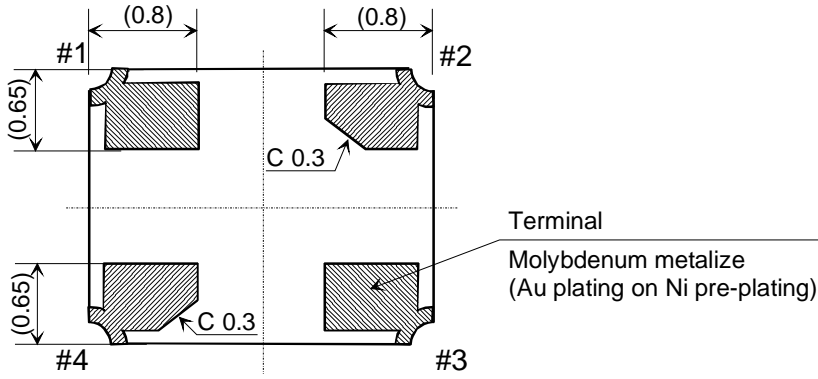
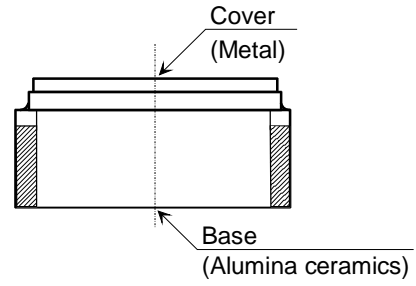
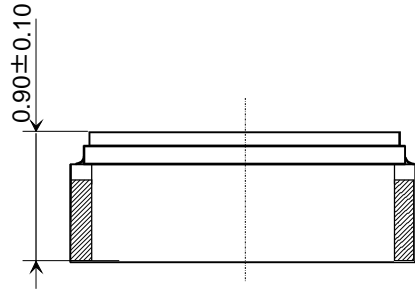
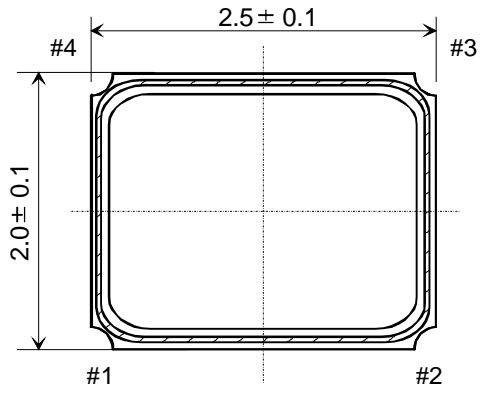


