

|                                     |                                                                                                                                                                                                                                                                                                                                                |                                                   |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| SPECIFICATION SHEET NO.             | S0510 - XB12M00000S420                                                                                                                                                                                                                                                                                                                         |                                                   |
| ORIGINAL MFG/PART NO.               | TGS Crystals/CM75 12M0A30-20-30-40-50TLF                                                                                                                                                                                                                                                                                                       |                                                   |
| NEXTGEN PART CODE                   | XB12M00000S420                                                                                                                                                                                                                                                                                                                                 | Indicate This Code For <a href="#">RFQ</a> /Order |
| DATE                                | May 10, 2025                                                                                                                                                                                                                                                                                                                                   |                                                   |
| REVISION                            | A2                                                                                                                                                                                                                                                                                                                                             | Updated With Most Recent Data                     |
| DESCRIPTION AND<br>MAIN PARAMETRICS | MHz SMD Crystal Seam Seal, 7050 Type XB series, 4 pads<br>Dimension L7.0*W5.0*H1.0mm<br>12.000MHz, Tolerance $\pm 30$ ppm, Load Capacitor 20pF<br>Frequency stability $\pm 30$ ppm; Operating Temp. Range -40°C ~+85°C<br>ESR 50ohm Max, Reflow Profile Condition 260 °C Max.<br>Package in Tape/Reel, 1000pcs/Reel<br>RoHS/RoHS III Compliant |                                                   |
| CUSTOMER                            |                                                                                                                                                                                                                                                                                                                                                |                                                   |
| CUSTOMER PART NUMBER                |                                                                                                                                                                                                                                                                                                                                                |                                                   |
| CROSS REF. PART NUMBER              |                                                                                                                                                                                                                                                                                                                                                |                                                   |
| MEMO                                |                                                                                                                                                                                                                                                                                                                                                |                                                   |

|                              |  |                                                                                       |                                                                                      |
|------------------------------|--|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| VENDOR APPROVE               |  |                                                                                       |                                                                                      |
| Issued/Checked/Approved      |  |    |  |
|                              |  |  |                                                                                      |
| Effective Date: May 10, 2025 |  |                                                                                       |                                                                                      |

|                  |  |
|------------------|--|
| CUSTOMER APPROVE |  |
|                  |  |
| Date:            |  |

## MAIN FEATURE

- MHz SMD Crystal L7.0\*W5.0\*H1.0mm 4 Pads
- Low Cost
- High Precision
- High Frequency Stability
- Short Lead time
- Reflow Profile Condition 260 ° C Max.
- Cross More Competitors Part
- REACH/RoHS/RoHS III Compliant



*Image shown is a representation only.  
Exact specifications should be  
obtained from the product dimension.*

## APPLICATION

- Bluetooth, Wireless Communication Set
- Communication Electronics



## ELECTRICAL CHARACTERISTICS

- See Page 6~14 For Different Part Code.
- All Products Parameters are Subject To NextGen Components' Final Confirmation.

## HOW TO ORDER

- Please Follow Up Part Code Guide And Indicate NextGen Part Code XB12M00000S420 For RFQ and Order.

## PART CODE GUIDE

**RFQ**  
[Request For Quotation](#)

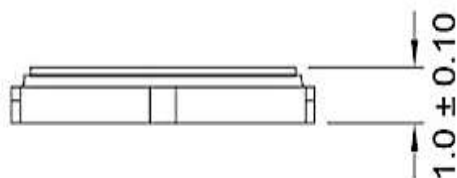
| CODE  | NAME                           | KEY SPECIFICATION OPTION                                                 |
|-------|--------------------------------|--------------------------------------------------------------------------|
| XB    | Product Series Code            | MHz SMD Crystal, Seam Seal, 4 Pads Case Dimension<br>L7.0*W5.0*H1.0mm    |
| 12M0  | Frequency Range Code           | 12M0: 12.0MHz or Specify Frequency Range                                 |
| 0000S | Internal Control Code          | Letter or Digits (A~Z, a~z or 0~9)                                       |
| 420   | Parameters Code                | Letter or Digits (A~Z, a~z or 0~9)                                       |
| XX    | Special/Custom Parameters Code | Letter or Digits (A~Z, a~z or 0~9) for Special Parametric;<br>Blank: N/A |

