

# SURFACE-MOUNT CMOS PROGRAMMABLE OSCILLATOR



AP2S

2.5 x 2.0 x 0.9mm

AP2S



RoHS  
Compliant

## 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:

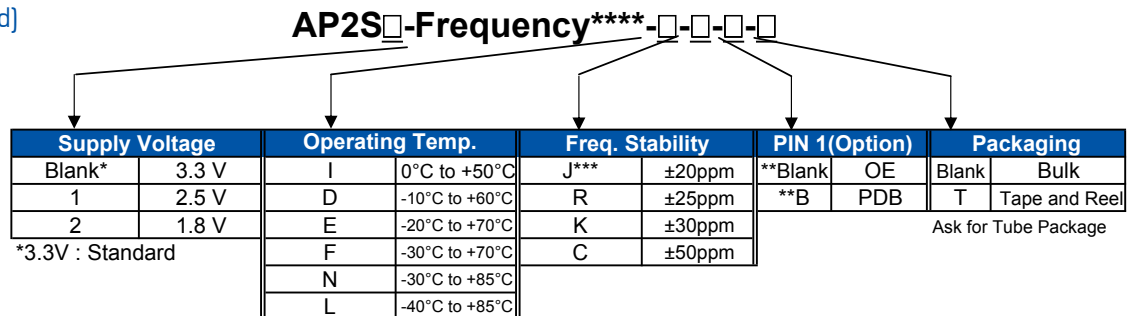
Characteristics	Unit	Minimum	Typical	Maximum
<b>Frequency Range (3.3V)</b>	MHz	3	--	110
<b>(2.5V)</b>	MHz	3	--	90
<b>(1.8V)</b>	MHz	3	--	75
<b>Operating Temp. Range (See Options)</b>	°C	-10	--	60
<b>Freq. stability over operating temp.* (See Options)</b>	ppm	-100	--	100
<b>Input Voltage (Operating Vdd)</b>	V	2.97	3.3	3.63
	V	2.25	2.5	2.75
	V	1.62	1.8	1.98
<b>Input Current (3.3V)</b>	mA			25
<b>Input Current (2.5V)</b>	mA			15
<b>Input Current (1.8V)</b>	mA			12
<b>Output Type</b>	CMOS			
<b>Output Load</b>	pF	--	15	--
<b>Output "0" level (3.3V)</b>	V	--	--	0.33
	V	--	--	0.25
	V	--	--	0.18
<b>Output "1" level (3.3V)</b>	V	2.97	--	--
	V	2.25	--	--
	V	1.62	--	--
<b>Symmetry</b>	%	45	50	55
<b>Standby Current (PIN 1 option: B)</b>	uA	--	--	10
<b>Rise Time (10%-&gt;90% Vdd)</b>	nSec	--	2.5	--
<b>Fall Time (90%-&gt;10% Vdd)</b>	nSec	--	2.5	--
<b>Tri-state Function (Input to pin 1)</b>	pin 1 : High or Open , pin 3 : Enable			
	pin 1 : Low , pin 3 : Disable			
<b>Jitter peak-to-peak**</b>	psec	--	40 to 200	--

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

\*\* Jitter performance depends on programming parameter and output frequency. Please contact ABRACON for additional info.

## OPTIONS & PART IDENTIFICATION:

(Left blank if standard)



(\*\*\*\_ Available for I, D, or E temp options only.

Contact ABRACON for EJ or LR options. (Availability limited)

(\*\*\*\*) Frequency in MHz

\*\* OE: Tri-state the output buffer.

