

2.0 x 1.6mm Ceramic SMD

### Product Features

- AT Cut 32.768 kHz XO
- CMOS compatible logic levels
- Ultra low active current ( $< 30\mu\text{A}$ )
- Very tight temperature stability
- Designed for standard reflow and washing techniques
- Pb-free and RoHS/Green compliant

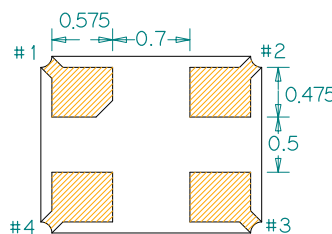
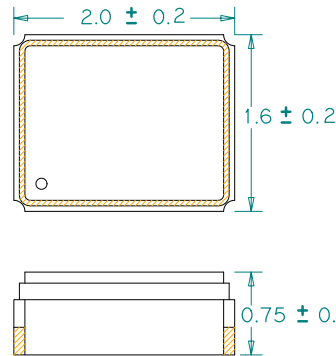
### Product Description

The KX201 Series real time clock oscillator achieves superb stability over a broad range of operating conditions. It utilizes Pericom proprietary technology to achieve ultra low current less than  $30\mu\text{A}$ . The output clock signal is compatible with LVCMOS/LVTTL logic levels. The device, available on tape and reel, is contained in a 2.0 x 1.6mm surface-mount ceramic package.

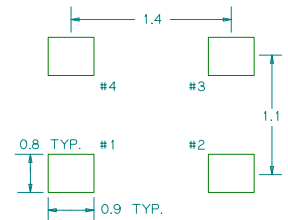
### Applications

- Real-Time Clock Oscillator where low current and tight stability are needed

### Package: (Scale: none; Dimensions are in mm)



### Recommended Land Pattern:



### Pin Functions:

| Pin | Function        |
|-----|-----------------|
| 1   | OE Function     |
| 2   | Ground          |
| 3   | Clock Output    |
| 4   | V <sub>DD</sub> |

### Part Ordering Information:

**KX 201 V I S 032.768000**

| <p>Voltage:</p> <p>1 = +3.3V</p> <p>2 = +2.5V</p> <p>3 = +1.8V</p> | <p>Stability and Temp Range:</p> <table border="1"> <thead> <tr> <th>Stability</th> <th>Temp Range</th> </tr> </thead> <tbody> <tr> <td>A = +/-20 ppm</td> <td>-20/+70°C</td> </tr> <tr> <td>B = +/-25 ppm</td> <td>-20/+70°C</td> </tr> <tr> <td>C = +/-50 ppm</td> <td>-20/+70°C</td> </tr> <tr> <td>D = +/-25 ppm</td> <td>-40/+85°C</td> </tr> <tr> <td>E = +/-50 ppm</td> <td>-40/+85°C</td> </tr> <tr> <td>Z = Reference Design</td> <td></td> </tr> </tbody> </table> | Stability | Temp Range | A = +/-20 ppm | -20/+70°C | B = +/-25 ppm | -20/+70°C | C = +/-50 ppm | -20/+70°C | D = +/-25 ppm | -40/+85°C | E = +/-50 ppm | -40/+85°C | Z = Reference Design |  | <p>Internal #:</p> <p>0 ~ 9</p> | <p>Frequency:</p> <p>FFFFFFFF</p> <p>kHz, "3 digits/decimal/6 digits" format</p> |
|--|--|-----------|------------|---------------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|----------------------|--|---------------------------------|--|
| Stability  | Temp Range   |           |            |               |           |               |           |               |           |               |           |               |           |                      |  |                                 |  |
| A = +/-20 ppm  | -20/+70°C  |           |            |               |           |               |           |               |           |               |           |               |           |                      |  |                                 |  |
| B = +/-25 ppm  | -20/+70°C  |           |            |               |           |               |           |               |           |               |           |               |           |                      |  |                                 |  |
| C = +/-50 ppm  | -20/+70°C  |           |            |               |           |               |           |               |           |               |           |               |           |                      |  |                                 |  |
| D = +/-25 ppm  | -40/+85°C  |           |            |               |           |               |           |               |           |               |           |               |           |                      |  |                                 |  |
| E = +/-50 ppm  | -40/+85°C  |           |            |               |           |               |           |               |           |               |           |               |           |                      |  |                                 |  |
| Z = Reference Design   |  |           |            |               |           |               |           |               |           |               |           |               |           |                      |  |                                 |  |

Following the above format, Saronix-eCera part numbers will be assigned upon confirmation of exact customer requirements.

