PERFORMANCE PLASTIC PACKAGE ULTRA MINIATURE PURE SILICON™ CLOCK OSCILLATORS

ASDMP

2.5 x 2.0 x 0.85mm

ASDMP Series

Pb RoHS/RoHS II compliant

Moisture Sensitivity Level – MSL 1

FEATURES:

- Ultra Miniature Pure SiliconTM Clock Oscillator
- High Performance MEMS Technology by Discera
- Low Power Consumption for high speed communication
- Exceptional Stability Over Temp. at -40 to +85°C, ±15ppm
- Extended Automotive Grade Temp. stability at -55 to +125°C, ±25ppm
- MIL-STD-883 shock and vibration compliant
- Durable QFN Plastic Compact Packaging
- Standby or Disable Tri-state function
- Low jitter (Period jitter RMS and Phase jitter RMS)
- High power supply noise reduction, -50dBc

APPLICATIONS:

- Storage Area Networks (SATA, SAS, Fiber Channel)
- Passive Optical Networks (EPON, 10G-EPON, GPON, 10G-PON)
- Ethernet (1G, 10GBASE-T,/KR/LR/SR, FCoE
- PCI Express
- Display port

STANDARD SPECIFICATIONS:

Common Key Electrical Specifications – CMOS, LVPECL, LVDS, and HCSL

Parameters		Minimum	Typical	Maximum	Units	Notes
Frequency Range	CMOS	2.3000*		170.0000	MHz	Commercial, Industrial temp. range
	CMOS	2.3000*		100.0000		Automotive temp range -55 ~ +125°C
	LVPECL	2.3000*		460.0000		Commercial, Industrial temp. range
	LVDS	2.3000*		460.0000		Commercial, Industrial temp range
	HCSL	2.3000*		460.0000		Commercial, Industrial temp. range
Operating Temperature		-20		+70	°C	See options
Storage Temperature		-55		+150	°C	
Overall Frequency Stability		-50		+50	ppm	See options
Supply Voltage (Vdd)		+2.25		+3.6	V	
Startup Time				5	ms	
Enable Time				20	ns	STD (Tri-state)
				5	ms	PD option (Power Down)
Disable Time				5	ns	
Disable Current			20	22	mA	STD (Tri-state)
				0.095		PD option (Power Down)
Tri-state Function (Standby/Disable)		"1" (VIH≥0.75*Vdd) or Open: Oscillation "0" (VIL<0.25*Vdd) : Hi Z			V	40kΩ pull-up resister embedded
Aging		-5.0		+5.0	ppm	First year

*** For 2.3000MHz ≤ F0 ≤ 9.9999MHz, 6-8 weeks lead-time applies**

Key Electrical Specifications – CMOS

Parameters		Minimum	Typical	Maximum	Units	Notes
Supply Current (I_{dd})			31	35	mA	CL=15pF, 125MHz
Output Logic Level	V_{OH}	0.9*V_{dd}			V	I=±6mA
	V_{OL}			0.1*V_{dd}	V	
Rise Time	Tr		1.1	2.0	ns	CL=15pF
Fall Time	Tf		1.3	2.0	ns	20% to 80%
Duty Cycle		45		55	%	
Integrated Phase Jitter (J_{PH})			0.30	2	ps	200kHz ~ 20MHz@125MHz
			0.38	2		100kHz ~ 20MHz@125MHz
			1.70	2		12kHz ~ 20MHz@125MHz
Period Jitter RMS (J_{PER})			3.0		ps	

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Key Electrical Specifications – LVPECL

Parameters		Minimum	Typical	Maximum	Units	Notes
Supply Current (I_{dd})			56.5	58	mA	RL=50Ω
Output Logic Level	V_{OH}	V_{dd}-1.08			V	RL=50Ω
	V_{OL}			V_{dd}-1.55	V	
Peak to Peak Output Swing (V_{pp})			800		mV	Single ended
Rise Time	Tr		250		ps	RL=50Ω , CL=0pF 20% to 80%
Fall Time	Tf		250			
Duty Cycle		48		52	%	Differential
Integrated Phase Jitter (J_{PH})			0.25	2	ps	200kHz ~ 20MHz @156.25MHz
			0.38	2		100kHz ~ 20MHz @156.25MHz
			1.70	2		12kHz ~ 20MHz @156.25MHz
Period Jitter RMS (J_{PER})			2.5		ps	

