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RoHS/RoHS II Compliant

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	
Storage Temp.	-55	+150	°C	
Soldering Temp.	-----	+260	°C	40sec max
ESD HBM MM CDM		 4,000 200 1,500	V	

OPTIONS AND PART IDENTIFICATION: (Left Blank if Standard)

Programmed Orders (Quantity > 1,000pcs)

ASDMB - [ ] MHz - [ ][ ] - [ ] - [ ]

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

Operating Temp.
Blank: 0°C ~ +70°C
E: -20°C ~ +70°C
L: -40°C ~ +85°C
X: -40°C ~ +105°C

Overall Freq. Stability
C: ±50ppm (STD)
Y: ±10ppm
R: ±25 ppm

Output Load
Blank: 15pF
25: 25pF
40: 40pF

Packaging
Blank*: 140pcs / Tube
T: 1,000pcs / reel
T3: 3,000pcs / reel
T5: 5,000pcs / reel
T10: 10,000pcs / 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

Blank un-programmed oscillators are available for quick turn engineering requirements. Please call ABRACON for more information.

ASDMB - BLANK - [ ][ ] - [ ] - [ ]

Operating Temp.
Blank: 0°C ~ +70°C
E: -20°C ~ +70°C
L: -40°C ~ +85°C
X: -40°C ~ +105°C

Overall Freq. Stability
C: ±50ppm (STD)
Y: ±10ppm
R: ±25 ppm

Output Load
Blank: 15pF
25: 25pF
40: 40pF

Packaging
Blank: 140pcs / Tube
T: 1,000pcs / reel
T3: 3,000pcs / reel
T5: 5,000pcs / reel
T10: 10,000pcs / reel

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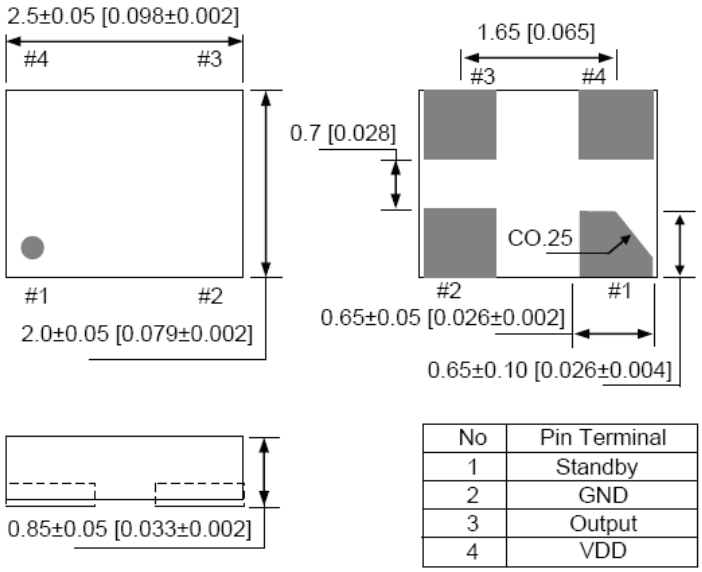


Life Size

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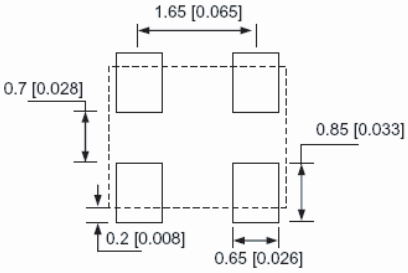
RoHS/RoHS II Compliant

OUTLINE DIMENSIONS:



No	Pin Terminal
1	Standby
2	GND
3	Output
4	VDD

Recommended Land Pattern

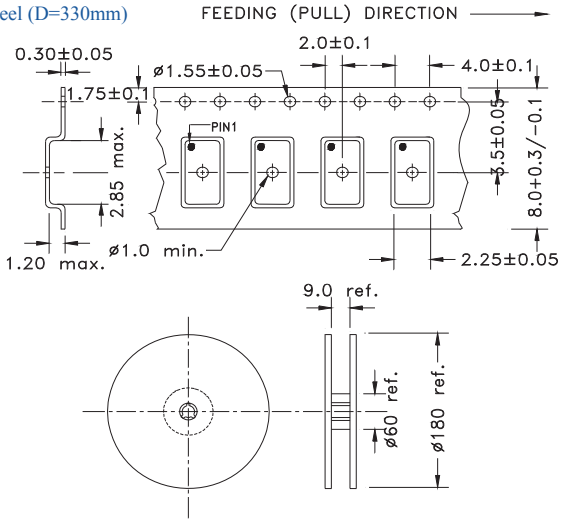


Note: Recommend using an approximately 0.01uF bypass capacitor between PIN 2 and 4.

