

# HCMOS/TTL COMPATIBLE SURFACE-MOUNT PROGRAMMABLE CRYSTAL CLOCK OSCILLATOR



5.0 x 3.2 x 1.2mm

AP5S



RoHS  
Compliant

## FEATURES:

- Comparable performance to fixed frequency oscillator
- Low jitter with PLL technology

## APPLICATIONS:

- Microcontroller
- FPGA
- CPLG
- Prototype evaluation
- Portable computers (Laptop, tablet PC)

For Small  
Quantities,  
Delivery Time  
is 1-5 days

## ELECTRICAL SPECIFICATIONS:

Parameters		Minimum	Typical	Maximum	Units	Notes
Frequency Range:	V <sub>dd</sub> = 3.3V	10	-----	200	MHz	
	V <sub>dd</sub> = 2.5V	10	-----	166	MHz	
Operating Temperature:		0	-----	+70	°C	See options
Storage Temperature:		-55	-----	+155	°C	
Overall Frequency Stability*:		-100	-----	+100	ppm	See options
Supply Voltage (V <sub>dd</sub> ):	V <sub>dd</sub> = 3.3V	2.97	3.3	3.63	V	Standard
	V <sub>dd</sub> = 2.5V	2.25	2.5	2.75	V	Option 1
Input Current:	V <sub>dd</sub> = 3.3V	-----	-----	30	mA	
	V <sub>dd</sub> = 2.5V	-----	-----	20	mA	
Symmetry:		45	50	55	%	@ 1/2V <sub>dd</sub>
Rise and Fall Time (Tr/Tf)**:		-----	2.5	3.5	ns	
Output Load:				15	pF	CMOS
Output Voltage:	VOH	V <sub>dd</sub> -0.4	-----	-----	V	
	VOL	-----	-----	0.4	V	
Start-up Time:		-----	-----	10.0	ms	
Tri-state function (Stand-by) :		"1" (V <sub>IH</sub> ≥ 0.7*V <sub>dd</sub> ) or Open: Oscillation "0" (V <sub>IL</sub> < 0.3*V <sub>dd</sub> ) : Hi Z				
Period jitter RMS (Reference only. Please contact Abracon for each frequencies.):	25MHz	-----	2.0	4.0	ps	
	50MHz	-----	5.0	10.0	ps	
	100MHz	-----	7.0	14.0	ps	
Period jitter Peak to Peak (Reference only. Please contact Abracon for each frequencies.):	25MHz	-----	14.0	25.0	ps	
	50MHz	-----	25.0	35.0	ps	
	100MHz	-----	35.0	50.0	ps	
Phase jitter RMS	20MHz	-----	0.6	1.0	ps	12kHz to 10MHz
	25MHz	-----	5.6	7.0	ps	12kHz to 10MHz
	50MHz	-----	16.0 ~ 25.0	40.0	ps	12kHz to 20MHz
	100MHz	-----	18.0	25.0	ps	12kHz to 20MHz
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.

\*\* Transition times are measured between 10% and 90% of V<sub>dd</sub> with an output load of 15 pF.

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**ABRACON**  
CORPORATION

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30332 Esperanza, Rancho Santa Margarita, California 92688  
tel 949-546-8000 | fax 949-546-8001 | [www.abracon.com](http://www.abracon.com)

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5.0 x 3.2 x 1.2mm

AP5S



## OPTIONS & PART IDENTIFICATION:

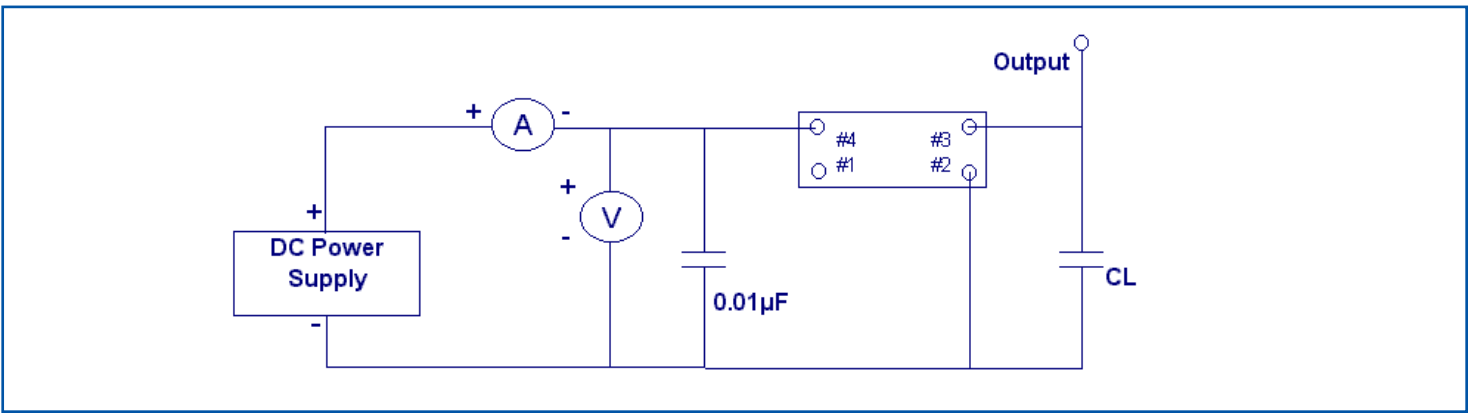
(Left blank if standard)

AP5S  -  MHz -   -

Supply Voltage	Frequency in MHz	Operating Temp.	Overall Freq. Stability	Packaging
Blank: 3.3V	Please specify the frequency in MHz. e.g. 14.31818MHz	I: 0°C ~ +50°C	J(**): ±20ppm	Blank: Bulk
I: 2.5V		D: -10°C ~ +60°C	R: ±25ppm	T: Tape & Reel
		E: -20°C ~ +70°C	K: ±30ppm	
		F: -30°C ~ +70°C	C: ±50ppm	
		N: -30°C ~ +85°C		
		L: -40°C ~ +85°C		

\* Temp. option I, D, E and 0°C ~ +70°C only  
Contact ABRACON for EJ or LR options. (Availability limited)

## TEST CIRCUIT:



## 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)

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