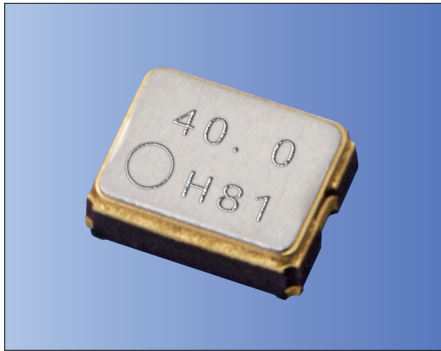




CMOS/ 1.8V to 3.3V/ 2.0×1.6mm



RoHS Compliant

**Features**

- Ultra Miniature ceramic package  
2.0 (L) × 1.6 (W) × 0.55 (H) mm (Typ.)
- Highly reliable with seam welding
- CMOS output
- Supply voltage Vcc=1.8V/ 2.5V/ 3.3V
- Wide operating voltage range 1.6 to 3.63V
- Low current consumption

Table 1

| Freq. Code | Tol. × 10 <sup>-6</sup> | Operating Temperature Range (°C) | Note   |
|------------|-------------------------|----------------------------------|--|
| 0          | ± 50                    | -10 to +70                       | Standard specifications                      |
| S          | ± 30                    |                                  | Please contact us for available frequencies. |
| U          | ± 25                    |                                  |  |
| F          | ± 100                   | -40 to +85                       |  |
| G          | ± 50                    |                                  |  |
| 6          | ± 50                    | -40 to +105                      |  |

**How to Order**

KC2016B 40.0000 C 1 □ E 00  
①                      ②                      ③ ④ ⑤ ⑥ ⑦

- ① Series
- ② Output Frequency
- ③ Output Type (CMOS)
- ④ Supply Voltage (1.8V, 2.5V, 3.3V Compatible)
- ⑤ Frequency Tolerance (See Table 1)
- ⑥ Symmetry/ INH Function (45/ 55%)
- ⑦ Individual Specification (STD Specification is "00")

Packaging (Tape & Reel 2000 pcs./ reel)

