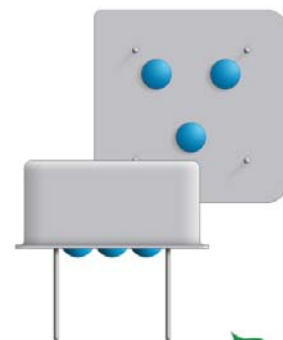


### 8 pin Dual-in-Line HCMOS Clock Oscillator

## Features

- Industry-standard 8 pin DIL package for compatibility
- Frequency range from 0.252kHz to 150MHz
- Choice of supply voltage 3.3 or 5.0 Volts DC
- Hermetically sealed package for reliability and low aging
- Optional Tristate function (Enable/Disable)



## General Specifications

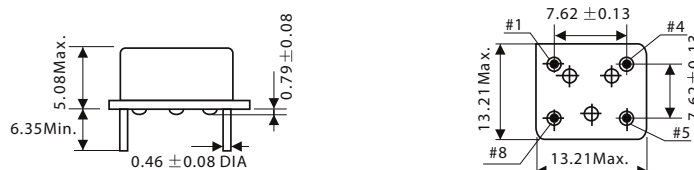
|                                                                                                                                                                                     |            |                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------------|
| Frequency Range                                                                                                                                                                     |            | 0.252 to 150.000MHz |
| Output Logic                                                                                                                                                                        |            | HCMOS               |
| Temperature Stability*                                                                                                                                                              |            | ±100ppm             |
|                                                                                                                                                                                     |            | ±50ppm              |
|                                                                                                                                                                                     |            | ±25ppm              |
| Aging per year                                                                                                                                                                      |            | ±5ppm               |
| Operating Temperature Range                                                                                                                                                         | Standard   | -10 to +70°C        |
|                                                                                                                                                                                     | Industrial | -40 to +85°C        |
| Storage Temperature Range                                                                                                                                                           |            | -55 to +125°C       |
| * Frequency stability is inclusive of calibration tolerance at 25°C, frequency change due to shock & vibration, ±10% supply voltage variation and stability over temperature range. |            |                     |

| Pin | Connection                      |
|-----|---------------------------------|
| 1   | NC or Tristate (Enable/Disable) |
| 4   | Ground                          |
| 5   | Output                          |
| 8   | +Vdd                            |

## Electrical Specifications

|                           |                      |                     |             |
|---------------------------|----------------------|---------------------|-------------|
| Supply Voltage            |                      | 3.3Vdd ±10%         | 5.0Vdd ±10% |
| Input Current             | 0.252 to 24.000MHz   | 5mA                 | 10mA        |
|                           | 24.100 to 50.000MHz  | 10mA                | 15mA        |
|                           | 50.100 to 70.000MHz  | 25mA                | 50mA        |
|                           | 70.100 to 80.000MHz  | 25mA                | 50mA        |
|                           | 80.100 to 150.000MHz | 60mA                | 60mA        |
| Output Voltage            | Logic High (Voh)     | 90% Vdd min.        |             |
|                           | Logic Low (Vol)      | 10% Vdd max.        |             |
| Output Symmetry           | Standard             | 40 to 60%           |             |
|                           | Tight                | 45 to 55%           |             |
| Output Load               | Standard             | 15pF max.           |             |
|                           | Medium               | 30pF max.           |             |
|                           | Heavy                | 50pF max.           |             |
| Rise and Fall Time        | 0.252 to 24.000MHz   | 10ns max.           | 10ns max.   |
|                           | 24.100 to 50.000MHz  | 6ns max.            | 6ns max.    |
|                           | 50.100 to 70.000MHz  | 6ns max.            | 6ns max.    |
|                           | 70.100 to 80.000MHz  | 4ns max.            | 4ns max.    |
|                           | 80.100 to 150.000MHz | 4ns max.            | 4ns max.    |
| Standby Function          |                      | Tristate (optional) |             |
| Output Eable/Disable Time |                      | 100ns max.          |             |
| Standby Current           |                      | 10μA max.           |             |
| Start Up Time             |                      | 10ms max.           |             |

