

SMD CMOS PROGRAMMABLE CRYSTAL OSCILLATOR

AP2S

Moisture Sensitivity Level (MSL) –
This product is Hermetically Sealed and
not Moisture Sensitive -MSL = N/A: Not Applicable



RoHS
Compliant

AP2S



2.5 x 2.0 x 0.9mm

FEATURES:

- Performance comparable to fixed frequency oscillator
- Lowest peak-to-peak jitter
- Low supply current
- Short lead time
- Suitable for mass production
- Alternative to long lead-time XO's

For Small
Quantities,
Delivery Time
is 1-5 days

ELECTRICAL SPECIFICATIONS:

Parameters		Minimum	Typical	Maximum	Units	Notes		
Frequency Range	V _{dd} = 3.3V	1	-----	200	MHz			
	V _{dd} = 2.5V	1	-----	166				
	V _{dd} = 1.8V	11	-----	110				
	V _{dd} = 1.8V	1	-----	10.999		In-house programming small quantity only ($< 1,000$ pcs) Contact Abracon for mass production quantity		
Operating Temperature		-10	-----	+60	°C	See options		
Storage Temperature		-55	-----	+150	°C			
Overall Frequency Stability*		-100	-----	+100	ppm	See options		
Supply Voltage (Vdd)	V _{dd} = 3.3V	2.97	3.30	3.63	V	Standard		
	V _{dd} = 2.5V	2.25	2.50	2.75		Vdd option 1		
	V _{dd} = 1.8V	1.62	1.80	1.98		Vdd option 2		
Input Current	V _{dd} = 3.3V	-----	-----	10	mA	$1\text{MHz} \leq F < 30\text{MHz}$		
		-----	-----	15		$30\text{MHz} \leq F < 75\text{MHz}$		
		-----	-----	20		$75\text{MHz} \leq F < 133\text{MHz}$		
		-----	-----	22		$133\text{MHz} \leq F < 166\text{MHz}$		
		-----	-----	25		$166\text{MHz} \leq F < 200\text{MHz}$		
	V _{dd} = 2.5V	-----	-----	8		$1\text{MHz} \leq F < 30\text{MHz}$		
		-----	-----	10		$30\text{MHz} \leq F < 75\text{MHz}$		
		-----	-----	15		$75\text{MHz} \leq F < 133\text{MHz}$		
		-----	-----	15		$133\text{MHz} \leq F < 166\text{MHz}$		
	V _{dd} = 1.8V	-----	-----	6		$1\text{MHz} \leq F < 30\text{MHz}$		
		-----	-----	8		$30\text{MHz} \leq F < 75\text{MHz}$		
		-----	-----	2		$75\text{MHz} \leq F < 133\text{MHz}$		
		Symmetry****		45		50	55	%
	Rise and Fall Time (Tr/Tf)**	V _{dd} = 3.3V	-----	-----		3	ns	$1\text{MHz} \leq F < 10\text{MHz}$
			-----	-----		2		$10\text{MHz} \leq F$
V _{dd} = 2.5V		-----	-----	4	$1\text{MHz} \leq F < 10\text{MHz}$			
		-----	-----	3	$10\text{MHz} \leq F$			
V _{dd} = 1.8V		-----	-----	5	$1\text{MHz} \leq F < 10\text{MHz}$			
		-----	-----	4	$10\text{MHz} \leq F$			
Output Load:		-----	-----	15	pF	CMOS		



SMD CMOS PROGRAMMABLE CRYSTAL OSCILLATOR

AP2S



RoHS
Compliant



AP2S



2.5 x 2.0 x 0.9mm

ELECTRICAL SPECIFICATIONS:

Parameters		Minimum	Typical	Maximum	Units	Notes
Output Voltage	V_{OL}	-----	-----	0.33	V	$V_{dd} = 3.3V$
	V_{OH}	2.97	-----	-----		
	V_{OL}	-----	-----	0.25		$V_{dd} = 2.5V$
	V_{OH}	2.25	-----	-----		
	V_{OL}	-----	-----	0.18		$V_{dd} = 1.8V$
	V_{OH}	1.62	-----	-----		
Start-up Time		-----	-----	2.0	ms	
Tri-state function (Stand-by)		"1" ($V_{IH} > 0.7 \cdot V_{dd}$) or Open: Oscillation "0" ($V_{IH} < 0.3 \cdot V_{dd}$) : Disable			-----	
Standby current		-----	-----	15	μA	
Period jitter Peak to Peak (Reference only. Please contact Abracon for each frequencies.):		-----	-----	40	ps	Standard frequencies***
		-----	-----	200	ps	Other frequencies Reference only Please contact Abracon
Aging:		-3.0	-----	+3.0	ppm	@+25°C First year

* Inclusive of calibration @25°C, operating temperature range, input voltage variation, load variation, aging, shock, and vibration.

