SMD CMOS PROGRAMMABLE CRYSTAL OSCILLATOR

AP3S

3.2 x 2.5 x 1.2mm

Pb 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
Frequency Range (3.3V)	MHz	1	--	200
(2.5V)	MHz	1	--	166
(1.8V)	MHz	1	--	133
Operating Temp. Range (See Options)	°C	-10	--	60
Freq. stability over operating temp.* (See Options)	ppm	-100	--	100
Input Voltage (Operating Vdd)	V	2.97	3.3	3.63
	V	2.25	2.5	2.75
	V	1.62	1.8	1.98
Input Current	mA	See Table 1		
Output Type	CMOS			
Output Load	pF	--	15	--
Output "0" level (3.3V)	V	--	--	0.33
(2.5V)	V	--	--	0.25
(1.8V)	V	--	--	0.18
Output "1" level (3.3V)	V	2.97	--	--
(2.5V)	V	2.25	--	--
(1.8V)	V	1.62	--	--
Symmetry	%	45	50	55
Standby Current	uA	--	--	10
Rise Time (10%->90% Vdd)	nSec	See Table 2		
Fall Time (90%->10% Vdd)	nSec	See Table 2		
Tri-state Function (Input to pin 1)		pin 1 : High or Open , pin 3 : Enable		
		pin 1 : Low , pin 3 : Disable		
Jitter peak-to-peak**	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 programing 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*	3.3 V	I	0°C to +50°C	J (***)	±20ppm	**Blank	OE	Blank	Bulk
1	2.5 V	E	'-20°C to +70°C	R	±25ppm	**B	PDB	T	Tape and Reel
2	1.8 V	F	-30°C to +70°C	K	±30ppm				
*3.3V : Standard		N	-30°C to +85°C	C	±50ppm				
		L	-40°C to +85°C						

Ask for Tube Package

(***) 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, <10µA when PDB enabled

ABRACON IS ISO 9001 / QS 9000 CERTIFIED

ABRACON CORPORATION

Visit www.abracon.com for Terms & Conditions of Sale **Revised: 09.24.08**

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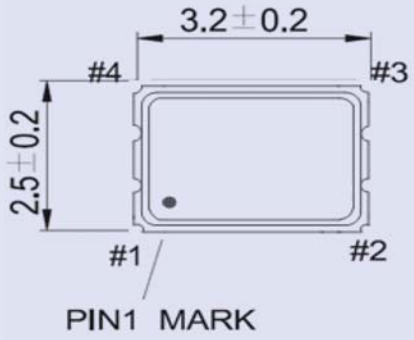
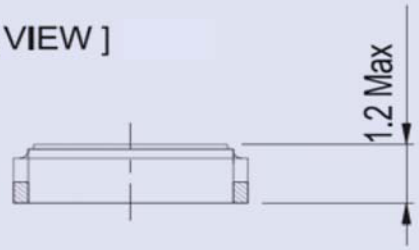
OUTLINE DRAWING:

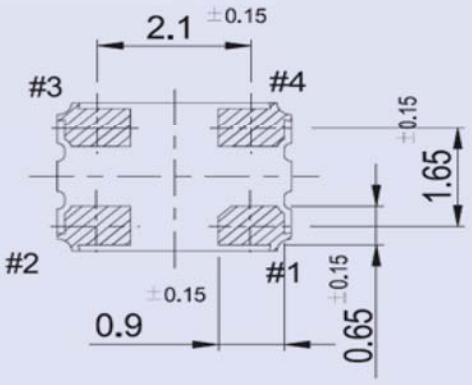
[TOP VIEW]



[SIDE VIEW]

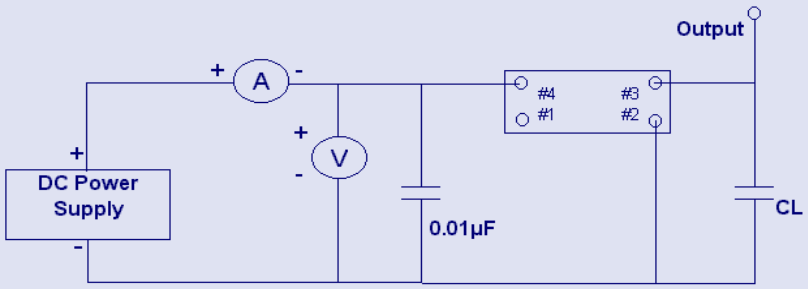


[BOTTOM VIEW]

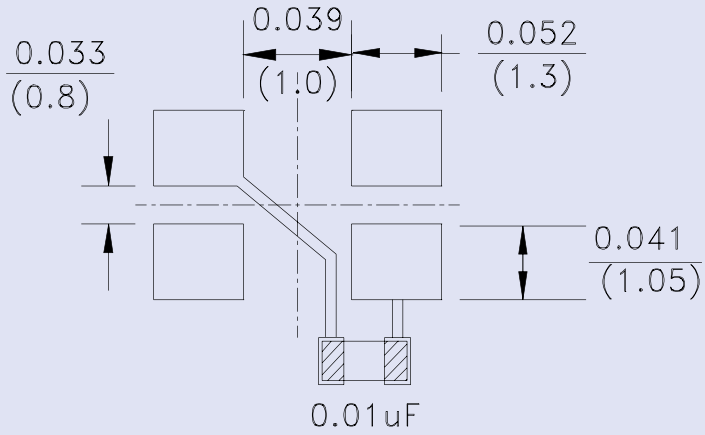


Dimensions: mm

TEST CIRCUIT:



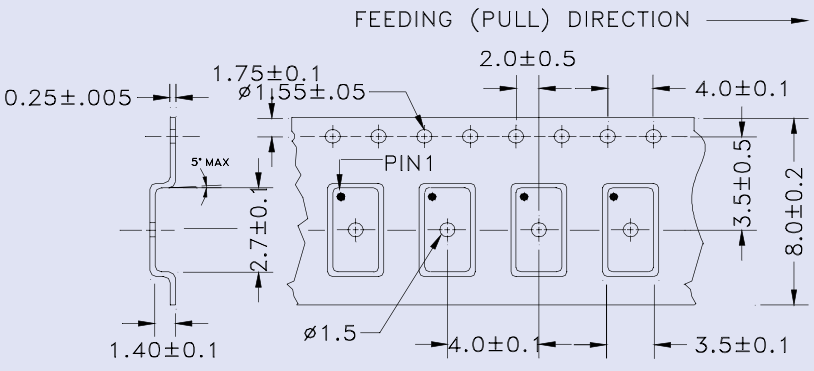
Recommended land pattern

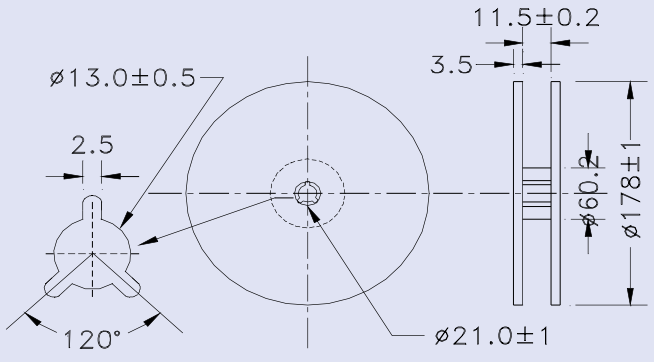


Note: It is recommended to use an approximately 0.01uF bypass capacitor between PIN 2 and 4.

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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