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

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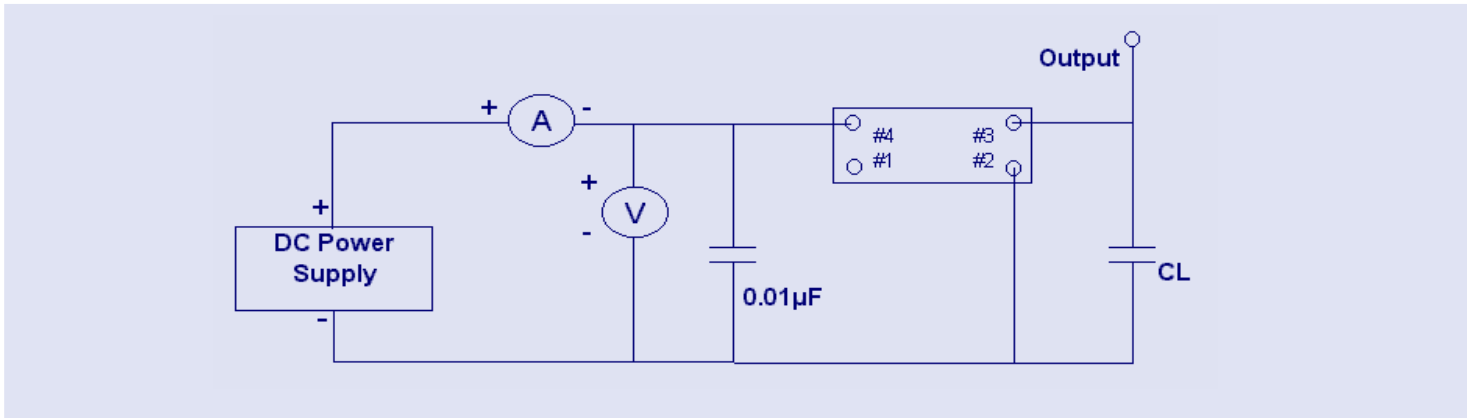
2.5 x 2.0 x 0.9mm

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## TEST CIRCUIT:



## OUTLINE DRAWING:

Top view dimensions: 2.5±0.1 (width), 2.0±0.1 (height), 0.9 max (thickness).  
Bottom view dimensions: 1.65 (width), 1.25±0.10 (height), 0.7±0.1 (width of pad), 0.8±0.1 (width of pad).

Recommended land pattern

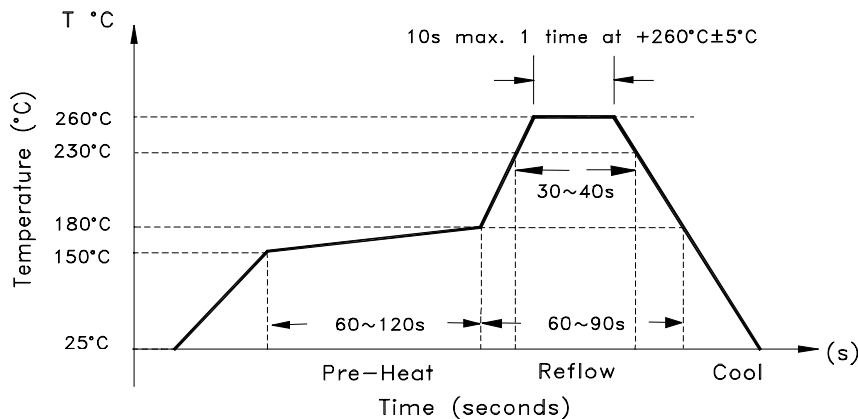
Pin #1: 0.018 (0.45) width, 0.039 (1.0) pitch.  
Pin #2: 0.035 (0.9) width, 0.03 pitch.  
Pin #3: 0.035 (0.9) width, 0.03 pitch.  
Pin #4: 0.035 (0.9) width, 0.03 pitch.

PIN	CONNECTION
# 1	STAND-BY / OE
# 2	GND/CASE
# 3	OUTPUT
# 4	VDD

Note: : It is recommended to use an approximately 0.01uF bypass capacitor between PIN 2 and 4.

**Dimensions: Inches (mm)**

## REFLOW PROFILE:



**NOTE:** Abracon manufactured products are intended for general commercial and industrial use. For applications requiring high reliability and/or presenting extreme operating environment, written consent & authorization from Abracon is required.

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