

# HCMOS COMPATIBLE SURFACE MOUNT LOW PROFILE (1.4max) CRYSTAL CLOCK OSCILLATOR

## ASV2 SERIES



**RoHS**  
Compliant



7.0 x 5.0 x 1.4mm

### FEATURES:

- Low height 1.4 mm max.
- HCMOS compatible, 1.8V to 3.3VDC
- Tristate function
- Suitable for RoHS reflow
- Available for -40°C to 85°C extended temperature
- Seam sealed package assures high reliability
- Low stand-by current

### APPLICATIONS:

- Clock signaling for  $\mu$  Processors, PC Motherboards and Graphic Cards
- Wireless communications

### STANDARD SPECIFICATIONS:

| Parameters                                                                             |                        | Minimum     | Typical     | Maximum     | Units    | Notes                                                                       |
|----------------------------------------------------------------------------------------|------------------------|-------------|-------------|-------------|----------|-----------------------------------------------------------------------------|
| Frequency Range                                                                        | 1.8V                   | 0.012       | -----       | 124.999     | MHz      |                                                                             |
|                                                                                        | 2.5V                   | 0.012       | -----       | 133         |          |                                                                             |
|                                                                                        | 3.3V                   | 0.012       | -----       | 133         |          |                                                                             |
| Operating Temperature                                                                  |                        | -10         | -----       | +70         | °C       | See options                                                                 |
| Storage Temperature                                                                    |                        | -55         | -----       | +125        | °C       |                                                                             |
| Overall Frequency Stability                                                            |                        | -100        | -----       | +100        | ppm      | See options                                                                 |
| Supply Voltage (Vdd)                                                                   |                        | 2.97        | 3.3         | 3.63        | V        | See options                                                                 |
| Input Current                                                                          | <b>Frequency</b>       | <b>3.3V</b> | <b>2.5V</b> | <b>1.8V</b> | mA (max) |                                                                             |
|                                                                                        | 0.012MHz Fo < 0.048MHz | 5           | 5           | N/A         |          |                                                                             |
|                                                                                        | 0.048MHz Fo < 1.5MHz   | 5           | 5           | 5           |          |                                                                             |
|                                                                                        | 1.5MHz Fo < 20MHz      | 7           | 7           | 5           |          |                                                                             |
|                                                                                        | 20MHz Fo < 50MHz       | 20          | 15          | 15          |          |                                                                             |
|                                                                                        | 50MHz Fo < 70MHz       | 30          | 20          | 15          |          |                                                                             |
|                                                                                        | 70MHz Fo < 125MHz      | 30          | 20          | 20          |          |                                                                             |
|                                                                                        | 125MHz Fo 133MHz       | 40          | 30          | N/A         |          |                                                                             |
|                                                                                        |                        |             |             |             |          |                                                                             |
|                                                                                        |                        |             |             |             |          |                                                                             |
|                                                                                        |                        |             |             |             |          |                                                                             |
|                                                                                        |                        |             |             |             |          |                                                                             |
|                                                                                        |                        |             |             |             |          |                                                                             |
|                                                                                        |                        |             |             |             |          |                                                                             |
| Symmetry (@ 1/2Vdd)                                                                    |                        | 40          | 50          | 60          | %        | See options                                                                 |
| Rise and Fall Time (Tr/Tf)**                                                           | <b>Frequency</b>       | <b>3.3V</b> | <b>2.5V</b> | <b>1.8V</b> | ns (max) | Measured between 10% and 90% of Vdd with 15pF load                          |
|                                                                                        | 0.012MHz Fo < 1.0MHz   | 200         | 200         | N/A         |          |                                                                             |
|                                                                                        | 1.0MHz Fo < 20MHz      | 10          | 10          | 10          |          |                                                                             |
|                                                                                        | 20MHz Fo < 50MHz       | 6           | 6           | 6           |          |                                                                             |
|                                                                                        | 50MHz Fo < 70MHz       | 3           | 3           | 3           |          |                                                                             |
|                                                                                        | 70MHz Fo < 125MHz      | 3           | 3           | 3           |          |                                                                             |
|                                                                                        | 125MHz Fo 133MHz       | 3           | 3           | N/A         |          |                                                                             |
|                                                                                        |                        |             |             |             |          |                                                                             |
|                                                                                        |                        |             |             |             |          |                                                                             |
|                                                                                        |                        |             |             |             |          |                                                                             |
|                                                                                        |                        |             |             |             |          |                                                                             |
|                                                                                        |                        |             |             |             |          |                                                                             |
| Output Load                                                                            |                        |             |             | 15          | pF       | CMOS (5TTL compatible)                                                      |
| Output Voltage                                                                         | VOH                    | 0.9*Vdd     | -----       | -----       | V        |                                                                             |
|                                                                                        | VOL                    | -----       | -----       | 0.1*Vdd     | V        |                                                                             |
| Start-up Time                                                                          |                        | -----       | -----       | 8.0         | ms       |                                                                             |
| Tri-state function (Stand-by) :                                                        | Vdd                    | VIH         | -----       | VIL         | V        | "1" (VIH $\geq$ 0.7*Vdd) or Open: Oscillation<br>"0" (VIH < 0.3*Vdd) : Hi Z |
|                                                                                        | 1.8                    | 1.26        | -----       | 0.5         |          |                                                                             |
|                                                                                        | 2.5                    | 1.75        | -----       | 0.5         |          |                                                                             |
|                                                                                        | 3.3                    | 2.0         | -----       | 0.5         |          |                                                                             |
| Disable current                                                                        |                        | -----       | -----       | 10          | uA       |                                                                             |
| Absolute Period jitter (Reference only. Please contact Abracon for each frequencies.): |                        | -----       | -----       | 40.0        | ps       |                                                                             |
| Aging                                                                                  |                        | -5.0        | -----       | +5.0        | ppm      | @+25°C First year                                                           |



