

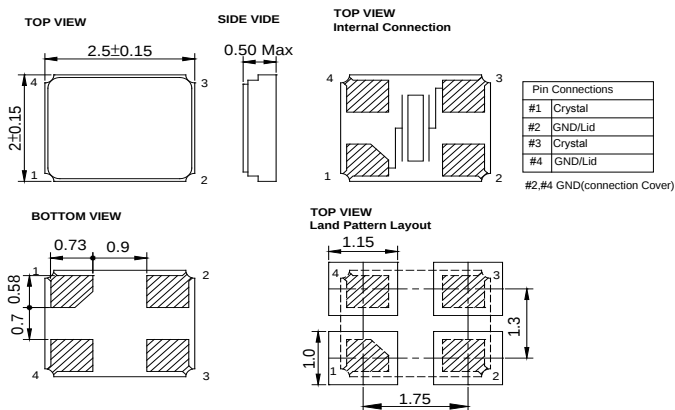
## QUARZ CRYSTAL UNIT SPECIFICATION SHEET

|                |                 |                                                                |                                        |                              |
|----------------|-----------------|----------------------------------------------------------------|----------------------------------------|------------------------------|
| CUSTOMER:      | LI CHUANG       | PRODUCT TYPE:                                                  | QUARTZ CRYSTAL<br>HSX221S 50.000000MHz | 2017.02.07<br>(RELEASE DATE) |
| H.ELE P/N:     | X2B050000BC1H-V | CUSTOMER P/N:                                                  |                                        |                              |
| GREEN PRODUCT: |                 | ☑ Pb free ☑ RoHS Compliant ☑ HF-Halogen free ☑ REACH Compliant |                                        |                              |

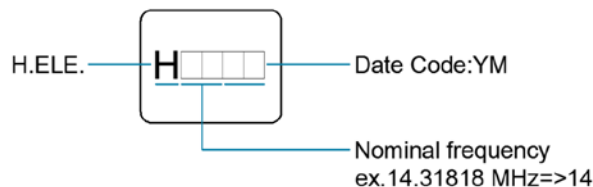
### Electrical Specification

| Items                         | Electrical Spec.                                      |      |     | Unit     | Notes         |
|-------------------------------|-------------------------------------------------------|------|-----|----------|---------------|
|                               | Min                                                   | Type | Max |          |               |
| 1. Mode of oscillation:       | Fundamental                                           |      |     |          |               |
| 2. Frequency tolerance        | -10                                                   |      | +10 | ppm      | at 25°C±3°C   |
| 3. Equivalent resistance (RR) |                                                       |      | 80  | Ω        | SERIES        |
| 4. Storage temperature range  | -40                                                   |      | +85 | °C       |               |
| 5. Operable temperature range | -40                                                   |      | +85 | °C       |               |
| 6. Temperature stability      | -30                                                   |      | +30 | ppm      | -40°C ~ +85°C |
| 7. Loading capacitance (CL)   |                                                       | 12.0 |     | pF       |               |
| 8. Drive level (DL)           |                                                       | 10   | 100 | μW       |               |
| 9. Shunt Capacitance (C0)     |                                                       |      | 2.0 | pF       |               |
| 10. Insulation resistance     | 500                                                   |      |     | MΩ       | at DC 100V    |
| 11. Aging:                    | -3                                                    |      | +3  | ppm/Year |               |
| 12. Circuit:                  | Measured in HP/E5100A,S&A 250B                        |      |     |          |               |
| 13. Shocking :                | Dropping from 120 cm height 3 times on Concrete floor |      |     |          |               |

### Dimension



### Marking



#### 1. Laser marking.

#### 2. Date Code:

| Year | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|------|------|------|------|------|------|------|------|------|------|------|
| (Y)  | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| Code | 0    | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    |

| Month (M) | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
|-----------|------|------|------|------|------|------|------|------|------|------|------|------|
| Code      | A    | B    | C    | D    | E    | F    | G    | H    | J    | K    | L    | M    |

Note:

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