

# HCMOS SURFACE-MOUNT CRYSTAL CLOCK OSCILLATOR

## ASA SERIES

Moisture Sensitivity Level (MSL) – This product is  
Hermetically Sealed and not Moisture Sensitive -  
MSL = N/A: Not Applicable



RoHS  
Compliant



2.0 x 1.6 x 0.7mm

### FEATURES:

- Ultra miniature package, 2.0 x 1.6 x 0.7mm
- Tri-state function
- Suitable for high density SMT
- Suitable for RoHS compliant reflow process
- Seam sealed package assures high reliability

### APPLICATIONS:

- CCD clock for VTR camera
- Computers and peripherals
- Portable electronics
- Mobile communication, PDA

### STANDARD SPECIFICATIONS:

| Parameters                        |                | Minimum                                                     | Typical | Maximum | Units | Notes                                          |     |      |
|-----------------------------------|----------------|-------------------------------------------------------------|---------|---------|-------|------------------------------------------------|-----|------|
| Frequency Range                   |                | 1.0                                                         | ----    | 80      | MHz   |                                                |     |      |
| Operating Temperature             |                | -10                                                         | ----    | +60     | °C    | See options                                    |     |      |
| Storage Temperature               |                | -40                                                         | ----    | +85     | °C    |                                                |     |      |
| Overall Frequency Stability*      |                | -50                                                         | ----    | +50     | ppm   | See options                                    |     |      |
| Supply Voltage (Vdd)              |                | 2.97                                                        | 3.3     | 3.66    | V     | Standard                                       |     |      |
|                                   |                | 2.25                                                        | 2.5     | 2.75    |       | Option 1 (CMOS )                               |     |      |
|                                   |                | 1.62                                                        | 1.8     | 1.98    |       | Option 2 (CMOS)                                |     |      |
| Supply Current (I <sub>dd</sub> ) | Vdd = 3.3 V    | -----                                                       | 2.0     | 5.0     | mA    | 1MHz ≤ F ≤ 20 MHz                              |     |      |
|                                   |                | -----                                                       | 4.0     | 10.0    |       | 20 MHz < F ≤ 50 MHz                            |     |      |
|                                   |                | -----                                                       | 7.0     | 15.0    |       | 50 MHz < F ≤ 80 MHz                            |     |      |
|                                   | Vdd = 2.5 V    | -----                                                       | 2.0     | 5.0     |       | 1MHz ≤ F ≤ 20 MHz                              |     |      |
|                                   |                | -----                                                       | 3.0     | 10.0    |       | 20 MHz < F ≤ 50 MHz                            |     |      |
|                                   |                | -----                                                       | 5.0     | 10.0    |       | 50 MHz < F ≤ 80 MHz                            |     |      |
|                                   | Vdd = 1.8 V    | -----                                                       | 1.5     | 5.0     |       | 1MHz ≤ F ≤ 20 MHz                              |     |      |
|                                   |                | -----                                                       | 2.5     | 5.0     |       | 20 MHz < F ≤ 50 MHz                            |     |      |
|                                   |                | -----                                                       | 4.0     | 10.0    |       | 50 MHz < F ≤ 80 MHz                            |     |      |
|                                   | Output Load    |                                                             | -----   | -----   |       | 15                                             | pF  |      |
|                                   |                |                                                             | -----   | -----   |       | 2                                              | TTL |      |
|                                   | Output Voltage | V <sub>OH</sub>                                             | 0.9*Vdd | -----   |       | -----                                          | V   | CMOS |
| V <sub>OL</sub>                   |                | -----                                                       | -----   | 0.1*Vdd | CMOS  |                                                |     |      |
| V <sub>OH</sub>                   |                | 2.4                                                         | -----   | -----   | TTL   |                                                |     |      |
| V <sub>OL</sub>                   |                | -----                                                       | -----   | 0.4     | TTL   |                                                |     |      |
| Tri-state function                |                | "1" (VIH≥0.7*Vdd) : Oscillation<br>"0" (VIH<0.3*Vdd) : Hi Z |         |         |       | Pin 1 must be pulled<br>“high” for oscillation |     |      |
| Aging                             |                | -3.0                                                        | -----   | +3.0    | ppm   | @+25°C First year                              |     |      |
| Symmetry @1/2Vdd                  |                | 40                                                          | 50      | 60      | %     | Standard                                       |     |      |
|                                   |                | 45                                                          | 50      | 55      |       | Option S                                       |     |      |
| Start-up Time                     |                |                                                             |         | 10.0    | ms    |                                                |     |      |
| Rise/Fall Time (Tr/Tf)            |                |                                                             |         | 10.0    | ns    |                                                |     |      |

\*Overall frequency stability includes initial frequency tolerance @+25°C and stability over the operating temperature.

