

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



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 (< 1,000pcs) 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	1MHz ≤ F< 30MHz
		-----	-----	15		30MHz ≤ F< 75MHz
		-----	-----	20		75MHz ≤ F< 133MHz
		-----	-----	22		133MHz ≤ F< 166MHz
		-----	-----	25		166MHz ≤ F< 200MHz
	V _{dd} = 2.5V	-----	-----	8		1MHz ≤ F< 30MHz
		-----	-----	10		30MHz ≤ F< 75MHz
		-----	-----	15		75MHz ≤ F< 133MHz
		-----	-----	15		133MHz ≤ F< 166MHz
		-----	-----	15		166MHz ≤ F< 200MHz
	V _{dd} = 1.8V	-----	-----	6		1MHz ≤ F< 30MHz
		-----	-----	8		30MHz ≤ F< 75MHz
		-----	-----	2		75MHz ≤ F< 133MHz
		-----	-----	2		133MHz ≤ F< 166MHz
Symmetry****		45	50	55	%	@ 1/2Vdd
Rise and Fall Time (Tr/Tf)**	V _{dd} = 3.3V	-----	-----	3	ns	1MHz ≤ F< 10MHz
		-----	-----	2		10MHz ≤ F
	V _{dd} = 2.5V	-----	-----	4		1MHz ≤ F< 10MHz
		-----	-----	3		10MHz ≤ F
	V _{dd} = 1.8V	-----	-----	5		1MHz ≤ F< 10MHz
		-----	-----	4		10MHz ≤ 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.

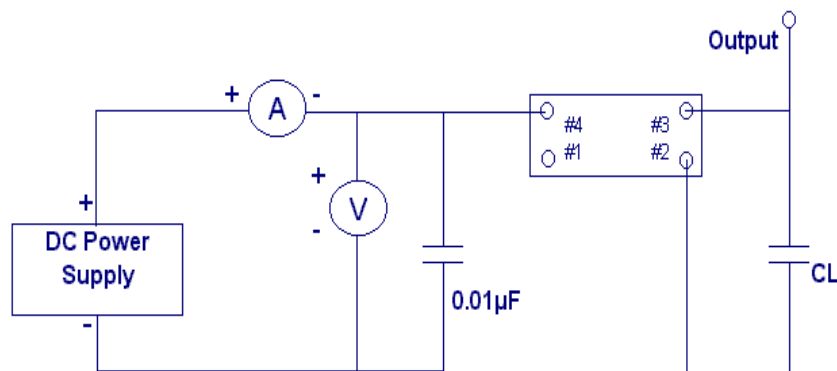
For ± 20 ppm, inclusive of calibration @25°C, operating temperature range, load variation, shock, and vibration.

** 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	Frequency in MHz	Operating Temp.	Overall Freq. Stability	Tri-state pin	Packaging
*Blank: 3.3V	Please specify the frequency in MHz. e.g. 14.31818MHz	I: 0°C ~ +50°C	J(****): ±20ppm	**Blank: OE	Blank: Bulk
1: 2.5V		E: -20°C ~ +70°C	R: ±25ppm	***B: Power Down	T: Tape & Reel (1k/reel)
2: 1.8V		F: -30°C ~ +70°C	K: ±30ppm		T3: Tape & Reel (3k/reel)
		N: -30°C ~ +85°C	C: ±50ppm		
		L: -40°C ~ +85°C			

