

## Specification of Quartz Crystal Units

|       |   |  |
|-------|---|--|
| 1     | NDK Part Number                                 | See table 1  |
| 2     | NDK Specification Number                        | STD-CSR-1  |
| 3     | Type  | NX3225SA   |
| 4     | Electrical Characteristics                      |  |
| 4.1   | Nominal Frequency ( $f_{nom}$ )                 | See table 1  |
| 4.2   | Overtone order                                  | Fundamental  |
| 4.3   | Frequency Tolerance                             | $\pm 15 \times 10^{-6}$ max. ( +25 °C )  |
| 4.4   | Frequency Versus<br>Temperature Characteristics | $\pm 15 \times 10^{-6}$ max. ( -10 ~ +75 °C )<br>The reference temperature shall be +25 °C |
| 4.5   | Equivalent Series Resistance ( $R_r$ )          | See table 1  |
| 4.6   | Shunt Capacitance ( $C_0$ )                     | NA   |
| 4.7   | Maximum Drive Level                             | 200 $\mu$ W max.   |
| 5     | Measurement Circuit                             |  |
| 5.1   | Frequency Measurement                           |  |
| 5.1.1 | Measuring Instrument                            | $\pi$ -network   |
| 5.1.2 | Load Capacitance ( $C_L$ )                      | 8 pF   |
| 5.1.3 | Level of Drive                                  | 10 $\mu$ W   |
| 5.2   | Equivalent Resistance Measurement               |  |
| 5.2.1 | Measuring Instrument                            | $\pi$ -network   |
| 5.2.2 | Load Capacitance ( $C_L$ )                      | Series   |
| 5.2.3 | Level of Drive                                  | 10 $\mu$ W   |
| 6     | Operable Temperature Range                      | -10 ~ +75 °C   |
| 7     | Storage Temperature Range                       | -40 ~ +85 °C   |
| 8     | Dimension                                       |  |

(Unit: mm)

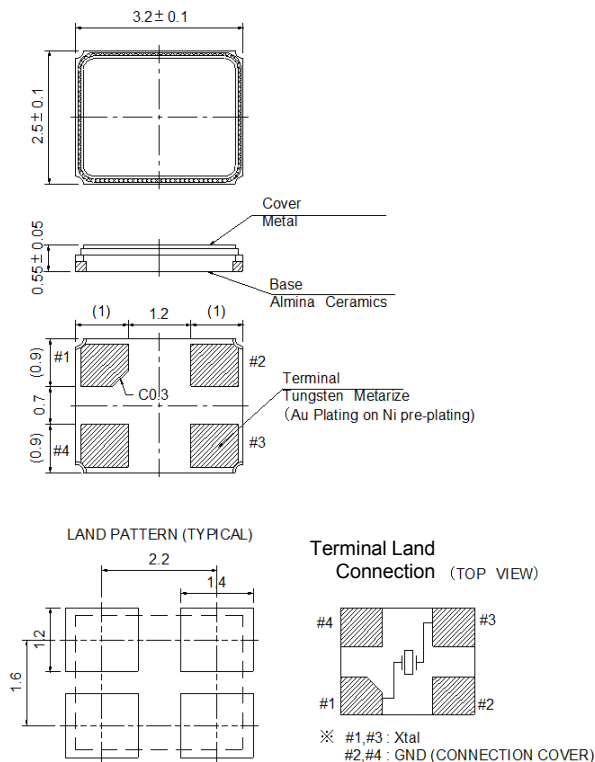


Table1

| $f_{nom}$ (MHz) | $R_r$ ( $\Omega$ ) max. | NDK Part Number              |
|-----------------|-------------------------|------------------------------|
| 12.000          | 100                     | NX3225SA-12.000M-STD-CSR-1   |
| 13.560          | 80                      | NX3225SA-13.560M-STD-CSR-1   |
| 14.31818        | 80                      | NX3225SA-14.31818M-STD-CSR-1 |
| 16.000          | 80                      | NX3225SA-16.000M-STD-CSR-1   |
| 16.384          | 80                      | NX3225SA-16.384M-STD-CSR-1   |
| 18.432          | 80                      | NX3225SA-18.432M-STD-CSR-1   |
| 18.870          | 80                      | NX3225SA-18.870M-STD-CSR-1   |
| 20.000          | 50                      | NX3225SA-20.000M-STD-CSR-1   |
| 22.000          | 50                      | NX3225SA-22.000M-STD-CSR-1   |
| 22.5792         | 50                      | NX3225SA-22.5792M-STD-CSR-1  |
| 24.000          | 50                      | NX3225SA-24.000M-STD-CSR-1   |
| 24.576          | 50                      | NX3225SA-24.576M-STD-CSR-1   |
| 25.000          | 50                      | NX3225SA-25.000M-STD-CSR-1   |
| 26.000          | 50                      | NX3225SA-26.000M-STD-CSR-1   |
| 27.000          | 50                      | NX3225SA-27.000M-STD-CSR-1   |
| 27.120          | 50                      | NX3225SA-27.120M-STD-CSR-1   |
| 28.63636        | 50                      | NX3225SA-28.63636M-STD-CSR-1 |
| 30.000          | 50                      | NX3225SA-30.000M-STD-CSR-1   |
| 32.000          | 50                      | NX3225SA-32.000M-STD-CSR-1   |
| 36.000          | 50                      | NX3225SA-36.000M-STD-CSR-1   |
| 40.000          | 50                      | NX3225SA-40.000M-STD-CSR-1   |
| 44.000          | 50                      | NX3225SA-44.000M-STD-CSR-1   |
| 48.000          | 50                      | NX3225SA-48.000M-STD-CSR-1   |
| 54.000          | 50                      | NX3225SA-54.000M-STD-CSR-1   |