



LVDS/ 3.3V or 2.5V/ 7.0×5.0mm



RoHS Compliant

### Features

- Miniature ceramic package
- Highly reliable with seam welding
- LVDS output
- Supply voltage  $V_{CC}=3.3V, 2.5V$
- $\pm 25 \times 10^{-6}$  available
- Low Phase Noise

Table 1

| Freq. Code | Tol. $\times 10^{-6}$ | Operating Temperature Range (°C) | Note                                         |
|------------|-----------------------|----------------------------------|----------------------------------------------|
| 0          | $\pm 50$              | 0 to +70                         | Standard specifications                      |
| S          | $\pm 30$              |                                  |                                              |
| U          | $\pm 25$              |                                  |                                              |
| F          | $\pm 100$             | -40 to +85                       | Please contact us for available frequencies. |
| G          | $\pm 50$              |                                  |                                              |
| 6          | $\pm 50$              | -40 to +105                      |                                              |

### How to Order

KC7050P 125.000 L □ □ J 00  
① ② ③ ④ ⑤ ⑥ ⑦

- ① Series
- ② Output Frequency
- ③ Output Type (LVDS)
- ④ Supply Voltage (3 : 3.3V or 2 : 2.5V)
- ⑤ Frequency Tolerance (See Table 1)
- ⑥ Symmetry/ INH Function  
J : 45/ 55%
- ⑦ Individual Specification  
(STD Specification is "00".)

Packaging (Tape & Reel 1000 pcs./ reel)