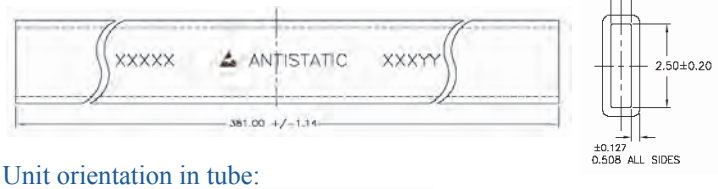
Dimensions: mm (inches)

TAPE AND REEL:

T= 1,000pcs/reel (D=180mm)
T3= 3,000pcs/reel (D=180mm)
T5= 5,000pcs/reel (D=330mm)
T10= 10,000pcs/reel (D=330mm)



Tube: 140 pcs/tube

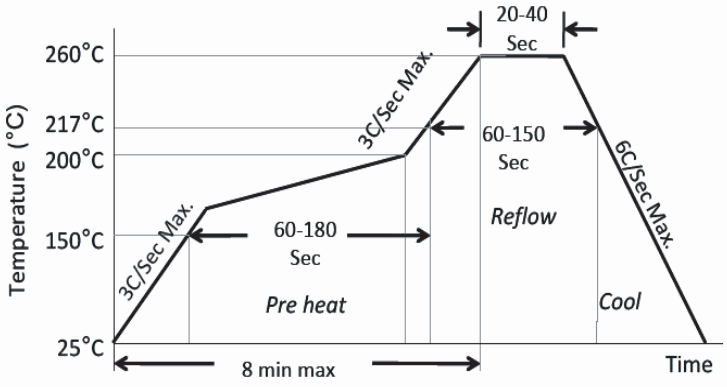


Unit orientation in tube:



Dimensions: mm

REFLOW PROFILE:



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 ASDMB Series? To view compatible **PRECISION TEST SOCKETS** for these parts, **click here.**

ATTENTION: Abracon LLC products are COTS – Commercial-Off-The-Shelf products; suitable for Commercial, Industrial and, where designated, Automotive Applications. Abracon's products are not specifically designed for Military, Aviation, Aerospace, Life dependent Medical applications or any application requiring high reliability where component failure could result in loss of life and/or property. For applications requiring high reliability and/or presenting an extreme operating environment, written consent and authorization from Abracon LLC is required. Please contact Abracon LLC for more information.

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Global Electronic Components Distributor

Click to view pricing, inventory, delivery, and lifecycle information:

ABRACON:

ASPIAIG-Q1060-1R0M-T FT5HNBPK25.0-T1 ATCA-07-101M-H ABLS-16.000MHZ-D4-T
ABM11W-16.0000MHZ-8-K1Z-T3 ABM8-27.000MHZ-B2-T ASDMB-8.000MHZ-LC-T ASPIAIG-Q5030-1R0M-T
ATX-11-F-27.000MHZ-F05-T ABM8-24.000MHZ-D4Y-T ABM8AIG-24.000MHZ-12-2Z-T3
ABM8G-24.000MHz-4-Y-T3 AMPLA5030Q-4R7MT AMPMAFB-27.0000T ASE3-25.000MHz-E-K-T
ABM8G-16.000MHz-4-Y-T3 ASV-125.000MHZ-EC-T ACHL-25.000MHZ-EK ASCO-50.000MHz-E-K-T3
ASPIAIG-F1040-R36M-T FC5BAEEMM8.0-T1 ABLSG-24.000MHz-D-2-Y-T ABMM2-10.000MHZ-E2-T
ACML-0402HC-301-T AISC-1008F-100G-T AMPMGFB-25.0000T ASPI-F1010-4R7M-T
AMDLA4010S-2R2MT ASEMB-100.000MHZ-LY-T ASPI-M3015-2R2M-T