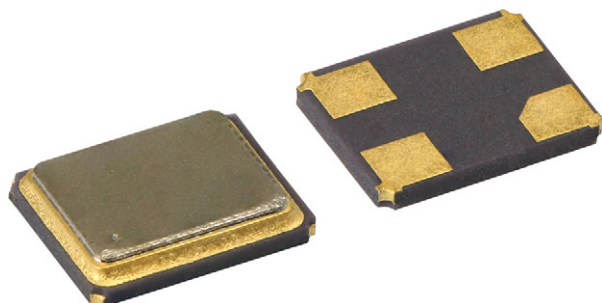


## Surface-Mount Crystal



### FEATURES

- Size: 2.5 x 2.0 x 0.65 (mm)
- Small package
- Frequencies from 12 MHz to 60 MHz
- Tape and reel packaging
- Material categorization:  
for definitions of compliance please see  
[www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

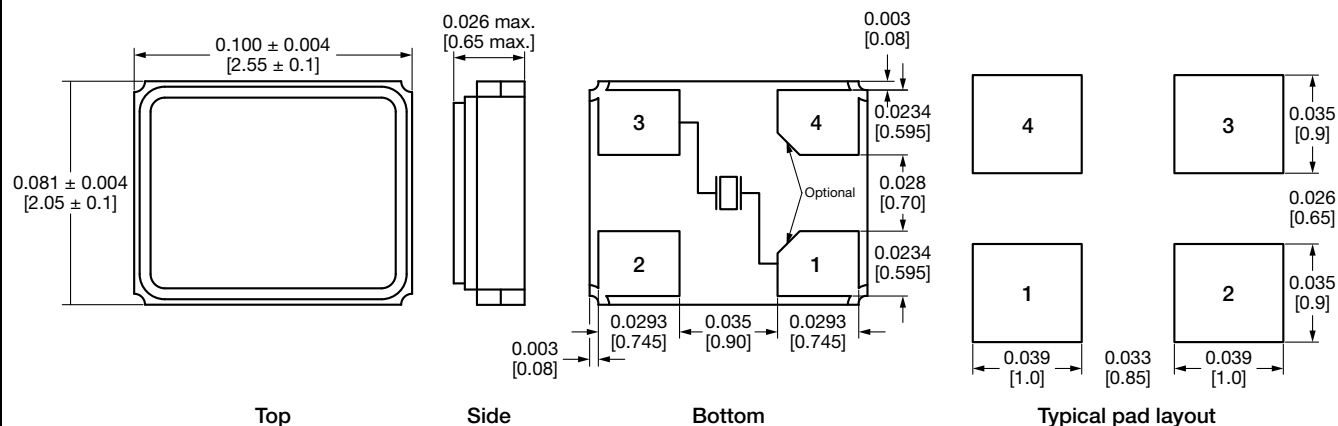
The XT22 series is an ultra miniature package crystal with dimensions 2.5 mm x 2.0 mm x 0.65 mm. It is primarily used in notebook, mobile communications, telecom devices, industrial controls, and consumer platforms.

### STANDARD ELECTRICAL SPECIFICATIONS

| PARAMETER                   | SYMBOL         | CONDITION           | UNIT | MIN. | TYP.                                              | MAX.   |
|-----------------------------|----------------|---------------------|------|------|---------------------------------------------------|--------|
| Frequency range             | $F_0$          |                     | MHz  | 12   | -                                                 | 60     |
| Frequency tolerance         | $\Delta F/F_0$ | At 25 °C            | ppm  | -    | $\pm 10, \pm 15, \pm 20, \pm 25, \pm 30$          | -      |
| Temperature stability       | $T_C$          | Ref. to 25 °C       | ppm  | -    | $\pm 20, \pm 25, \pm 30, \pm 35, \pm 50, \pm 100$ | -      |
| Operating temperature range | $T_{OPR}$      | Standard            | °C   | 0    | -                                                 | +70    |
|                             |                | Optional            | °C   | -40  | -                                                 | +85    |
| Storage temperature range   | $T_{STG}$      |                     | °C   | -55  | -                                                 | +125   |
| Shunt capacitance           | $C_0$          |                     | pF   | -    | -                                                 | 7      |
| Load capacitance            | $C_L$          | Customer specified  | pF   | 8    | -                                                 | Series |
| Insulation resistance       | $I_R$          | 100 V <sub>DC</sub> | MΩ   | 500  | -                                                 | -      |
| Drive level                 | $D_L$          |                     | μW   | -    | 10                                                | 200    |
| Aging                       | $F_a$          | At 25 °C, per year  | ppm  | -3   | -                                                 | +3     |

### EQUIVALENT SERIES RESISTANCE (ESR) AND MODE OF VIBRATION (MODE)

| FREQUENCY RANGE (MHz) | MAX. ESR (Ω) |
|-----------------------|--------------|
| 12.000 to 15.999      | 120          |
| 16.000 to 25.999      | 80           |
| 26.000 to 54.000      | 50           |

**DIMENSIONS** in inches [millimeters]

**Note**

- Pins 2 and 4 are connected to the metal lid

**PART NUMBER CONFIGURATIONS** (to be used on all New Designs)

| X T     |  | 2 2            |  | 1 0                      |  | H                 |  | J                                                                            |  | R                                            |  | G                                                                                             |  | X                                                           |  | 8 M 1 9 2                                                                                           |  |  |  |  | E                  |  |
|---------|--|----------------|--|--------------------------|--|-------------------|--|------------------------------------------------------------------------------|--|----------------------------------------------|--|-----------------------------------------------------------------------------------------------|--|-------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------|--|--|--|--|--------------------|--|
| Crystal |  | Package / Size |  | Load Cap.                |  | Pack Code         |  | Freq. Tolerance                                                              |  | Operating Temp.                              |  | Temp. Stability                                                                               |  | Options                                                     |  | Frequency                                                                                           |  |  |  |  | Lead (PB)-free     |  |
|         |  | 22             |  | 10 = std.<br>SE = series |  | H = tape and reel |  | G = ± 30 ppm<br>E = ± 25 ppm<br>H = ± 20 ppm<br>I = ± 15 ppm<br>J = ± 10 ppm |  | S = -10 °C to +70 °C<br>R = -40 °C to +85 °C |  | C = ± 100 ppm<br>D = ± 50 ppm<br>F = ± 35 ppm<br>G = ± 30 ppm<br>E = ± 25 ppm<br>H = ± 20 ppm |  | X = no options<br><br>Contact factory for available options |  | Use “M” as decimal place holder<br><br>Frequency must be five digits - complete with “0” at the end |  |  |  |  | E = lead (Pb)-free |  |

**PART MARKING**

Line 1: V25.00 (frequency)

Line 2: YYWWA (date code / factory)



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