**DIMENSION** - Unit: mm

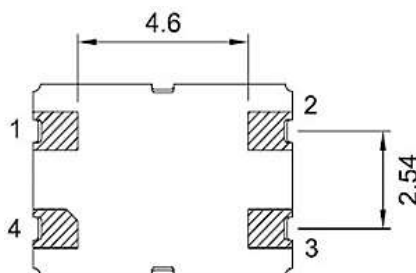
Top View



Side View



Bottom View

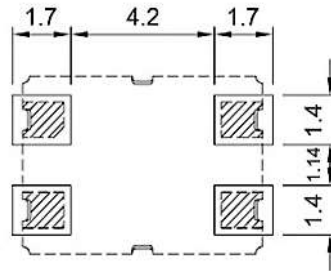


#1 Crystal #2 Ground #3 Crystal #4 Ground

## Connection



## Recommend Pad Layout



**GENERAL SPECIFICATION** –Ta = 25°C

| PARAMETER              | SYMBOL | VALUE       |      |      | UNIT | CONDITION     |
|------------------------|--------|-------------|------|------|------|---------------|
|                        |        | MIN.        | TYPE | MAX. |      |               |
| Mode of Vibration Code |        | Fundamental |      |      |      |               |
| Frequency Tolerance    | △F/F0  | ± 10        | -    | ± 50 | ppm  |               |
| Load Capacitance       | CL     | 8           | -    | 30   | pF   |               |
| Frequency Stability    | Tc     | ± 10        | ±30  | ± 50 | ppm  |               |
| Operating Temp. Range  | TOPR   | -40         | -    | +85  | °C   |               |
| Storage Temp. Range    | TSTG   | -50         | -    | +105 | °C   |               |
| Drive Level            | DL     | -           | -    | 100  | μW   |               |
| Insulation Resistance  | IR     | 500         | -    |      | mΩ   | @100V ± 15VDC |
| Shunt Capacitance      | C0     | -           | -    | 3.0  | pF   |               |
| Aging per year         | Fa     | -3          | -    | +3   | ppm  | 1st Year      |

**ELECTRICAL PARAMETERS** – FOR DIFFERENT PART CODE- Ta = 25°C

| PART CODE      | FREQUENCY RANGE | FREQUENCY TOLERANCE | LOAD CAPACITANCE | FREQUENCY STABILITY | OPERATING TEMPE. RANGE | EQUIVALENT SERIES RESISTANCE |
|----------------|-----------------|---------------------|------------------|---------------------|------------------------|------------------------------|
|                | MHz             | ppm                 | pF               | ppm                 | °C                     | Ω Max.                       |
| XB6M000000S408 | 6.000000        | ±30                 | 8                | ±30                 | -40 ~ +85              | 100                          |
| XB6M000000S410 | 6.000000        | ±30                 | 10               | ±30                 | -40 ~ +85              | 100                          |
| XB6M000000S412 | 6.000000        | ±30                 | 12               | ±30                 | -40 ~ +85              | 100                          |
| XB6M000000S416 | 6.000000        | ±30                 | 16               | ±30                 | -40 ~ +85              | 100                          |
| XB6M000000S418 | 6.000000        | ±30                 | 18               | ±30                 | -40 ~ +85              | 100                          |
| XB6M000000S420 | 6.000000        | ±10                 | 20               | ±30                 | -40 ~ +85              | 100                          |
| XB6M000000S430 | 6.000000        | ±30                 | 30               | ±30                 | -40 ~ +85              | 100                          |
| XB7M372800S408 | 7.372800        | ±30                 | 8                | ±30                 | -40 ~ +85              | 110                          |
| XB7M372800S410 | 7.372800        | ±30                 | 10               | ±30                 | -40 ~ +85              | 110                          |
| XB7M372800S412 | 7.372800        | ±30                 | 12               | ±30                 | -40 ~ +85              | 110                          |
| XB7M372800S416 | 7.372800        | ±30                 | 16               | ±30                 | -40 ~ +85              | 110                          |
| XB7M372800S418 | 7.372800        | ±30                 | 18               | ±30                 | -40 ~ +85              | 110                          |
| XB7M372800S420 | 7.372800        | ±30                 | 20               | ±30                 | -40 ~ +85              | 110                          |
| XB7M372800S430 | 7.372800        | ±30                 | 30               | ±30                 | -40 ~ +85              | 110                          |
| XB8M000000S408 | 8.000000        | ±30                 | 8                | ±30                 | -40 ~ +85              | 110                          |
| XB8M000000S410 | 8.000000        | ±30                 | 10               | ±30                 | -40 ~ +85              | 110                          |
| XB8M000000S412 | 8.000000        | ±30                 | 12               | ±30                 | -40 ~ +85              | 110                          |
| XB8M000000S416 | 8.000000        | ±30                 | 16               | ±30                 | -40 ~ +85              | 80                           |
| XB8M000000S418 | 8.000000        | ±30                 | 18               | ±30                 | -40 ~ +85              | 80                           |
| XB8M000000S420 | 8.000000        | ±30                 | 20               | ±30                 | -40 ~ +85              | 110                          |