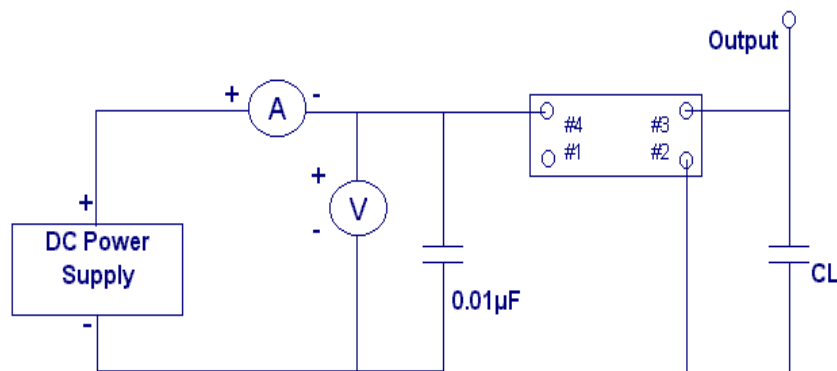
For ± 20 ppm, inclusive of calibration @25°C, operating temperature range, load variation, shock, and vibration.

** Transition times are measured between 10% and 90% of V_{dd} with an output load of 15 pF.

*** 4.0, 6.0, 8.0, 12.0, 13.0, 16.0 19.2, 20.0, 24.0, 26.0, 32.0, 38.4, and 40.0MHz

**** Only 40/60% is available for certain frequencies. Please contact Abracon when ordering.

TEST CIRCUIT:



SMD CMOS PROGRAMMABLE CRYSTAL OSCILLATOR

AP2S



RoHS
Compliant



2.5 x 2.0 x 0.9mm

OPTIONS & PART IDENTIFICATION:

AP2S - MHz - -

Supply Voltage

*Blank: 3.3V
1: 2.5V
2: 1.8V

Frequency in MHz

Please specify the frequency in MHz.
e.g. 14.31818MHz

Operating Temp.

I: 0°C ~ +50°C
E: -20°C ~ +70°C
F: -30°C ~ +70°C
N: -30°C ~ +85°C
L: -40°C ~ +85°C

Overall Freq. Stability

J(****): ±20ppm
R: ±25ppm
K: ±30ppm
C: ±50ppm

Tri-state pin

**Blank: OE
***B: Power Down

Packaging

Blank: Bulk
T: Tape & Reel (1k/reel)
T3: Tape & Reel (3k/reel)

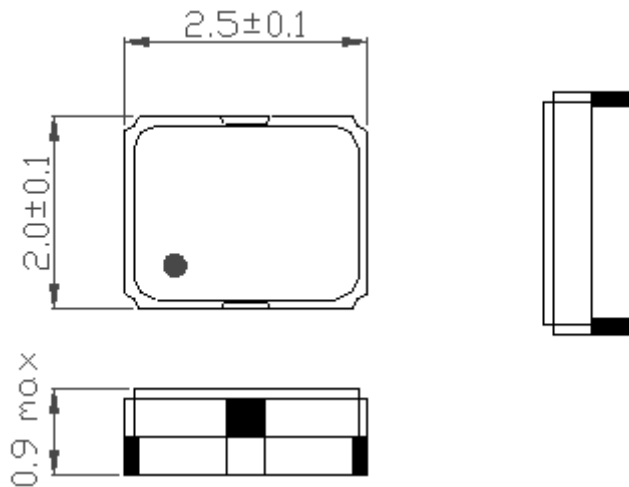
* 3.3V is standard

** OE: Tri-state the output buffer

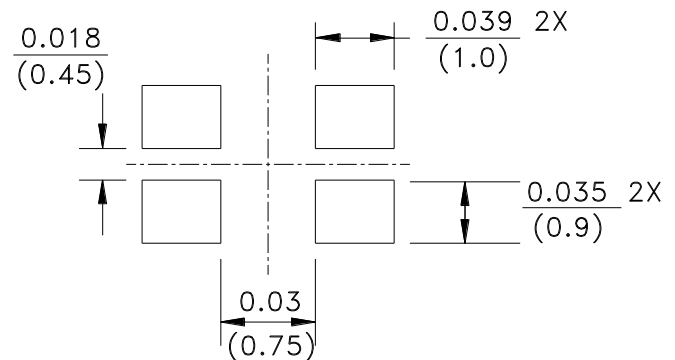
*** PDB: Tri-state the output buffer and shut off the oscillator, <10µA when PDB enabled.