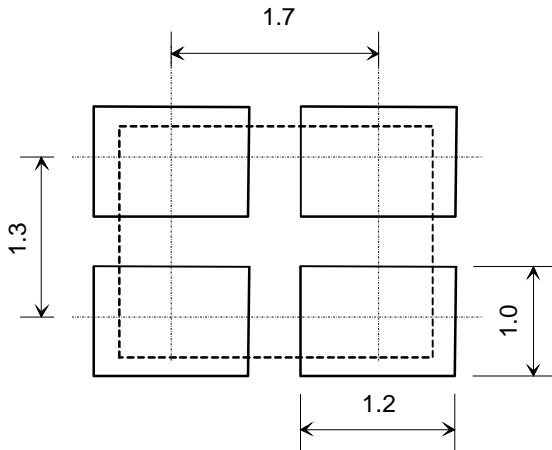
SPECIFICATION

1. Type : NX2520SG
2. Electrical characteristics
- 2.1. Nominal Frequency (F_0) : 26.0 MHz
- 2.2. Overtone Order : Fundamental
- 2.3. Adjustment Tolerance : $\pm 10 \times 10^{-6}$ Max. (at +25 \pm 3 $^{\circ}$ C)
- 2.4. Frequency stability over temperature : $\pm 10 \times 10^{-6}$ Max. (at -25 to +85 $^{\circ}$ C)
The reference temp. shall be +25 $^{\circ}$ C
- 2.5. Temperature coefficient
- 2.5.1. Third-order curve fitting coefficient : 8.7 to 11×10^{-5} ppm/ $^{\circ}$ C³
- 2.5.2. Second-order curve fitting coefficient : -12 to -5×10^{-4} ppm/ $^{\circ}$ C²
- 2.5.3. First-order curve fitting coefficient : -0.35 to -0.10 ppm/ $^{\circ}$ C
- Fitting equation is defined by formula below and four kinds of temperature coefficient parameters, which are calculated from operating temperature under per 2 $^{\circ}$ C steps measurement data.
- 2.6. Frequency perturbation : $\pm 0.5 \times 10^{-6}$ Max.
- *Measurement condition:
Peak-to-peak deviation from the frequency versus temperature curve fit 3th order.
Minimum of 1 frequency reading every 2 $^{\circ}$ C over operating temperature range.
- 2.7. Temperature Hysteresis
- 2.7.1. Full cycle temperature hysteresis : $\pm 0.5 \times 10^{-6}$ Max.
Difference in freq. measurement at any temperature when undergoing a thermal cycle over the entire operation temperature range from -40 $^{\circ}$ C to 85 $^{\circ}$ C.
- 2.7.2. Small cycle temperature hysteresis : $\pm 0.05 \times 10^{-6}$ Max.
Difference in freq. measurement at any temperature when undergoing a thermal cycle of a temperature range of 5 $^{\circ}$ C for each 1 $^{\circ}$ C test.
- *Measurement condition:
Frequency measured for every 5 $^{\circ}$ C / Temperature drift rate is 1 $^{\circ}$ C / min.
- 3.8. Frequency slope error over temperature : 0.05×10^{-6} Max. (at -10 to +60 $^{\circ}$ C)
 0.1×10^{-6} Max. (at -30 to +85 $^{\circ}$ C)
- Freq. slope error between measured S curve (fL) data and 3rd order curve fitting data over operation temperature under per 2 $^{\circ}$ C test.
- 3.9. Equivalent Resistance (ESR) : 30 Ω Max.
- 3.10. Turning Sensitivity (TS) : 28 ppm/pF \pm 10% (at CL = 7pF)
- 3.11. Drive level dependency (Drive level: 1nW to 100uW)
- 3.11.1. DLD2 : 2.5 Ω Max.
- 3.11.2. DLDH2 : 1.5 Ω Max.
- 3.11.3. FDL D : 2 ppm Max.
- 3.11.4. FDL DH : 0.7 ppm Max.
- 3.12. G sensitivity : 2×10^{-9} /G Max.
(Gamma vector of all three axes from 30Hz to 1.5kHz)

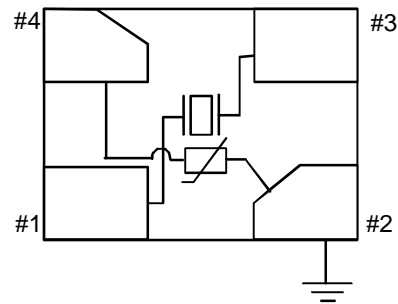
- 3.13. Spurious mode resistance (within +/-1MHz) : 500 Ω Min.
- 3.14. Insulation Resistance : Terminal to terminal insulation resistance also terminal to cover insulation resistance must be 500M Ω (Min.) when DC100V \pm 15V is applied.
4. Measurement circuit
- 4.1. Frequency measurement
- Measuring Instrument : IEC π -network
 - Load Capacitance (C_L) : 7 pF
 - Level of Drive : 100 μ W
- 4.2. Equivalent resistance measurement
- Measuring Instrument : IEC π -network
 - Load Capacitance (C_L) : Series
 - Level of Drive : 100 μ W
5. Other performances for crystal unit
- 5.1. Airtightness : Less than 1.1×10^{-9} Pa m³/s (Helium leak detector)
- 5.2. Aging : $\pm 1 \times 10^{-6}$ Max. / 1st year
 $\pm 1.5 \times 10^{-6}$ Max. / 2nd years
 $\pm 2.5 \times 10^{-6}$ Max. / 5 years
 $\pm 5 \times 10^{-6}$ Max. / 10 years
- 5.3. Operating Temperature range : -30 to +85 $^{\circ}$ C
- 5.4. Storage Temperature range : -40 to +85 $^{\circ}$ C
- 5.5. Maximum drive level : 100 μ W Max.



Recommended land pattern



Terminal configuration (TOP VIEW)



Terminal	Function
#1, #3	XTAL IN-OUT
#4	THERMISTOR IN
#2	THERMISTOR OUT
#2	GND (Connected with cover)