**ELECTRICAL PARAMETERS** – FOR DIFFERENT PART CODE- Ta = 25°C

| PART CODE      | FREQUENCY RANGE | FREQUENCY TOLERANCE | LOAD CAPACITANCE | FREQUENCY STABILITY | OPERATING TEMPE. RANGE | EQUIVALENT SERIES RESISTANCE |
|----------------|-----------------|---------------------|------------------|---------------------|------------------------|------------------------------|
|                | MHz             | ppm                 | pF               | ppm                 | °C                     | Ω Max.                       |
| XB8M000000S430 | 8.000000        | ±30                 | 30               | ±30                 | -40 ~ +85              | 110                          |
| XB9M830400S408 | 9.830400        | ±30                 | 8                | ±30                 | -40 ~ +85              | 60                           |
| XB9M830400S410 | 9.830400        | ±30                 | 10               | ±30                 | -40 ~ +85              | 60                           |
| XB9M830400S412 | 9.830400        | ±30                 | 12               | ±30                 | -40 ~ +85              | 60                           |
| XB9M830400S416 | 9.830400        | ±30                 | 16               | ±30                 | -40 ~ +85              | 60                           |
| XB9M830400S418 | 9.830400        | ±30                 | 18               | ±30                 | -40 ~ +85              | 60                           |
| XB9M830400S420 | 9.830400        | ±30                 | 20               | ±30                 | -40 ~ +85              | 60                           |
| XB9M830400S430 | 9.830400        | ±30                 | 30               | ±30                 | -40 ~ +85              | 60                           |
| XB10M00000S408 | 10.00000        | ±30                 | 8                | ±30                 | -40 ~ +85              | 110                          |
| XB10M00000S410 | 10.00000        | ±30                 | 10               | ±30                 | -40 ~ +85              | 110                          |
| XB10M00000S412 | 10.00000        | ±30                 | 12               | ±30                 | -40 ~ +85              | 110                          |
| XB10M00000S416 | 10.00000        | ±30                 | 16               | ±30                 | -40 ~ +85              | 110                          |
| XB10M00000S418 | 10.00000        | ±30                 | 18               | ±30                 | -40 ~ +85              | 110                          |
| XB10M00000S420 | 10.00000        | ±30                 | 20               | ±30                 | -40 ~ +85              | 110                          |
| XB10M00000S430 | 10.00000        | ±30                 | 30               | ±30                 | -40 ~ +85              | 110                          |
| XB11M05920S408 | 11.05920        | ±30                 | 8                | ±30                 | -40 ~ +85              | 60                           |
| XB11M05920S410 | 11.05920        | ±30                 | 10               | ±30                 | -40 ~ +85              | 60                           |
| XB11M05920S412 | 11.05920        | ±30                 | 12               | ±30                 | -40 ~ +85              | 60                           |
| XB11M05920S416 | 11.05920        | ±30                 | 16               | ±30                 | -40 ~ +85              | 60                           |
| XB11M05920S418 | 11.05920        | ±30                 | 18               | ±30                 | -40 ~ +85              | 60                           |