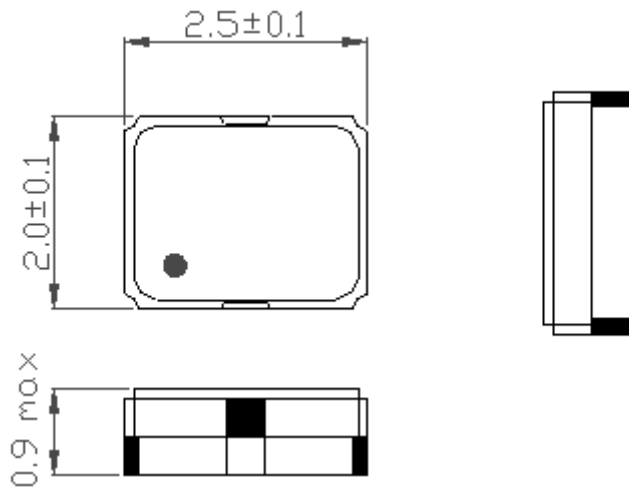
* 3.3V is standard

** OE: Tri-state the output buffer

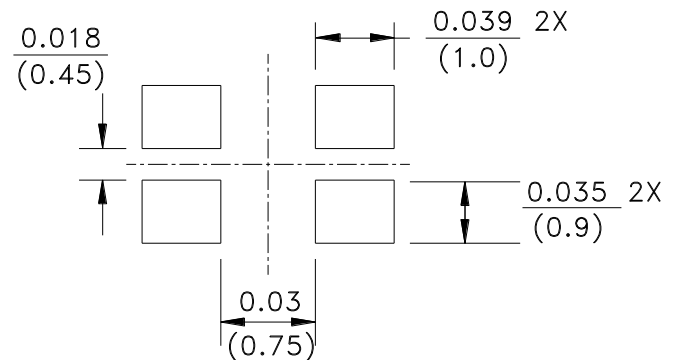
*** PDB: Tri-state the output buffer and shut off the oscillator, <10µA when PDB enabled.

**** 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

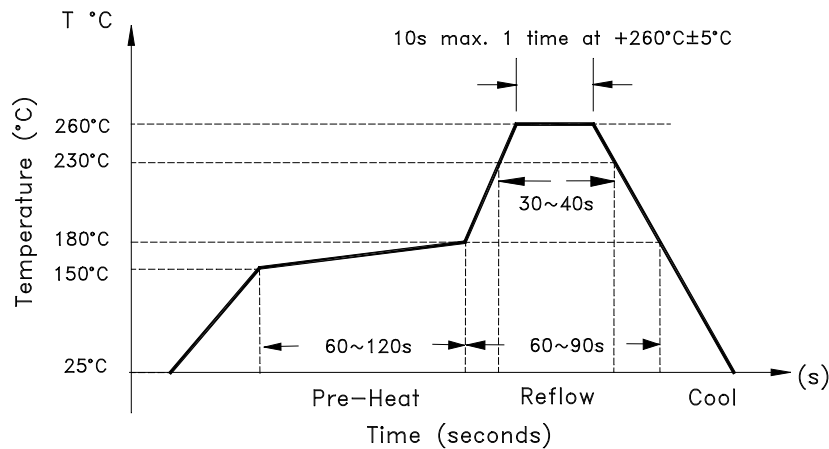


RoHS
Compliant



2.5 x 2.0 x 0.9mm

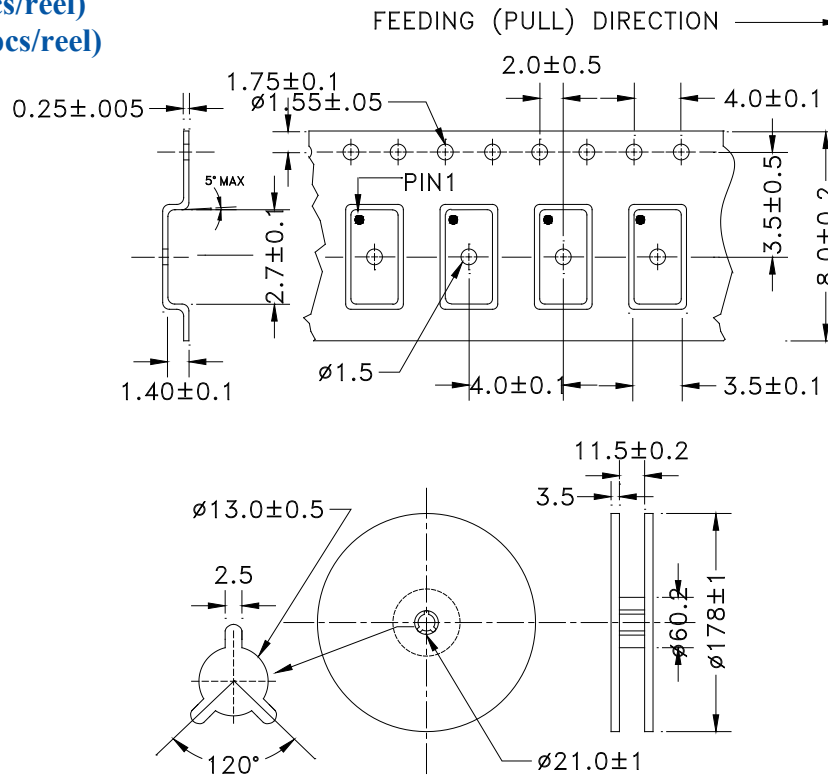
REFLOW PROFILE



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