Key Electrical Specifications – LVDS

Parameters		Minimum	Typical	Maximum	Units	Notes
Supply Current (I_{dd})			29	32	mA	RL=100Ω
Output Offset Voltage (V_{OS})		1.125		1.4	V	RL=100Ω differential
Delta Offset Voltage (ΔV_{OS})				50	mV	
Peak to Peak Output Swing (V_{pp})			350		mV	Single ended
Rise Time	Tr		200		ps	RL=50Ω , CL=2pF 20% to 80%
Fall Time	Tf		200			
Duty Cycle		48		52	%	Differential
Integrated Phase Jitter (J_{PH})			0.28	2	ps	200kHz ~ 20MHz @156.25MHz
			0.40	2		100kHz ~ 20MHz @156.25MHz
			1.70	2		12kHz ~ 20MHz @156.25MHz
Period Jitter RMS (J_{PER})			2.5		ps	

Key Electrical Specifications – HCSL

Parameters		Minimum	Typical	Maximum	Units	Notes
Supply Current (I_{dd})			40	42	mA	RL=50Ω
Output Logic Level	V_{OH}	0.725			V	RL=50Ω
	V_{OL}			0.1	V	
Peak to Peak Output Swing (V_{pp})			750		mV	Single ended
Rise Time	Tr	200		400	ps	RL=50Ω , CL=2pF 20% to 80%
Fall Time	Tf	200		400		
Duty Cycle		48		52	%	Differential
Integrated Phase Jitter (J_{PH})			0.25	2	ps	200kHz ~ 20MHz @156.25MHz
			0.37	2		100kHz ~ 20MHz @156.25MHz
			1.70	2		12kHz ~ 20MHz @156.25MHz
Period Jitter RMS (J_{PER})			2.5		ps	

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Absolute Maximum Ratings

Item	Minimum	Maximum	Unit	Condition
Supply Voltage	-0.3	+4.0	V	
Input Voltage	-0.3	V_{dd}+0.3	V	
Junction Temp.		+150	°C	
Storage Temp.	-55	+150	°C	
Soldering Temp.		+260	°C	40sec max
ESD			V	
HBM		4,000		
MM		400		
CDM		1,500		

PART IDENTIFICATIONS:

Programmed Orders (Quantity > 1,000pcs)

ASDMP ☐ - ☐☐☐☐☐☐ MHz - ☐☐ - ☐ - ☐

Output Type
C: CMOS
LP: LVPECL
LV: LVDS
HC: HCSL

Frequency in MHz
e.g. 156.2500 MHz (Maximum 4 digits after decimal)

Operating Temp.
Blank: -20°C ~ +70°C
L: -40°C ~ +85°C
X: -40°C ~ +105°C
Z**: -55°C ~ +125°C

Overall Freq. Stability
Blank: ±50ppm
Y: ±10ppm*
R: ±25 ppm

Tri-state (Pin 1)
Blank: Tri-state
PD: Power Down

Packaging
Blank***: Tube (140pcs / Tube)
T: Tape & Reel (1kpcs / reel)
T3: Tape & Reel (3kpcs / reel)
T5: Tape & Reel (5kpcs / reel)
T10: Tape & Reel (10kpcs / reel)

* Temp option L, X or -20°C ~ +70°C, only
** CMOS output only
*** 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 and our low cost portable programmer are available for quick turn engineering requirements. Please call ABRACON or visit MEMSpeed Pro II site http://www.abracon.com/memspeedpro/MEMSpeedProFlyerII.pdf for more information.