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7.0 x 5.0 x 1.4mm

## OPTIONS & PART IDENTIFICATION:

(Left blank if standard)

ASV2  -  MHz -   -  -

### P/N and Vdd (V)

ASV2: 3.3 ±10%  
ASV21: 2.5 ±10%  
ASV22: 1.8 ±10%

### Frequency in MHz

e.g. 24.576MHz  
14.31818MHz  
26.000MHz

### Packaging

Blank: Bulk  
T: Tape & Reel

### Output Load

Blank: 15 pF  
L1: 50 pF  
L2: 15 TTL  
L3: 50 TTL

### Operating Temp.

I: 0°C ~ +50°C  
D: -10°C ~ +60°C  
E: -20°C ~ +70°C  
F: -30°C ~ +70°C  
N: -30°C ~ +85°C  
L: -40°C ~ +85°C

### Freq. Stability

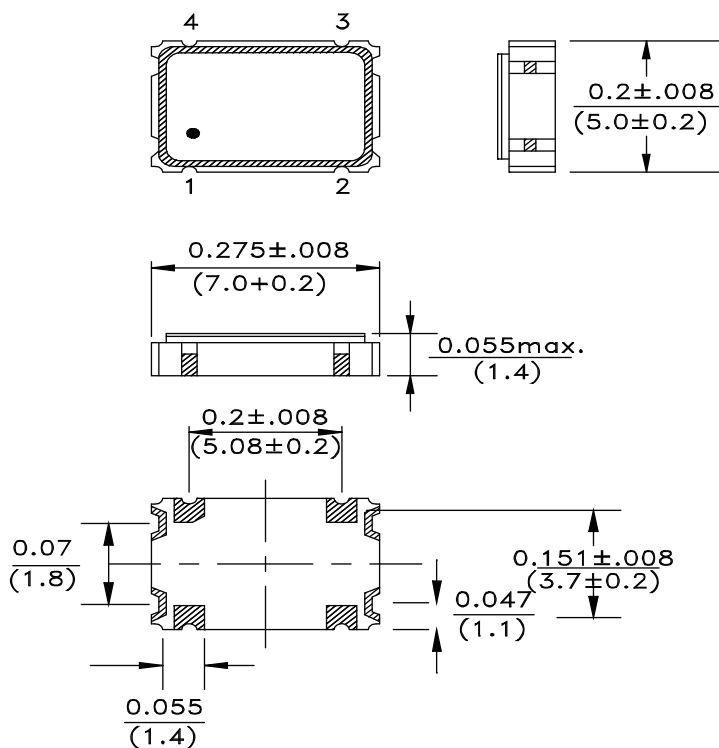
J: ± 20 ppm(\*)  
R: ± 25 ppm  
K: ± 30 ppm  
H: ± 35 ppm  
C: ± 50 ppm

### Symmetry

Blank: 40/60% @1/2Vdd  
S: 45/55% @1/2Vdd

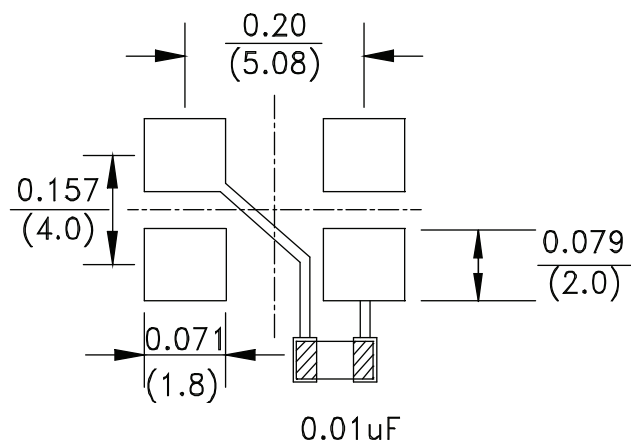
(\*) Temp option I, D, E, F,  
N and -10°C ~ +70°C only.