**ELECTRICAL PARAMETERS** – FOR DIFFERENT PART CODE- Ta = 25°C

| PART CODE             | FREQUENCY RANGE | FREQUENCY TOLERANCE | LOAD CAPACITANCE | FREQUENCY STABILITY | OPERATING TEMPE. RANGE | EQUIVALENT SERIES RESISTANCE |
|-----------------------|-----------------|---------------------|------------------|---------------------|------------------------|------------------------------|
|                       | MHz             | ppm                 | pF               | ppm                 | °C                     | Ω Max.                       |
| XB11M05920S420        | 11.05920        | ±30                 | 20               | ±30                 | -40 ~ +85              | 60                           |
| XB11M05920S430        | 11.05920        | ±30                 | 30               | ±30                 | -40 ~ +85              | 60                           |
| XB12M00000S408        | 12.00000        | ±30                 | 8                | ±30                 | -40 ~ +85              | 50                           |
| XB12M00000S410        | 12.00000        | ±30                 | 10               | ±30                 | -40 ~ +85              | 50                           |
| XB12M00000S412        | 12.00000        | ±30                 | 12               | ±30                 | -40 ~ +85              | 50                           |
| XB12M00000S416        | 12.00000        | ±30                 | 16               | ±30                 | -40 ~ +85              | 50                           |
| XB12M00000S418        | 12.00000        | ±30                 | 18               | ±30                 | -40 ~ +85              | 50                           |
| <b>XB12M00000S420</b> | 12.00000        | ±30                 | 20               | ±30                 | -40 ~ +85              | 50                           |
| XB12M00000S430        | 12.00000        | ±30                 | 30               | ±30                 | -40 ~ +85              | 50                           |
| XB12M50000S418        | 12.50000        | ±30                 | 18               | ±30                 | -40 ~ +85              | 60                           |
| XB14M31818S408        | 14.31818        | ±30                 | 8                | ±30                 | -40 ~ +85              | 50                           |
| XB14M31818S410        | 14.31818        | ±30                 | 10               | ±30                 | -40 ~ +85              | 50                           |
| XB14M31818S412        | 14.31818        | ±30                 | 12               | ±30                 | -40 ~ +85              | 50                           |
| XB14M31818S416        | 14.31818        | ±30                 | 16               | ±30                 | -40 ~ +85              | 50                           |
| XB14M31818S418        | 14.31818        | ±30                 | 18               | ±30                 | -40 ~ +85              | 50                           |
| XB14M31818S420        | 14.31818        | ±30                 | 20               | ±30                 | -40 ~ +85              | 50                           |
| XB14M31818S430        | 14.31818        | ±30                 | 30               | ±30                 | -40 ~ +85              | 50                           |
| XB14M74560S408        | 14.74560        | ±30                 | 8                | ±30                 | -40 ~ +85              | 50                           |
| XB14M74560S410        | 14.74560        | ±30                 | 10               | ±30                 | -40 ~ +85              | 50                           |
| XB14M74560S412        | 14.74560        | ±30                 | 12               | ±30                 | -40 ~ +85              | 50                           |