ASDMP ☐ - BLANK - ☐☐ - ☐ - ☐

Output Type
C: CMOS
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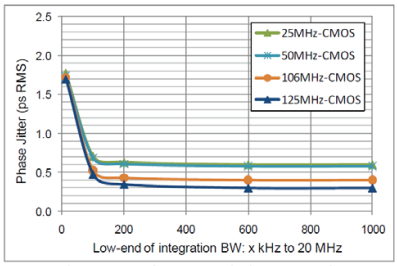
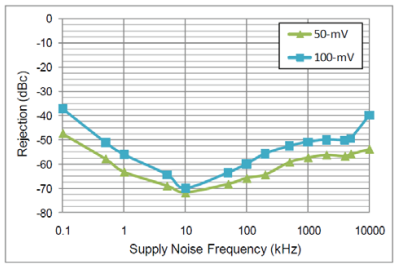
CMOS OUTPUT:

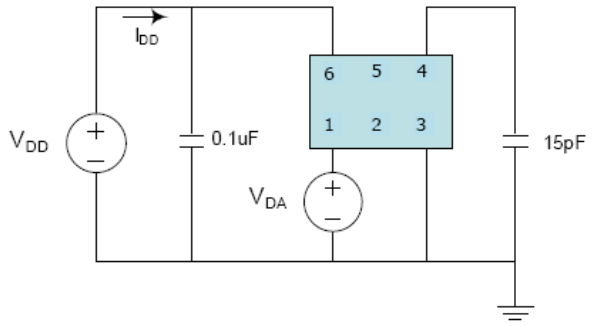


Phase jitter (integrated phase noise)

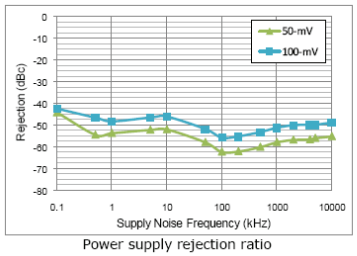


Power supply rejection ratio

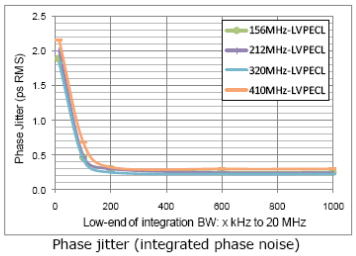
TEST CIRCUIT:



LVPECL OUTPUT:

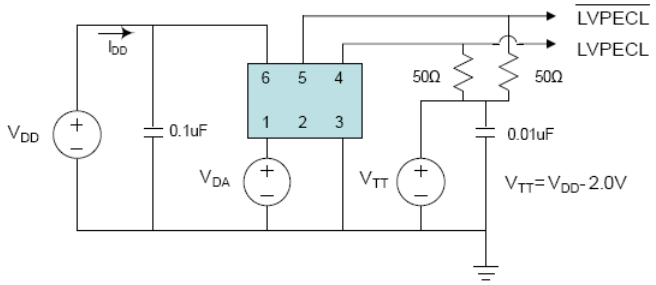


Power supply rejection ratio

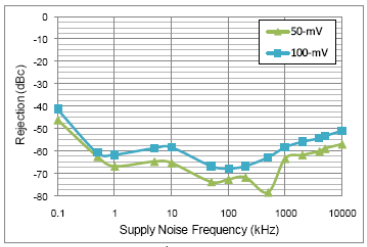


Phase jitter (integrated phase noise)

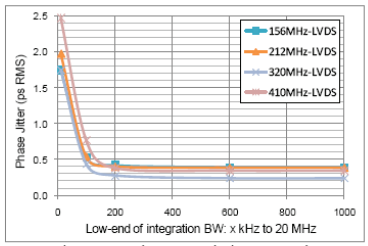
TEST CIRCUIT:



LVDS OUTPUT:

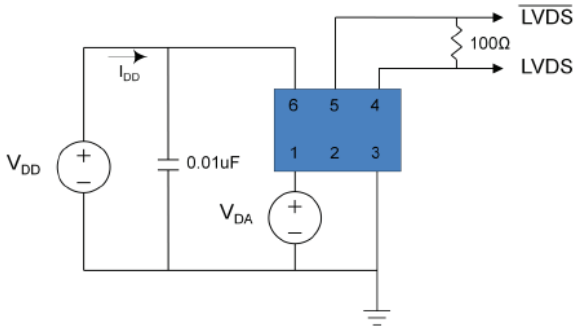


Power supply rejection ratio



Phase jitter (integrated phase noise)