## OUTLINE DRAWING:



Bottom view

### Recommended land pattern



Dimensions: mm

| PIN | FUNCTION                |
|-----|-------------------------|
| 1   | Tristate Enable/Disable |
| 2   | GND/Case                |
| 3   | Output                  |
| 4   | Vdd                     |

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



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ASV2 SERIES

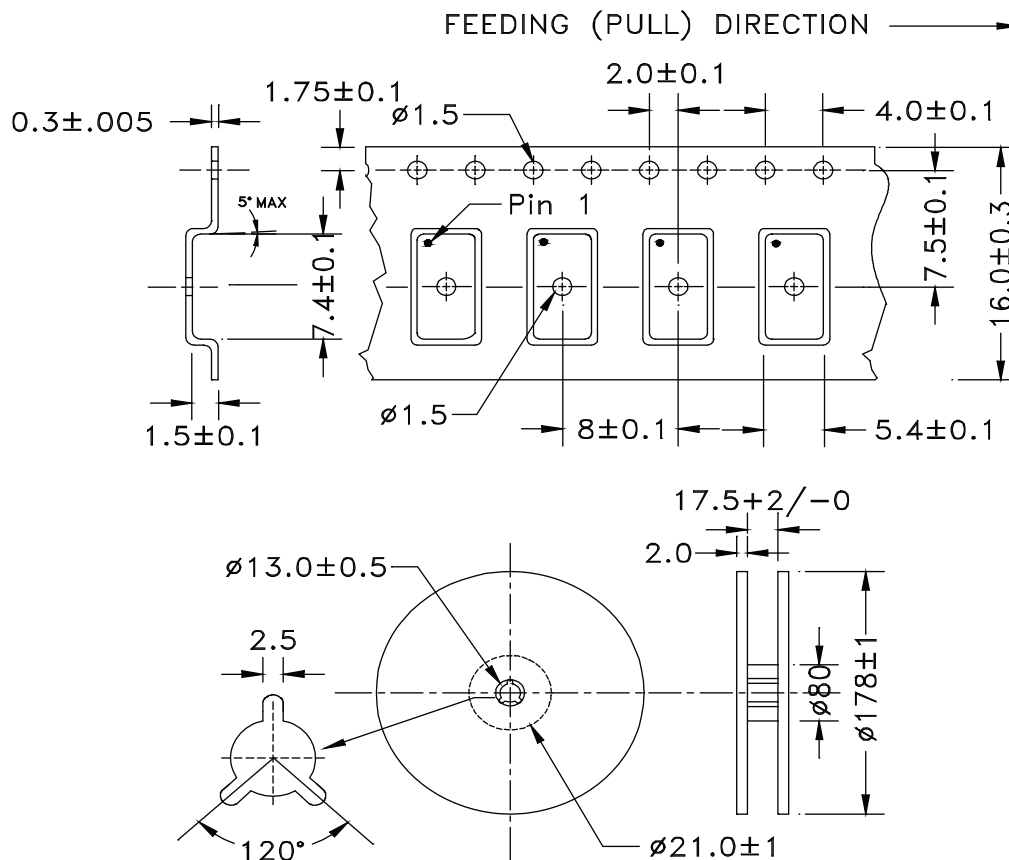


RoHS  
Compliant



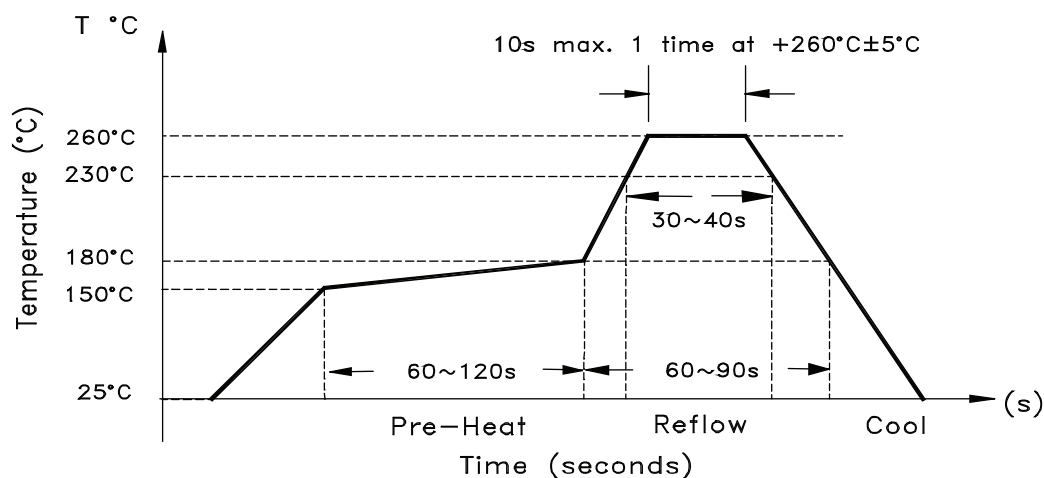
7.0 x 5.0 x 1.4mm

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



Dimensions: mm

## REFLOW PROFILE:



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Need a test socket for the ASV2 Series? To view compatible **PRECISION TEST & BURN-IN SOCKETS** for these parts, [click here](#). P/N AXS-7050-04-17

ABRACON IS  
ISO9001:2008  
CERTIFIED



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