### OPTIONS AND PART IDENTIFICATION:

(Left blank if standard)

ASA  -  MHz -  -  -  -

| Supply Voltage  |
|-----------------|
| Blank: 3.3V±10% |
| 1: 2.5 V±10%    |
| 2: 1.8 V±10%    |

| Packaging               |
|-------------------------|
| Blank: Bulk             |
| T: Tape & Reel (1kpcs)  |
| T3: Tape & Reel (3kpcs) |

| Frequency in MHz                                         |
|----------------------------------------------------------|
| Please specify the frequency in MHz.<br>e.g. 14.31818MHz |

| Operating Temp.      |
|----------------------|
| Blank: -10°C ~ +60°C |
| E: -20°C ~ +70°C     |
| L: -40°C ~ +85°C     |

| Overall Freq. Stability |
|-------------------------|
| Blank: ±50ppm           |
| R**: ±25ppm             |
| K***: ±30 ppm           |

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

\*\*Available for -10 to +60°C only

\*\*\*Available for -10 to +60°C, option E only

Contact Abracon for tighter frequency stability options

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ASA SERIES

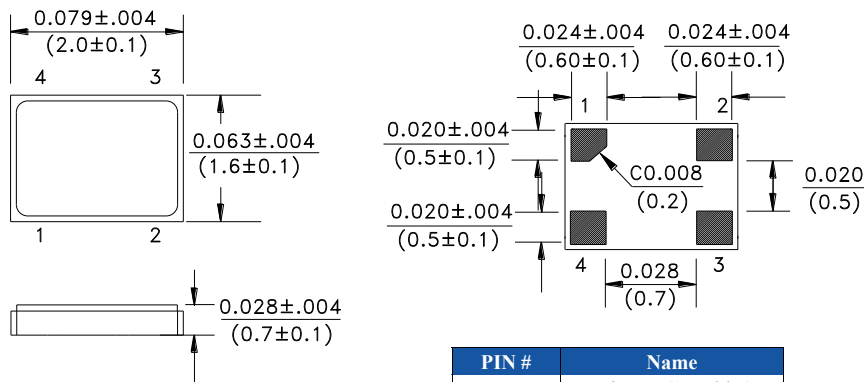


RoHS  
Compliant

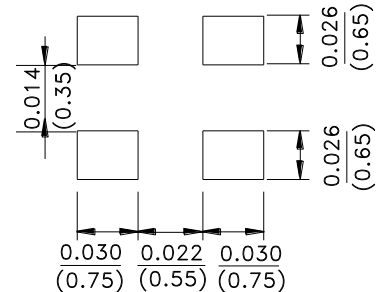


2.0 x 1.6 x 0.7mm

## OUTLINE DRAWING:



Recommended land pattern

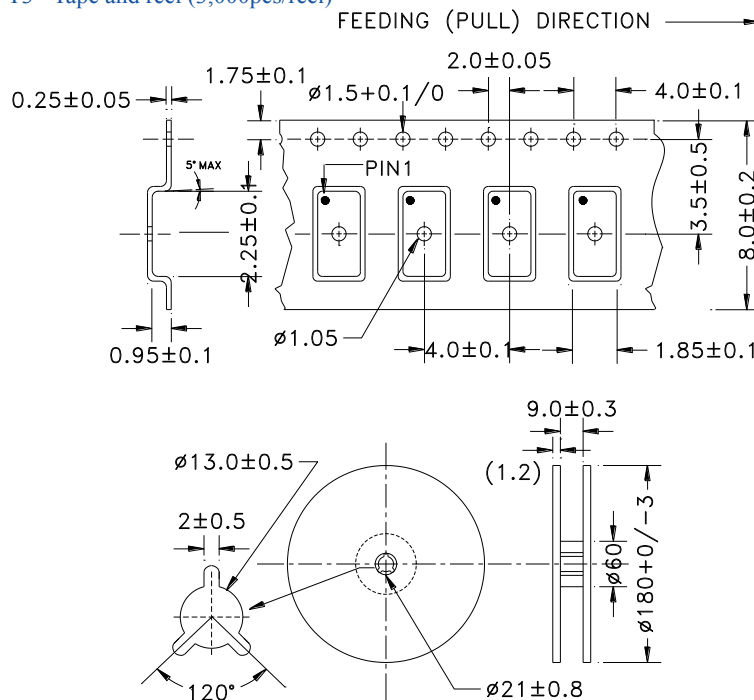


Dimensions: inches (mm)

| PIN # | Name                 |
|-------|----------------------|
| 1     | Tri-state (Stand-by) |
| 2     | GND                  |
| 3     | Output               |
| 4     | Vdd                  |

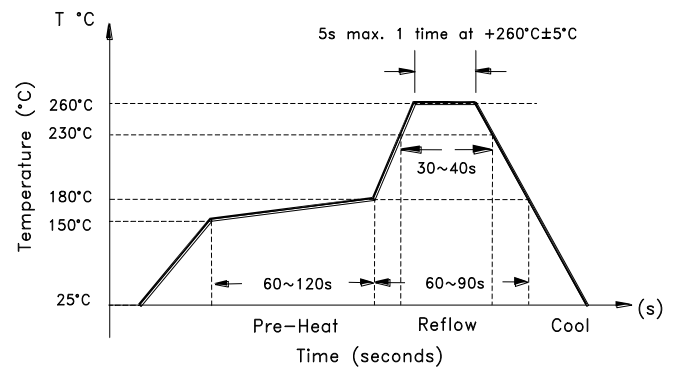
## TAPE & REEL:

T= Tape and reel (1,000pcs/reel)  
T3= Tape and reel (3,000pcs/reel)



Dimensions: mm

## REFLOW PROFILE:



Need a test socket for the ASA Series? To view compatible **PRECISION TEST & BURN-IN SOCKETS** for these parts, [click here](#).

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