TEST CIRCUIT:



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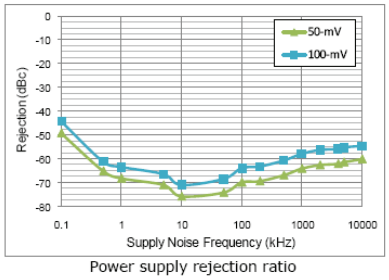
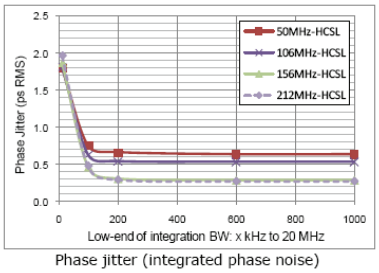
HCSL OUTPUT:



Power supply rejection ratio



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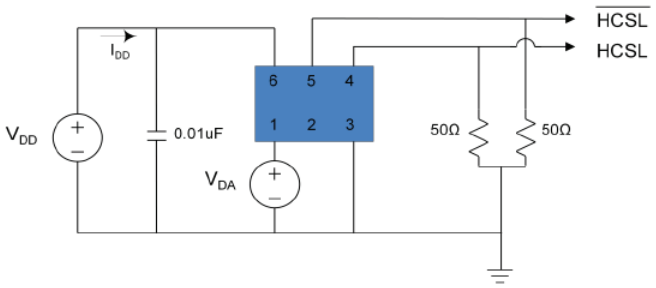
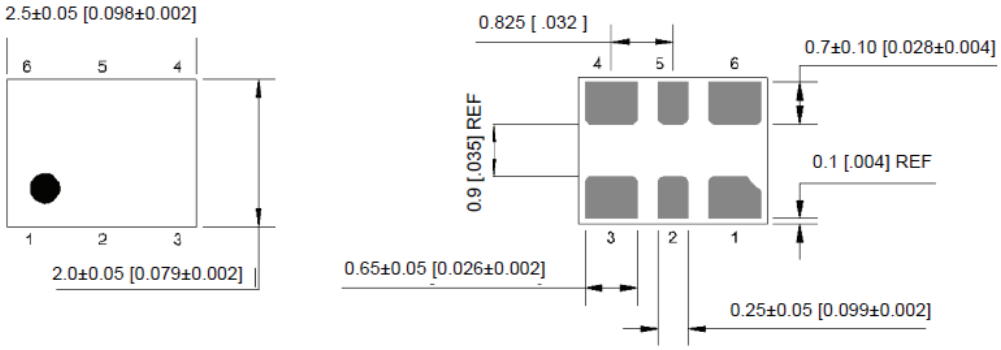
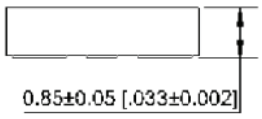
TEST CIRCUIT:



OUTLINE DRAWING:

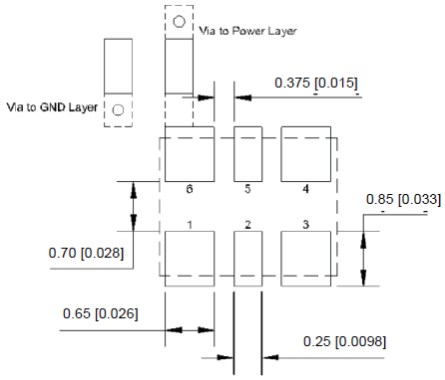




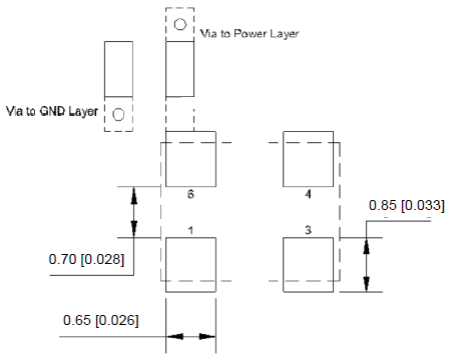
Pin #	Function
1	Tri-state
2	NC
3	GND
4	Output
5	NC (CMOS) Output (LVPECL, LVDS, HCSL)
6	Vdd

Note: Recommend using an approximately 0.01uF bypass capacitor between PIN 6 and 3.

