

# HALF SIZE DIP LOW VOLTAGE 3.3VHCMOS/TTL COMPATIBLE CRYSTAL CLOCK OSCILLATOR

ACHL Series



RoHS  
Compliant



13.2 x 13.2 x 5.5mm

## FEATURES:

- Tri-state Enable/Disable option
- Low supply voltage 3.3V
- HCMOS and TTL compatible
- Tight symmetry option 50% +/-5%

## APPLICATIONS:

- Clock signal sources for digital chips and microprocessors
- Low power applications

## STANDARD SPECIFICATIONS:

| Parameters                  |                       | Minimum | Typical | Maximum | Units | Notes                                                                 |
|-----------------------------|-----------------------|---------|---------|---------|-------|-----------------------------------------------------------------------|
| Frequency Range             |                       | 0.400   | ----    | 160.000 | MHz   |                                                                       |
| Operating Temperature       |                       | 0       | ----    | +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     |                                                                       |
| Input Current               | 0.400MHz ~ 24.999MHz  | ----    | ----    | 20      | mA    |                                                                       |
|                             | 25.000MHz ~ 99.999MHz | ----    | ----    | 40      |       |                                                                       |
|                             | 100.000MHz ~ 16000MHz | ----    | ----    | 80      |       |                                                                       |
| Symmetry (@ 1/2Vdd)         |                       | 40      | 50      | 60      | %     | See options                                                           |
| Rise and Fall Time (Tr/Tf)  | 0.400MHz ~ 24.999MHz  | ----    | ----    | 10      | ns    |                                                                       |
|                             | 25.000MHz ~ 99.999MHz | ----    | ----    | 5       |       |                                                                       |
|                             | 100.000MHz ~ 16000MHz | ----    | ----    | 4       |       |                                                                       |
| Output Load                 |                       | ----    | ----    | 15      | pF    | See options                                                           |
|                             |                       | ----    | ----    | 5       | TTL   |                                                                       |
| Output Voltage              | VOH                   | 0.9*Vdd | ----    | ----    | V     |                                                                       |
|                             | VOL                   | ----    | ----    | 0.1*Vdd | V     |                                                                       |
| Tri-state Function          | VIH                   | 2.2     | ----    | ----    | V     | "1" or Open:<br>Oscillation                                           |
|                             | VIL                   | ----    | ----    | 0.8     | V     | "0": Output disable<br>(Hi Z)                                         |
| Disable/Enable time         |                       |         |         | 100     | ns    | For option A only                                                     |
| Start-up Time               |                       | ----    | 1       | 10      | ms    |                                                                       |
| Phase Jitter RMS (12~20MHz) |                       | ----    | ----    | 1       | ps    | Reference only.<br>Please contact Abracon for<br>specific frequencies |
| Aging                       |                       | -5.0    | ----    | +5.0    | ppm   | @+25°C First year                                                     |

\* Overall frequency stability includes initial tolerance, temperature stability, and aging.

## OPTIONS & PART IDENTIFICATION:

(Left blank if standard)

ACHL -  MHz -  -  -  -  -

| Frequency in MHz |
|------------------|
| e.g. 24.576MHz   |
| 14.31818MHz      |
| 26.000MHz        |

| 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%<br>@1/2Vdd |
| S: 45/55%<br>@1/2Vdd     |

(\*) Temp option I,  
D, E and 0°C ~  
+70°C only.

| Tri-state             |
|-----------------------|
| Blank: No Tri-state   |
| A: Tri-state on pin 1 |

| Output Load |
|-------------|
| Blank: 15pF |
| 30: 30pF    |
| 50: 50pF    |

| Pin form          |
|-------------------|
| G: Gull Wing      |
| G3: Gull Wing     |
| Q30: 0.30" (7.62) |
| Q25: 0.25" (6.35) |
| Q20: 0.20" (5.08) |
| Q15: 0.15" (3.81) |
| Q10: 0.10" (2.54) |