**ELECTRICAL PARAMETERS** – FOR DIFFERENT PART CODE- Ta = 25°C

| PART CODE      | FREQUENCY RANGE | FREQUENCY TOLERANCE | LOAD CAPACITANCE | FREQUENCY STABILITY | OPERATING TEMPE. RANGE | EQUIVALENT SERIES RESISTANCE |
|----------------|-----------------|---------------------|------------------|---------------------|------------------------|------------------------------|
|                | MHz             | ppm                 | pF               | ppm                 | °C                     | Ω Max.                       |
| XB14M74560S416 | 14.74560        | ±30                 | 16               | ±30                 | -40 ~ +85              | 50                           |
| XB14M74560S418 | 14.74560        | ±30                 | 18               | ±30                 | -40 ~ +85              | 50                           |
| XB14M74560S420 | 14.74560        | ±30                 | 20               | ±30                 | -40 ~ +85              | 50                           |
| XB14M74560S430 | 14.74560        | ±30                 | 30               | ±30                 | -40 ~ +85              | 50                           |
| XB16M00000S408 | 16.00000        | ±30                 | 8                | ±30                 | -40 ~ +85              | 45                           |
| XB16M00000S410 | 16.00000        | ±30                 | 10               | ±30                 | -40 ~ +85              | 45                           |
| XB16M00000S412 | 16.00000        | ±30                 | 12               | ±30                 | -40 ~ +85              | 45                           |
| XB16M00000S416 | 16.00000        | ±30                 | 16               | ±30                 | -40 ~ +85              | 45                           |
| XB16M00000S418 | 16.00000        | ±30                 | 18               | ±30                 | -40 ~ +85              | 45                           |
| XB16M00000S420 | 16.00000        | ±30                 | 20               | ±30                 | -40 ~ +85              | 45                           |
| XB16M00000S430 | 16.00000        | ±30                 | 30               | ±30                 | -40 ~ +85              | 45                           |
| XB16M38400S408 | 16.38400        | ±30                 | 8                | ±30                 | -40 ~ +85              | 45                           |
| XB16M38400S410 | 16.38400        | ±30                 | 10               | ±30                 | -40 ~ +85              | 45                           |
| XB16M38400S412 | 16.38400        | ±30                 | 12               | ±30                 | -40 ~ +85              | 45                           |
| XB16M38400S416 | 16.38400        | ±30                 | 16               | ±30                 | -40 ~ +85              | 45                           |
| XB16M38400S418 | 16.38400        | ±30                 | 18               | ±30                 | -40 ~ +85              | 45                           |
| XB16M38400S420 | 16.38400        | ±30                 | 20               | ±30                 | -40 ~ +85              | 45                           |
| XB16M38400S430 | 16.38400        | ±30                 | 30               | ±30                 | -40 ~ +85              | 45                           |
| XB16M93440S408 | 16.93440        | ±30                 | 8                | ±30                 | -40 ~ +85              | 45                           |
| XB16M93440S410 | 16.93440        | ±30                 | 10               | ±30                 | -40 ~ +85              | 45                           |

**ELECTRICAL PARAMETERS** – FOR DIFFERENT PART CODE- Ta = 25°C

| PART CODE      | FREQUENCY RANGE | FREQUENCY TOLERANCE | LOAD CAPACITANCE | FREQUENCY STABILITY | OPERATING TEMPE. RANGE | EQUIVALENT SERIES RESISTANCE |
|----------------|-----------------|---------------------|------------------|---------------------|------------------------|------------------------------|
|                | MHz             | ppm                 | pF               | ppm                 | °C                     | Ω Max.                       |
| XB16M93440S412 | 16.93440        | ±30                 | 12               | ±30                 | -40 ~ +85              | 45                           |
| XB16M93440S416 | 16.93440        | ±30                 | 16               | ±30                 | -40 ~ +85              | 45                           |
| XB16M93440S418 | 16.93440        | ±30                 | 18               | ±30                 | -40 ~ +85              | 45                           |
| XB16M93440S420 | 16.93440        | ±30                 | 20               | ±30                 | -40 ~ +85              | 45                           |
| XB16M93440S430 | 16.93440        | ±30                 | 30               | ±30                 | -40 ~ +85              | 45                           |
| XB18M43200S408 | 18.43200        | ±30                 | 8                | ±30                 | -40 ~ +85              | 45                           |
| XB18M43200S410 | 18.43200        | ±30                 | 10               | ±30                 | -40 ~ +85              | 45                           |
| XB18M43200S412 | 18.43200        | ±30                 | 12               | ±30                 | -40 ~ +85              | 45                           |
| XB18M43200S416 | 18.43200        | ±30                 | 16               | ±30                 | -40 ~ +85              | 45                           |
| XB18M43200S418 | 18.43200        | ±30                 | 18               | ±30                 | -40 ~ +85              | 45                           |
| XB18M43200S420 | 18.43200        | ±30                 | 20               | ±30                 | -40 ~ +85              | 45                           |
| XB18M43200S430 | 18.43200        | ±30                 | 30               | ±30                 | -40 ~ +85              | 45                           |
| XB20M00000S408 | 20.00000        | ±30                 | 8                | ±30                 | -40 ~ +85              | 45                           |
| XB20M00000S410 | 20.00000        | ±30                 | 10               | ±30                 | -40 ~ +85              | 45                           |
| XB20M00000S412 | 20.00000        | ±30                 | 12               | ±30                 | -40 ~ +85              | 45                           |
| XB20M00000S416 | 20.00000        | ±30                 | 16               | ±30                 | -40 ~ +85              | 45                           |
| XB20M00000S418 | 20.00000        | ±30                 | 18               | ±30                 | -40 ~ +85              | 45                           |
| XB20M00000S420 | 20.00000        | ±30                 | 20               | ±30                 | -40 ~ +85              | 45                           |
| XB20M00000S430 | 20.00000        | ±30                 | 30               | ±30                 | -40 ~ +85              | 45                           |
| XB22M11840S408 | 22.11840        | ±30                 | 8                | ±30                 | -40 ~ +85              | 30                           |

