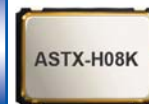


# 32.768KHz TEMPERATURE COMPENSATED CRYSTAL OSCILLATOR

ASTX-H08K

\* RoHS COMPLIANT



7.0 x 5.0 x 2.5mm

## FEATURES:

- Compact and low in height.
- 0.01uF decoupling capacitor built-in
- Wide frequency range; frequency stability

## APPLICATIONS:

- Test Equipment
- Cellular Base Station & GPS Navigation System
- Mobile communication equipment.

## STANDARD SPECIFICATIONS:

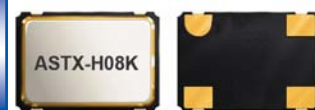
| PARAMETERS                             |                                                        |
|----------------------------------------|--------------------------------------------------------|
| Frequency Range                        | 32.768KHz                                              |
| Operating Temperature                  | - 30° C to + 75° C (See Table 1 for options)           |
| Storage Temperature                    | - 50° C to + 100° C                                    |
| Frequency Tolerance @ 25°C             | ± 3.0 ppm                                              |
| Frequency Stability vs. Temp.          | ± 2.5 ppm standard (See Table 1 for options)           |
| Frequency Stability vs. Aging          | ± 1 ppm / 1st year                                     |
| Frequency Stability vs. Supply Voltage | ± 0.3 ppm (±5% change)                                 |
| Frequency Stability vs. Load ±10%      | ± 0.3 ppm (±10% change)                                |
| Frequency Stability vs. Reflow         | ± 1 ppm max. 1 reflow and measured 24 hours afterwards |
| Supply Voltage                         | 3.0V Standard (See Table 2 for options)                |
| Output Voltage Level                   | 3.0V : "Logic 1" 2.7V min, "Logic 2" 0.3V max.         |
| Output Load                            | 15pF                                                   |
| Phase Noise @ 25°C                     | -65dBc/Hz @ 10Hz offset.                               |
|                                        | -100dBc/Hz @ 100Hz offset                              |
|                                        | -130dBc/Hz @ 1KHz offset                               |
|                                        | -150dBc/Hz @ 10KHz offset                              |
|                                        | -150dBc/Hz @ 100kHz offset                             |
| Current Consumption                    | 3.5mA typ @ +3.3V / 7mA typ. @ +5.0V                   |
| Rise and Fall Time                     | 20% to 80% waveform: 3nS typ.                          |
| Duty Cycle (Symmetry)                  | 40/60%max @ 1/2V <sub>DD</sub> (see option)            |
| Start-up Time                          | 2msec typ.                                             |
| Output Wave Form                       | Square wave                                            |
| Output Format                          | AC block, DC coupled                                   |



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7.0 x 5.0 x 2.5mm

## MARKING:

- TUH  
AH08K ZYX

### Note 1:

TUH : Frequency  
T = First " ten " digit of frequency  
U = First " unit " of frequency  
H = First " tenth " of frequency  
Example: 100 for 10.0 MHz  
143 for 14.31818 MHz

ZY : Date Code  
Z = Month (A to L)  
Y = Year (6 for 2006)  
X = Traceability

## OPTIONS & PART IDENTIFICATION:

ASTX-H08K - 32.768KHz - Voltage - Temperature & Freq Stability - Symmetry - Packaging

### Voltage option:

Blank for 3.0V  
A for 2.8V  
B for 3.3V  
C for 5V

### Symmetry option:

S for 45/55% @1/2Vdd

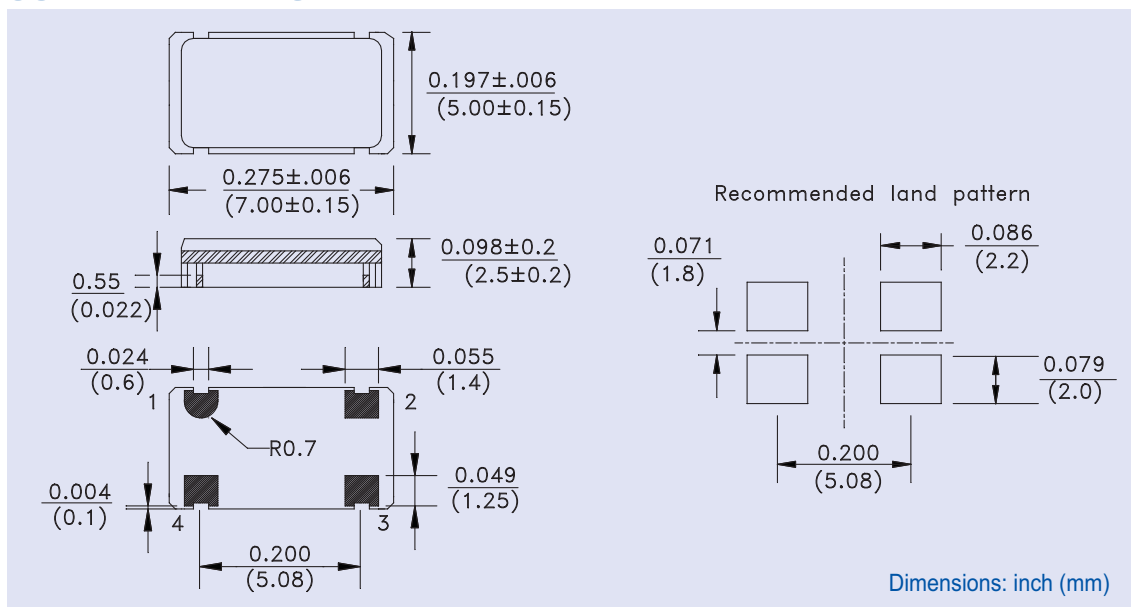
### Packaging option:

T for Tape and Reel

### Temp & Stability option:

See Table 1

## OUTLINE DRAWING:



| PIN NO. | CONNECTIONS |
|---------|-------------|
| 1       | NC          |
| 2       | Ground      |
| 3       | Output      |
| 4       | VCC         |

## TABLE 1:

|                | ±1ppm | ±1.5ppm | ±2.0ppm | ±2.5ppm    |
|----------------|-------|---------|---------|------------|
| -10°C to 60°C  | D10   | D15     | D20     | D25        |
| -20°C to +70°C | E10   | E15     | E20     | E25        |
| -30°C to 75°C  | F10   | F15     | F20     | <b>F25</b> |
| -40°C to 85°C  |       | G15     | G20     | G25        |

< Standard