### Electrical Performance

| Parameter                       | Min.                | Typ.   | Max.                | Units | Notes                                     |
|---------------------------------|---------------------|--------|---------------------|-------|---|
| Output Frequency                |                     | 32.768 |                     | kHz   |   |
| Supply Voltage                  | +1.71               | +1.8   | +1.89               | V     | See part ordering options                 |
|                                 | +2.25               | +2.5   | +2.75               | V     |   |
|                                 | +3.0                | +3.3   | +3.6                | V     |   |
| Supply Current, Output Enabled  |                     | 25     | 30                  | μA    | With load                                 |
| Supply Current, Standby Mode    |                     |        | 0.5                 | μA    | Output Hi-Z                               |
| Frequency Stability             |                     |        | ±50                 | ppm   | See part ordering options, and note 1     |
| Operating Temperature Range     | -40                 |        | +85                 | C     | See part ordering options                 |
| Output Logic 0, V <sub>OL</sub> |                     |        | 0.1 V <sub>DD</sub> | V     |   |
| Output Logic 1, V <sub>OH</sub> | 0.9 V <sub>DD</sub> |        |                     | V     |   |
| Output Load                     |                     |        | 15                  | pF    | See Note 2                                |
| Duty Cycle                      | 45                  |        | 55                  | %     | measured 50% of V <sub>DD</sub>           |
| Rise and Fall Time              |                     | 40     | 50                  | ns    | measured 20/80% of V <sub>DD</sub> = 1.8V |
|                                 |                     | 30     | 40                  | ns    | measured 20/80% of V <sub>DD</sub> = 2.5V |
|                                 |                     | 20     | 30                  | ns    | measured 20/80% of V <sub>DD</sub> = 3.3V |
| Start-up time                   |                     |        | 10                  | ms    |   |

#### Notes:

- Stability includes all combinations of operating temperature, load changes, rated input (supply) voltage changes, initial calibration tolerance (25°C), aging (1 year at 25°C average effective ambient temperature), shock and vibration.
- For specifications other than those listed, please contact sales.

### Output Enable / Disable Function

| Parameter   | Min.                | Typ. | Max.                | Units | Notes          |
|---|---------------------|------|---------------------|-------|----------------|
| Input Voltage (pin 1), Output Enable                      | 0.7 V <sub>DD</sub> |      |                     | V     | or open        |
| Input Voltage (pin 1), Output Disable (low power standby) |                     |      | 0.3 V <sub>DD</sub> | V     | Output is Hi-Z |
| Internal Pullup Resistance                                |                     | 100  |                     | kΩ    |                |
| Output Disable Delay                                      |                     |      | 100                 | ns    |                |
| Output Enable Delay                                       |                     |      | 10                  | ms    |                |

### Absolute Maximum Ratings

| Parameter           | Min. | Typ. | Max. | Units | Notes |
|---------------------|------|------|------|-------|-------|
| Storage Temperature | -55  |      | +125 | °C    |       |

For the latest product information visit: <http://www.pericom.com/products/timing/oscillators/KX201/>

For test circuit go to: [http://www.pericom.com/pdf/sre/tc\\_hcm0s2.pdf](http://www.pericom.com/pdf/sre/tc_hcm0s2.pdf)

For soldering reflow profile and reliability test ratings go to: <http://www.pericom.com/pdf/sre/reflow.pdf>

For tape and reel information go to: [http://www.pericom.com/pdf/sre/tr\\_2016\\_xo.pdf](http://www.pericom.com/pdf/sre/tr_2016_xo.pdf)

单击下面可查看定价，库存，交付和生命周期等信息

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