### Specifications

| Item                                                                           | Symbol             | Conditions                                                                                                                                |                     | Specifications           |                | Unit              |
|--------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------|----------------|-------------------|
|                                                                                |                    |                                                                                                                                           |                     | KC7050P-L2               | KC7050P-L3     |                   |
| Output Frequency Range <sup>Note1</sup>                                        | f <sub>o</sub>     |                                                                                                                                           |                     | 25 to 175                |                | MHz               |
| Frequency Tolerance                                                            | f <sub>tol</sub>   | Initial tolerance, Operating temperature range, Rated power supply voltage change, Load change, Aging (1 year @25°C), Shock and vibration |                     | ±50/ -40 to +105°C       |                | ×10 <sup>-6</sup> |
|                                                                                |                    |                                                                                                                                           |                     | ±100/ -40 to +85°C       |                |                   |
|                                                                                |                    |                                                                                                                                           |                     | ±50/ -40 to +85°C        |                |                   |
|                                                                                |                    |                                                                                                                                           |                     | ±50/ 0 to +70°C          |                |                   |
|                                                                                |                    |                                                                                                                                           |                     | ±30/ 0 to +70°C          |                |                   |
|                                                                                |                    |                                                                                                                                           |                     | ±25/ 0 to +70°C          |                |                   |
| Storage Temperature Range                                                      | T <sub>stg</sub>   |                                                                                                                                           |                     | -55 to +125              |                | °C                |
| Operating Temperature Range                                                    | T <sub>use</sub>   | Standard Specifications<br>Extend (Option)                                                                                                |                     | 0 to +70/ -40 to +85     |                | °C                |
|                                                                                |                    |                                                                                                                                           |                     | -40 to +105              |                |                   |
| Max. Supply Voltage                                                            | —                  |                                                                                                                                           |                     | -0.5 to +5.0             |                | V                 |
| Supply Voltage                                                                 | V <sub>CC</sub>    |                                                                                                                                           |                     | +2.375 to +2.625         | +2.97 to +3.63 | V                 |
| Current Consumption                                                            | I <sub>CC</sub>    |                                                                                                                                           |                     | 50 max.                  |                | mA                |
| Stand-by Current                                                               | I <sub>std</sub>   |                                                                                                                                           |                     | 20 max.                  |                | µA                |
| Symmetry                                                                       | SYM                | 100ohm @crossing point                                                                                                                    |                     | 50±5                     |                | %                 |
| Rise/ Fall Time<br>(20% V <sub>CC</sub> to 80% V <sub>CC</sub> Maximum Loaded) | Tr/ Tf             | 100ohm                                                                                                                                    |                     | 0.6 max.                 |                | ns                |
| Low Level Output Voltage <sup>Note2</sup>                                      | V <sub>OL</sub>    |                                                                                                                                           |                     | 0.9 min. Typ.:1.1        |                | V                 |
| High Level Output Voltage <sup>Note2</sup>                                     | V <sub>OH</sub>    |                                                                                                                                           |                     | 1.6 max. Typ.:1.43       |                | V                 |
| Differential Output Voltage <sup>Note2</sup>                                   | V <sub>OD</sub>    |                                                                                                                                           |                     | 247 to 454 Typ.:330      |                | mV                |
| Differential Output Voltage Error <sup>Note2</sup>                             | dV <sub>OD</sub>   | dV <sub>OD</sub> = V <sub>OD1</sub> -V <sub>OD2</sub>                                                                                     |                     | 50 max.                  |                | mV                |
| Offset Voltage                                                                 | V <sub>OS</sub>    |                                                                                                                                           |                     | 1.125 to 1.375           |                | V                 |
| Offset Voltage Error                                                           | dV <sub>OS</sub>   | dV <sub>OS</sub> = V <sub>OS1</sub> -V <sub>OS2</sub>                                                                                     |                     | 50 max.                  |                | mV                |
| Output Load                                                                    | R <sub>L</sub>     | LVDS Output                                                                                                                               |                     | 100                      |                | ohm               |
| Input Voltage Range                                                            | V <sub>IN</sub>    |                                                                                                                                           |                     | 0 to V <sub>CC</sub>     |                | V                 |
| Low Level Input Voltage                                                        | V <sub>IL</sub>    |                                                                                                                                           |                     | 30% V <sub>CC</sub> max. |                | V                 |
| High Level Input Voltage                                                       | V <sub>IH</sub>    |                                                                                                                                           |                     | 70% V <sub>CC</sub> min. |                | V                 |
| Disable Time                                                                   | t <sub>dis</sub>   |                                                                                                                                           |                     | 200 max.                 |                | ns                |
| Enable Time                                                                    | t <sub>ena</sub>   |                                                                                                                                           |                     | 10 max.                  |                | ms                |
| Start-up Time                                                                  | t <sub>str</sub>   | @Minimum operating voltage to be 0 sec.                                                                                                   |                     | 10 max.                  |                | ms                |
| Deterministic Jitter                                                           | DJ                 | Measured with Wavecrest SIA-3000                                                                                                          |                     | 2 max.                   |                | ps                |
| 1 Sigma Jitter                                                                 | J <sub>Sigma</sub> |                                                                                                                                           |                     | 4 max.                   |                | ps                |
| Peak to Peak Jitter                                                            | J <sub>PK-PK</sub> |                                                                                                                                           |                     | 30 max.                  |                | ps                |
| Phase Jitter                                                                   | J <sub>Phase</sub> | @156.25MHz<br>V <sub>CC</sub> =3.3V                                                                                                       | BW : 12kHz to 20MHz | 0.3max.                  |                | ps                |

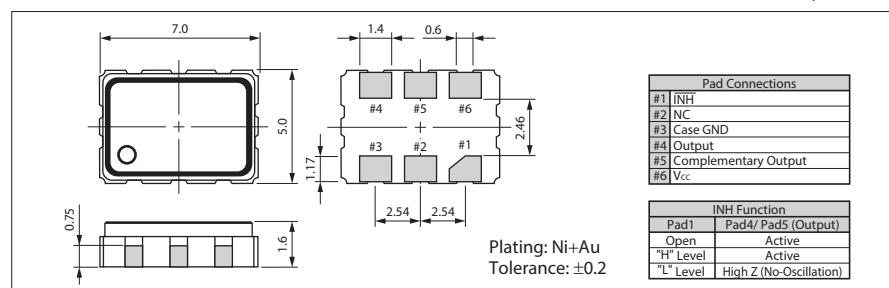
Note : All electrical characteristics are defined at the maximum load and operating temperature range.

Note1: Please contact us for inquiry about operating temperature range, available frequencies and other conditions.

Note2: DC characteristic

### Dimensions

(Unit: mm)



### Recommended Land Pattern

(Unit: mm)

