



CMOS/ 1.8V to 3.3V/ 2.5×2.0mm



RoHS Compliant

### Features

- Miniature ceramic package  
2.5 (L) × 2.0 (W) × 0.7 (H) mm (Typ.)
- Highly reliable with seam welding
- CMOS output
- Supply voltage 1.8/ 2.5/ 3.3V  
Wide operating voltage range 1.6 to 3.63V
- Low current consumption
- High output frequency 125MHz

Table 1

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

### How to Order

KC2520B 25.0000 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)

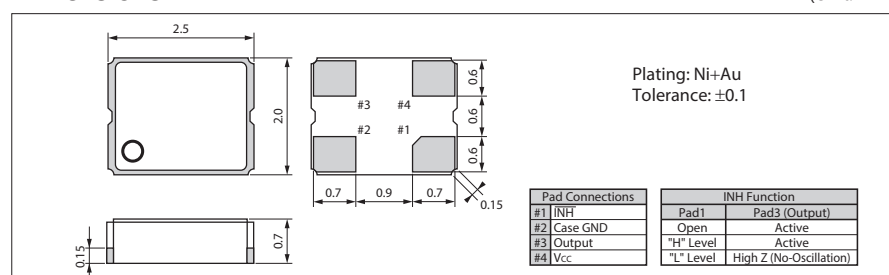
### Specifications

| Item                                                                           | Symbol             | Conditions                                                                                                                   | Specifications                                                                                                          |                    | Unit               |
|--------------------------------------------------------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|
|                                                                                |                    |                                                                                                                              | Min.                                                                                                                    | Max.               |                    |
| Output Frequency Range                                                         | f <sub>o</sub>     |                                                                                                                              | 1.5                                                                                                                     | 125                | 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<br>-100<br>Temp.: -10 to +70°C/<br>-40 to +85°C/ -40 to +105°C<br>-50<br>Temp.: -10 to +70°C<br>-30 | +100<br>+50<br>+30 | × 10 <sup>-6</sup> |
| 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                                                            | —                  | 1.5 ≤ f <sub>o</sub> ≤ 80MHz                                                                                                 | -0.6                                                                                                                    | +6.0               | V                  |
|                                                                                |                    | 80 < f <sub>o</sub> ≤ 125MHz                                                                                                 | -0.3                                                                                                                    | +4.0               |                    |
| Supply Voltage                                                                 | V <sub>cc</sub>    |                                                                                                                              | +1.6                                                                                                                    | +3.63              | V                  |
| Current Consumption<br>(Maximum Loaded/ 1.6 ≤ V <sub>cc</sub> ≤ 2.0V)          | I <sub>cc</sub>    | 1.5 ≤ f <sub>o</sub> ≤ 24MHz                                                                                                 | —                                                                                                                       | 2.5                | mA                 |
|                                                                                |                    | 24 < f <sub>o</sub> ≤ 40MHz                                                                                                  | —                                                                                                                       | 3.5                |                    |
|                                                                                |                    | 40 < f <sub>o</sub> ≤ 60MHz                                                                                                  | —                                                                                                                       | 5.0                |                    |
|                                                                                |                    | 60 < f <sub>o</sub> ≤ 80MHz                                                                                                  | —                                                                                                                       | 6.0                |                    |
|                                                                                |                    | 80 < f <sub>o</sub> ≤ 125MHz                                                                                                 | —                                                                                                                       | 11.0               |                    |
| Current Consumption<br>(Maximum Loaded/ 2.0 < V <sub>cc</sub> ≤ 2.8V)          |                    | 1.5 ≤ f <sub>o</sub> ≤ 24MHz                                                                                                 | —                                                                                                                       | 3.0                |                    |
|                                                                                |                    | 24 < f <sub>o</sub> ≤ 40MHz                                                                                                  | —                                                                                                                       | 4.5                |                    |
|                                                                                |                    | 40 < f <sub>o</sub> ≤ 60MHz                                                                                                  | —                                                                                                                       | 5.5                |                    |
|                                                                                |                    | 60 < f <sub>o</sub> ≤ 80MHz                                                                                                  | —                                                                                                                       | 6.5                |                    |
|                                                                                |                    | 80 < f <sub>o</sub> ≤ 125MHz                                                                                                 | —                                                                                                                       | 14.0               |                    |
| Current Consumption<br>(Maximum Loaded/ 2.8 < V <sub>cc</sub> ≤ 3.63V)         |                    | 1.5 ≤ f <sub>o</sub> ≤ 24MHz                                                                                                 | —                                                                                                                       | 3.5                |                    |
|                                                                                |                    | 24 < f <sub>o</sub> ≤ 40MHz                                                                                                  | —                                                                                                                       | 5.0                |                    |
|                                                                                |                    | 40 < f <sub>o</sub> ≤ 60MHz                                                                                                  | —                                                                                                                       | 6.0                |                    |
|                                                                                |                    | 60 < f <sub>o</sub> ≤ 80MHz                                                                                                  | —                                                                                                                       | 8.0                |                    |
|                                                                                |                    | 80 < f <sub>o</sub> ≤ 125MHz                                                                                                 | —                                                                                                                       | 17.0               |                    |
| Stand-by Current                                                               | I <sub>std</sub>   |                                                                                                                              | —                                                                                                                       | 10                 | μA                 |
| Symmetry                                                                       | SYM                | @50%V <sub>cc</sub>                                                                                                          | 45                                                                                                                      | 55                 | %                  |
| Rise/ Fall Time<br>(10% V <sub>cc</sub> to 90% V <sub>cc</sub> Maximum Loaded) | Tr/ Tf             | 1.6 ≤ V <sub>cc</sub> ≤ 2.0V/ 1.5 < f <sub>o</sub> ≤ 80MHz                                                                   | —                                                                                                                       | 6.5                | ns                 |
|                                                                                |                    | 2.0 < V <sub>cc</sub> ≤ 2.8V/ 1.5 < f <sub>o</sub> ≤ 80MHz                                                                   | —                                                                                                                       | 5.0                |                    |
|                                                                                |                    | 2.8 < V <sub>cc</sub> ≤ 3.63V/ 1.5 < f <sub>o</sub> ≤ 80MHz                                                                  | —                                                                                                                       | 4.5                |                    |
|                                                                                |                    | 1.6 ≤ V <sub>cc</sub> ≤ 3.63V/ 80 < f <sub>o</sub> ≤ 125MHz                                                                  | —                                                                                                                       | 4.0                |                    |
| 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                  |
| Output Load                                                                    | L <sub>CMOS</sub>  | CMOS Output                                                                                                                  | —                                                                                                                       | 15                 | pF                 |
| 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 Wavecrest SIA-3000                                                                                             | 1.5 ≤ f <sub>o</sub> ≤ 80MHz<br>80 < f <sub>o</sub> ≤ 125MHz                                                            | 8<br>4             | ps                 |
| Peak to Peak Jitter                                                            | J <sub>PK-PK</sub> | Measured with Wavecrest SIA-3000                                                                                             | 1.5 ≤ f <sub>o</sub> ≤ 80MHz<br>80 < f <sub>o</sub> ≤ 125MHz                                                            | 80<br>40           | 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)

