

# SMD CMOS PROGRAMMABLE CRYSTAL OSCILLATOR



3.2 x 2.5 x 1.2mm

AP3S



## 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	1	--	200
<b>(2.5V)</b>	MHz	1	--	166
<b>(1.8V)</b>	MHz	1	--	133
<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</b>	mA	See Table 1		
<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</b>	uA	--	--	10
<b>Rise Time (10%-&gt;90% Vdd)</b>	nSec	See Table 2		
<b>Fall Time (90%-&gt;10% Vdd)</b>	nSec	See Table 2		
<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.

Table 1: Input Current

Frequency MHz	Input current (mA)		
	3.3V	2.5V	1.8V
1MHz ≤ F < 30MHz	10	8	6
30MHz ≤ F < 75MHz	15	10	8
75MHz ≤ F < 133MHz	20	15	12
133MHz ≤ F < 166MHz	22	15	-
166MHz ≤ F < 200MHz	25	-	-

Table 2: Rise and Fall Time

Frequency MHz	Rise / Fall Time (ns)		
	3.3V	2.5V	1.8V
1MHz ≤ F < 10MHz	6	8	10
10MHz ≤ F	5	5	6

## OPTIONS & PART IDENTIFICATION: (Left blank if standard)

AP3S□-Frequency-□-□-□-□

Supply Voltage	Operating Temp.	Freq. Stability	PIN 1 (Option)	Packaging
Blank*	I	J (***)	**Blank	Blank
1	E	R	OE	Bulk
2	F	K	**B	T
	N	C	PDB	Tape and Reel
	L			

Ask for Tube Package

\*3.3V : Standard

(\*\*\*) Available for I, or E temp options only  
Contact ABRACON for EJ or LR options (Availability is limited)

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

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



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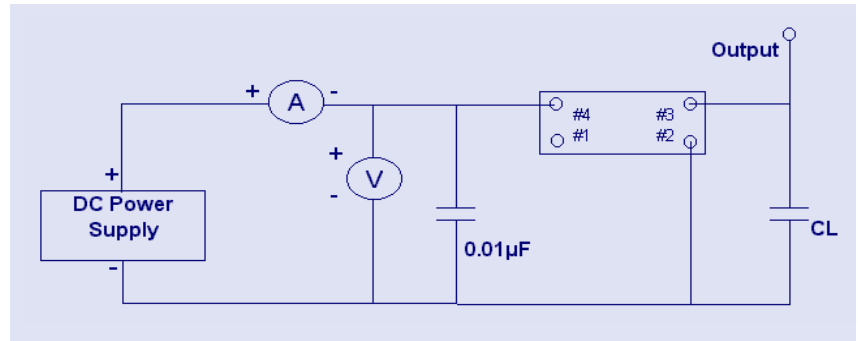
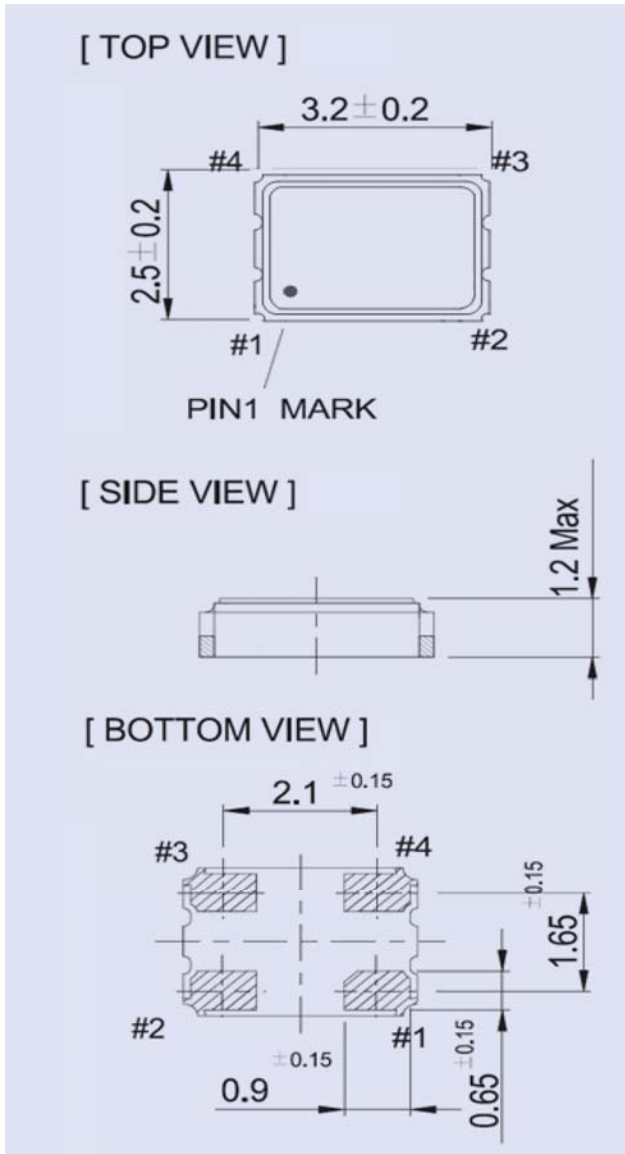
3.2 x 2.5 x 1.2mm