Dimensions: mm (inches)



Recommended Land Pattern for LVPECL, LVDS, HCSL



Recommended Land Pattern for CMOS

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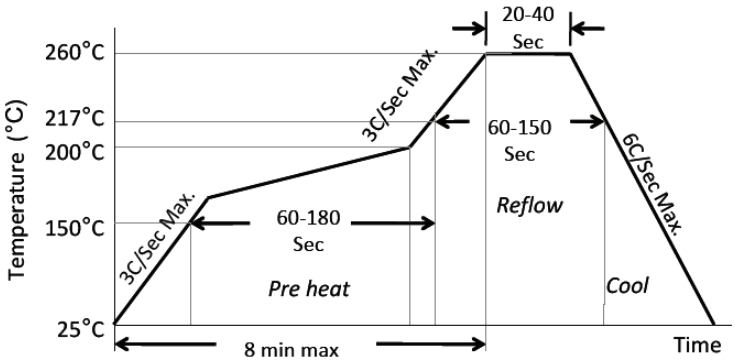
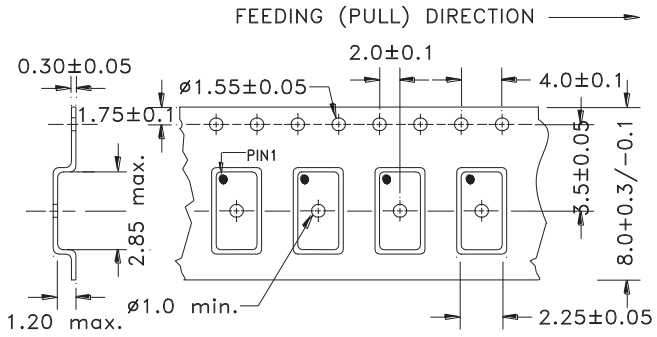
REFLOW PROFILE:

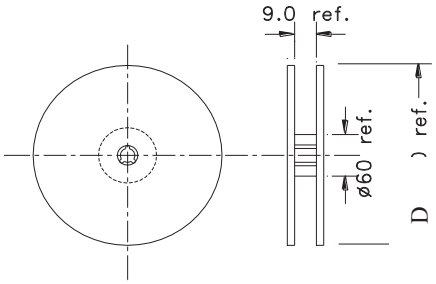


Ramp-Up Rate (200°C to Peak Temp)	3°C/Sec Max.
Preheat Time 150°C to 200°C	60-180 Sec
Time maintained above 217°C	60-150 Sec
Peak Temperature	255-260°C
Time within 5°C of actual Peak	20-40 Sec
Ramp-Down Rate	6°C/Sec Max.
Time 25°C to Peak Temperature	8 min Max.

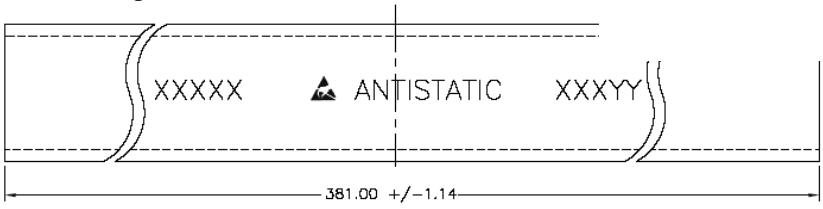
TAPE & REEL:

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

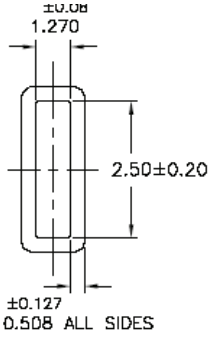




Tube: 140 pcs/tube



Unit orientation in tube:



Dimensions: mm

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Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001
Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

http://moschip.ru/get-element

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

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Офис по работе с юридическими лицами:

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