## Mechanical Dimensions



## Part Numbering Guide

| Qantek Code | Package   | Option                                                | Supply Voltage         | Frequency Stability                                       | Frequency                                                                     | Operating Temperature Range          | Load Capacitance                    | Tight Symmetry Indicator | Packaging |
|-------------|-----------|-------------------------------------------------------|------------------------|-----------------------------------------------------------|-------------------------------------------------------------------------------|--------------------------------------|-------------------------------------|--------------------------|-----------|
| Q = Qantek  | X8 = DIP8 | N = not connected<br>T = Tristate<br>(Enable/Disable) | 33 = 3.3V<br>50 = 5.0V | A = $\pm 25$ ppm<br>B = $\pm 50$ ppm<br>C = $\pm 100$ ppm | in MHz, always<br>8 digits including<br>the decimal point<br>(f.ie. 20.00000) | A = -10 to +70°C<br>B = -40 to +85°C | 15 = 15pF<br>30 = 30pF<br>50 = 50pF | T = 45/55                | T = Tube  |

Example: QX8T33B20.00000B15T



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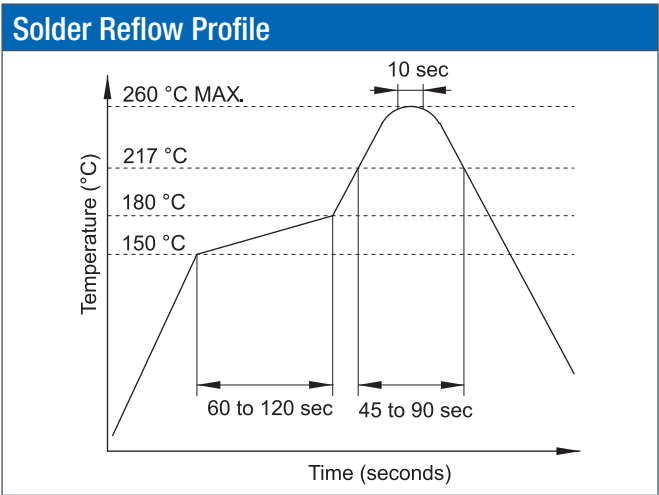
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QX8 Series

8 pin Dual-in-Line HCMOS Clock Oscillator

| Marking Code Guide                                                                                                                   |   |           |   |            |   |      |   |                   |         |
|--------------------------------------------------------------------------------------------------------------------------------------|---|-----------|---|------------|---|------|---|-------------------|---------|
| Contains frequency, Qantek manufacturing Code, production code (month and year), stability, temperature range and voltage indicator. |   |           |   |            |   |      |   |                   |         |
| Month Codes                                                                                                                          |   |           |   | Year Codes |   |      |   | Stability         |         |
| January                                                                                                                              | A | July      | G | 2010       | 0 | 2011 | 1 | ppm               | PN Code |
| February                                                                                                                             | B | August    | H | 2013       | 3 | 2014 | 4 | 25                | A       |
| March                                                                                                                                | C | September | I |            |   |      |   | 50                | B       |
| April                                                                                                                                | D | October   | J |            |   |      |   | 100               | C       |
| May                                                                                                                                  | E | November  | K |            |   |      |   | custom            | S       |
| June                                                                                                                                 | F | December  | L |            |   |      |   | Temperature Range |         |
|                                                                                                                                      |   |           |   |            |   |      |   | °C                | PN Code |
|                                                                                                                                      |   |           |   |            |   |      |   | -10 to +70°C      | A       |
|                                                                                                                                      |   |           |   |            |   |      |   | -40 to +85°C      | B       |
|                                                                                                                                      |   |           |   |            |   |      |   | custom            | S       |
|                                                                                                                                      |   |           |   |            |   |      |   | Voltage           |         |
|                                                                                                                                      |   |           |   |            |   |      |   | Volt              | PN Code |
|                                                                                                                                      |   |           |   |            |   |      |   | 3.3               | 3       |
|                                                                                                                                      |   |           |   |            |   |      |   | 5.0               | 5       |
|                                                                                                                                      |   |           |   |            |   |      |   | custom            | S       |

Example: First Line: 20.000 (Frequency) Second Line: QA1BB3 (Qantek – January – 2011 – ±50ppm – -40 to +85°C – 3.3V)



| Environmental Specifications |                               |
|------------------------------|-------------------------------|
| Mechanical Shock             | MIL-STD-202, Method 213, C    |
| Vibration                    | MIL-STD-202, Method 201 & 204 |
| Thermal Cycle                | MIL-STD, Method 1010, B       |
| Gross Leak                   | MIL-STD-202, Method 112       |
| Fine Leak                    | MIL-STD-202, Method 112       |

All specifications are subject to change without notice.