AP3S

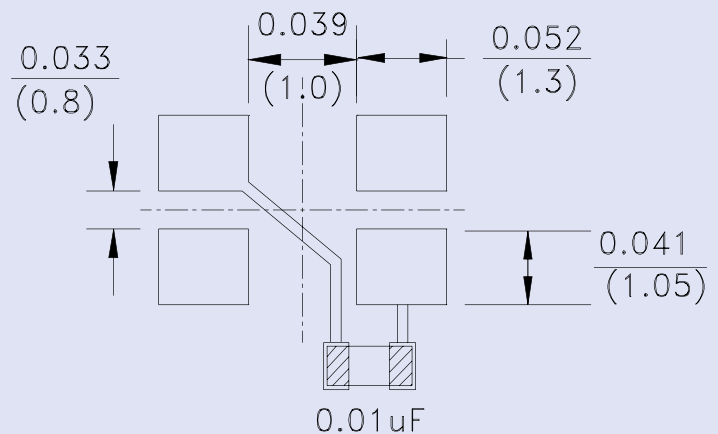


## OUTLINE DRAWING:

## TEST CIRCUIT:



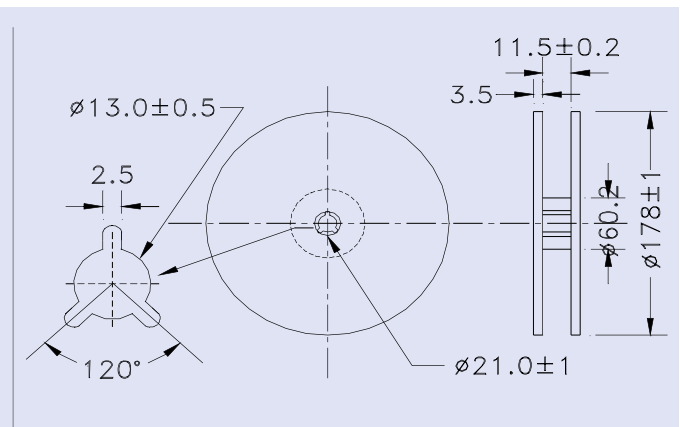
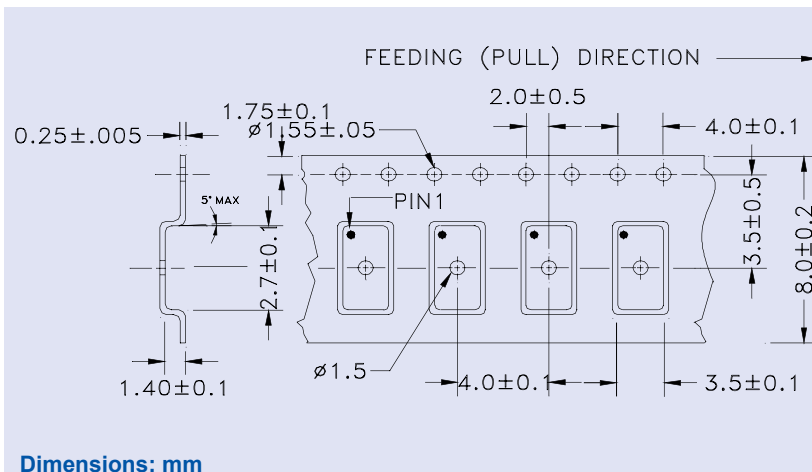
## Recommended land pattern



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

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

## TAPE & REEL: Tape and reel 1,000 pcs/reel



Dimensions: mm

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