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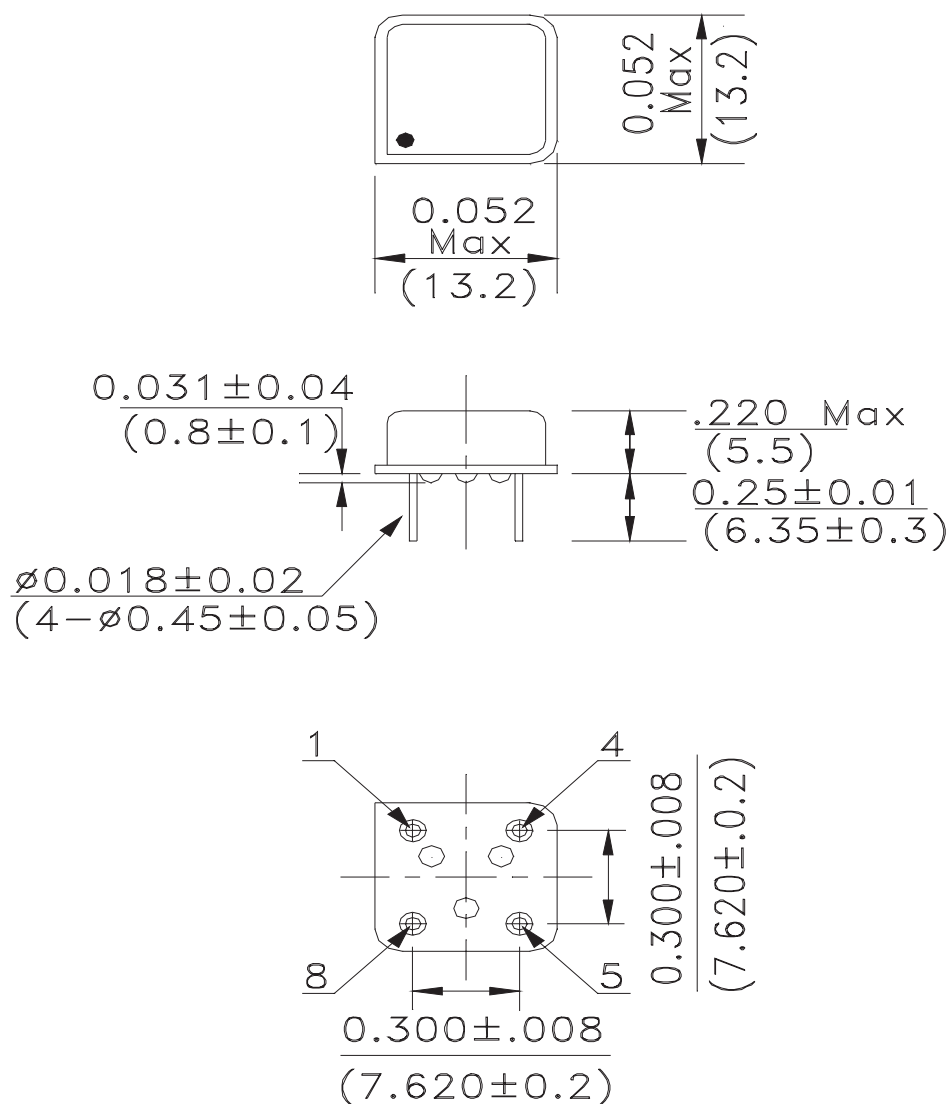


RoHS  
Compliant



13.2 x 13.2 x 5.5mm

## OUTLINE DIMENSIONS:



| PIN | FUNCTION                       |
|-----|--------------------------------|
| 1   | NC or Tristate Enable/ Disable |
| 4   | GND                            |
| 5   | Output                         |
| 8   | VDD                            |

Note: Recommended using an approximately 0.01uF bypass capacitor between PIN 4 and 8.

Dimensions: inches (mm)

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