**** Available for -10 to +60°C, I, or E temp options only. Contact ABRACON for EJ or LR options. (Availability limited)

OUTLINE DRAWING:



Recommended land pattern



Pin	Function
1	Tri-State
2	GND/Case
3	Output
4	Vdd

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

Dimensions: inches (mm)



SMD CMOS PROGRAMMABLE CRYSTAL OSCILLATOR

AP2S

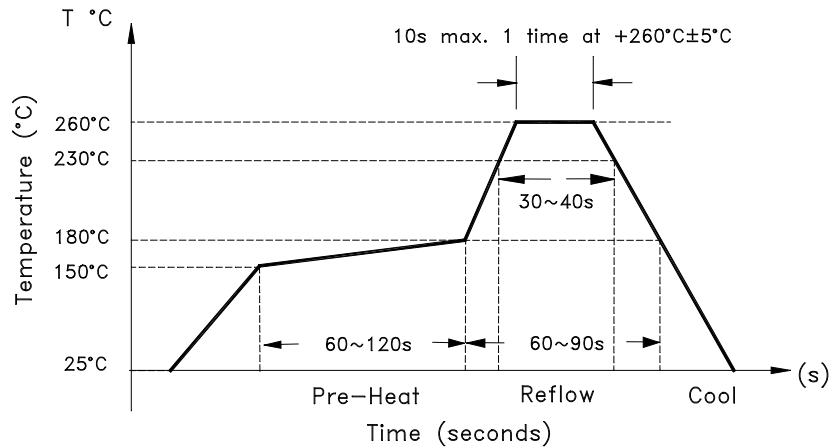


RoHS
Compliant



2.5 x 2.0 x 0.9mm

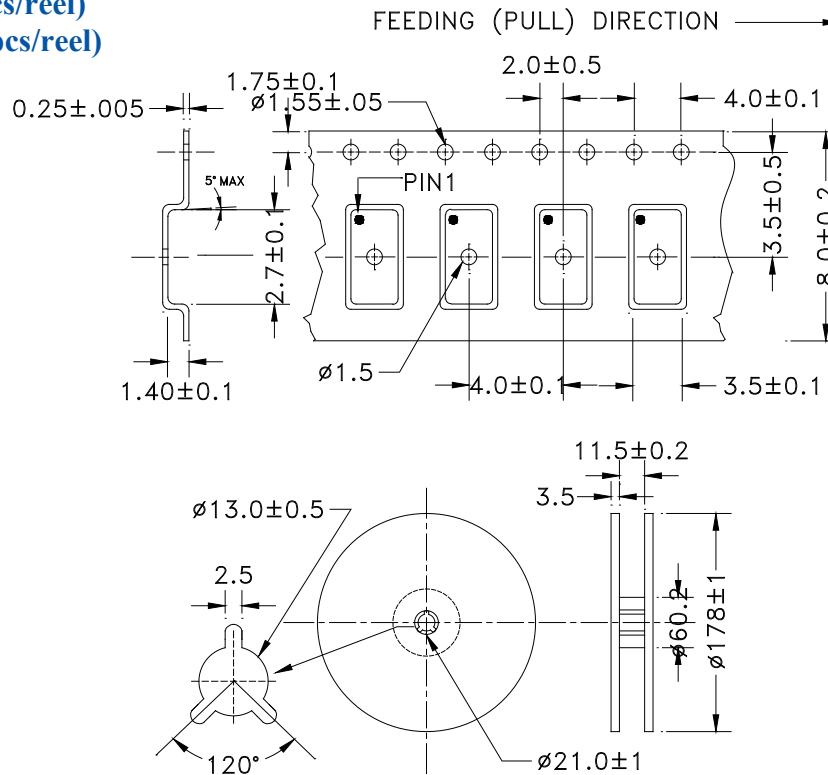
REFLOW PROFILE



TAPE & REEL:

T= Tape and reel (1,000pcs/reel)

T3= Tape and reel (3,000pcs/reel)



Dimensions: mm

ATTENTION: Abracon Corporation's 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-dependant 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 Corporation is required. Please contact Abracon Corporation for more information.

ABRACON IS
ISO 9001:2008
CERTIFIED



ABRACON
CORPORATION

Visit www.abracon.com for Terms & Conditions of Sale

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

Revised: 09.16.11

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.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9