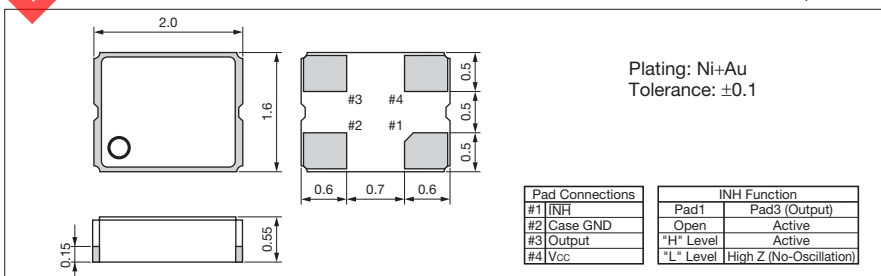
**Specifications**

| Item  | Symbol             | Conditions   | Min.   | Max.                | Unit |                    |
|---|--------------------|--|--|---------------------|------|--------------------|
| Output Frequency Range  | fo                 |  | 1.5  | 50                  | MHz  |                    |
| Frequency Tolerance   | f <sub>tol</sub>   | Initial tolerance, Operating temperature range, Rated power supply voltage change, Aging (1 year @25°C), Shock and vibration | Temp.: -40 to +85°C                              | -100                | +100 | × 10 <sup>-6</sup> |
|   |                    |  | Temp.: -10 to +70°C/ -40 to +85°C/ -40 to +105°C | -50                 | +50  |                    |
|   |                    |  | Temp.: -10 to +70°C                              | -30                 | +30  |                    |
|   |                    |  | Temp.: -10 to +70°C                              | -25                 | +25  |                    |
| Storage Temperature Range   | T <sub>stg</sub>   |  | -55  | +125                | °C   |                    |
| Operating Temperature Range   | T <sub>use</sub>   | Standard Specifications  | -10  | +70                 | °C   |                    |
|   |                    | Extend (Option)  | -40  | +85                 |      |                    |
| Max. Supply Voltage   | —                  |  | -0.6   | +6.0                | V    |                    |
| Supply Voltage  | V <sub>cc</sub>    |  | +1.6   | +3.63               | V    |                    |
| Current Consumption (Maximum Loaded/ 1.6<V <sub>cc</sub> ≤2.0V)             | I <sub>cc</sub>    | 1.5≤fo≤24MHz   | —  | 2.5                 | mA   |                    |
|   |                    | 24<fo≤40MHz  | —  | 3.5                 |      |                    |
|   |                    | 40<fo≤50MHz  | —  | 4.5                 |      |                    |
| Current Consumption (Maximum Loaded/ 2.0<V <sub>cc</sub> ≤2.8V)             | I <sub>cc</sub>    | 1.5≤fo≤24MHz   | —  | 3.0                 | mA   |                    |
|   |                    | 24<fo≤40MHz  | —  | 4.5                 |      |                    |
|   |                    | 40<fo≤50MHz  | —  | 5.0                 |      |                    |
| Current Consumption (Maximum Loaded/ 2.8<V <sub>cc</sub> ≤3.63V)            | I <sub>cc</sub>    | 1.5≤fo≤24MHz   | —  | 3.5                 | mA   |                    |
|   |                    | 24<fo≤40MHz  | —  | 5.0                 |      |                    |
|   |                    | 40<fo≤50MHz  | —  | 6.0                 |      |                    |
| Stand-by Current  | I <sub>std</sub>   |  | —  | 10                  | μA   |                    |
| Symmetry  | SYM                | @50% V <sub>cc</sub>   | 45   | 55                  | %    |                    |
| Rise/ Fall Time (10% V <sub>cc</sub> to 90% V <sub>cc</sub> Maximum Loaded) | Tr/ Tf             | 1.6<V <sub>cc</sub> ≤2.0V  | —  | 6.5                 | ns   |                    |
|   |                    | 2.0<V <sub>cc</sub> ≤2.8V  | —  | 5.0                 |      |                    |
|   |                    | 2.8<V <sub>cc</sub> ≤3.63V   | —  | 4.5                 |      |                    |
| Low Level Output Voltage  | V <sub>OL</sub>    | I <sub>OL</sub> =4mA   | —  | 10% V <sub>cc</sub> | V    |                    |
| High Level Output Voltage   | V <sub>OH</sub>    | I <sub>OH</sub> =-4mA  | 90% V <sub>cc</sub>                              | —                   | V    |                    |
| CMOS Load   | L <sub>CMOS</sub>  | CMOS Output  | —  | 15                  | pF   |                    |
| Input Voltage Range   | V <sub>IN</sub>    |  | 0  | V <sub>cc</sub>     | V    |                    |
| Low Level Input Voltage   | V <sub>IL</sub>    |  | —  | 30% V <sub>cc</sub> | V    |                    |
| High Level Input Voltage  | V <sub>IH</sub>    |  | 70% V <sub>cc</sub>                              | —                   | V    |                    |
| Disable Time  | t <sub>dis</sub>   |  | —  | 100                 | ns   |                    |
| Enable Time   | t <sub>ena</sub>   |  | —  | 5                   | ms   |                    |
| Start-up Time   | t <sub>str</sub>   | @Minimum operating voltage to be 0 sec.  | —  | 10                  | ms   |                    |
| 1 Sigma Jitter  | J <sub>Sigma</sub> | Measured with Wavcrest SIA-3000  | —  | 8                   | ps   |                    |
| Peak to Peak Jitter   | J <sub>PK-PK</sub> |  | —  | 80                  | ps   |                    |

Note: All electrical characteristics are defined at the maximum load and operating temperature range.  
Please contact us for inquiry about operating temperature range, available frequencies and other conditions.

**Dimensions**

(Unit: mm)



**Recommended Land Pattern**

(Unit: mm)