**ELECTRICAL PARAMETERS** – FOR DIFFERENT PART CODE- Ta = 25°C

| PART CODE      | FREQUENCY RANGE | FREQUENCY TOLERANCE | LOAD CAPACITANCE | FREQUENCY STABILITY | OPERATING TEMPE. RANGE | EQUIVALENT SERIES RESISTANCE |
|----------------|-----------------|---------------------|------------------|---------------------|------------------------|------------------------------|
|                | MHz             | ppm                 | pF               | ppm                 | °C                     | Ω Max.                       |
| XB22M11840S410 | 22.11840        | ±30                 | 10               | ±30                 | -40 ~ +85              | 30                           |
| XB22M11840S412 | 22.11840        | ±30                 | 12               | ±30                 | -40 ~ +85              | 30                           |
| XB22M11840S416 | 22.11840        | ±30                 | 16               | ±30                 | -40 ~ +85              | 30                           |
| XB22M11840S418 | 22.11840        | ±30                 | 18               | ±30                 | -40 ~ +85              | 30                           |
| XB22M11840S420 | 22.11840        | ±30                 | 20               | ±30                 | -40 ~ +85              | 30                           |
| XB22M11840S430 | 22.11840        | ±30                 | 30               | ±30                 | -40 ~ +85              | 30                           |
| XB24M00000S408 | 24.00000        | ±30                 | 8                | ±30                 | -40 ~ +85              | 30                           |
| XB24M00000S410 | 24.00000        | ±30                 | 10               | ±30                 | -40 ~ +85              | 30                           |
| XB24M00000S412 | 24.00000        | ±30                 | 12               | ±30                 | -40 ~ +85              | 30                           |
| XB24M00000S416 | 24.00000        | ±30                 | 16               | ±30                 | -40 ~ +85              | 30                           |
| XB24M00000S418 | 24.00000        | ±30                 | 18               | ±30                 | -40 ~ +85              | 30                           |
| XB24M00000S420 | 24.00000        | ±30                 | 20               | ±30                 | -40 ~ +85              | 30                           |
| XB24M00000S430 | 24.00000        | ±30                 | 30               | ±30                 | -40 ~ +85              | 30                           |
| XB24M57600S408 | 24.57600        | ±30                 | 8                | ±30                 | -40 ~ +85              | 30                           |
| XB24M57600S410 | 24.57600        | ±30                 | 10               | ±30                 | -40 ~ +85              | 30                           |
| XB24M57600S412 | 24.57600        | ±30                 | 12               | ±30                 | -40 ~ +85              | 30                           |
| XB24M57600S416 | 24.57600        | ±30                 | 16               | ±30                 | -40 ~ +85              | 30                           |
| XB24M57600S418 | 24.57600        | ±30                 | 18               | ±30                 | -40 ~ +85              | 30                           |
| XB24M57600S420 | 24.57600        | ±30                 | 20               | ±30                 | -40 ~ +85              | 30                           |
| XB24M57600S430 | 24.57600        | ±30                 | 30               | ±30                 | -40 ~ +85              | 30                           |

**ELECTRICAL PARAMETERS – FOR DIFFERENT PART CODE- Ta = 25°C**

| PART CODE      | FREQUENCY RANGE | FREQUENCY TOLERANCE | LOAD CAPACITANCE | FREQUENCY STABILITY | OPERATING TEMPE. RANGE | EQUIVALENT SERIES RESISTANCE |
|----------------|-----------------|---------------------|------------------|---------------------|------------------------|------------------------------|
|                | MHz             | ppm                 | pF               | ppm                 | °C                     | Ω Max.                       |
| XB25M00000S408 | 26.00000        | ±30                 | 8                | ±30                 | -40 ~ +85              | 30                           |
| XB25M00000S410 | 26.00000        | ±30                 | 10               | ±30                 | -40 ~ +85              | 30                           |
| XB25M00000S412 | 26.00000        | ±30                 | 12               | ±30                 | -40 ~ +85              | 30                           |
| XB25M00000S416 | 26.00000        | ±30                 | 16               | ±30                 | -40 ~ +85              | 30                           |
| XB25M00000S418 | 26.00000        | ±30                 | 18               | ±30                 | -40 ~ +85              | 30                           |
| XB25M00000S420 | 26.00000        | ±30                 | 20               | ±30                 | -40 ~ +85              | 60                           |
| XB25M00000S430 | 26.00000        | ±30                 | 30               | ±30                 | -40 ~ +85              | 30                           |
| XB27M00000S408 | 27.00000        | ±30                 | 8                | ±30                 | -40 ~ +85              | 30                           |
| XB27M00000S410 | 27.00000        | ±30                 | 10               | ±30                 | -40 ~ +85              | 30                           |
| XB27M00000S412 | 27.00000        | ±30                 | 12               | ±30                 | -40 ~ +85              | 30                           |
| XB27M00000S416 | 27.00000        | ±30                 | 16               | ±30                 | -40 ~ +85              | 30                           |
| XB27M00000S418 | 27.00000        | ±30                 | 18               | ±30                 | -40 ~ +85              | 30                           |
| XB27M00000S420 | 27.00000        | ±30                 | 20               | ±30                 | -40 ~ +85              | 30                           |
| XB27M00000S430 | 27.00000        | ±30                 | 30               | ±30                 | -40 ~ +85              | 30                           |
| XB29M49120S408 | 29.49120        | ±30                 | 8                | ±30                 | -40 ~ +85              | 30                           |
| XB29M49120S410 | 29.49120        | ±30                 | 10               | ±30                 | -40 ~ +85              | 30                           |
| XB29M49120S412 | 29.49120        | ±30                 | 12               | ±30                 | -40 ~ +85              | 30                           |
| XB29M49120S416 | 29.49120        | ±30                 | 16               | ±30                 | -40 ~ +85              | 30                           |
| XB29M49120S418 | 29.49120        | ±30                 | 18               | ±30                 | -40 ~ +85              | 30                           |
| XB29M49120S420 | 29.49120        | ±30                 | 20               | ±30                 | -40 ~ +85              | 30                           |

**ELECTRICAL PARAMETERS** – FOR DIFFERENT PART CODE- Ta = 25°C

| PART CODE      | FREQUENCY RANGE | FREQUENCY TOLERANCE | LOAD CAPACITANCE | FREQUENCY STABILITY | OPERATING TEMPE. RANGE | EQUIVALENT SERIES RESISTANCE |
|----------------|-----------------|---------------------|------------------|---------------------|------------------------|------------------------------|
|                | MHz             | ppm                 | pF               | ppm                 | °C                     | Ω Max.                       |
| XB29M49120S430 | 29.49120        | ±30                 | 30               | ±30                 | -40 ~ +85              | 30                           |
| XB30M00000S408 | 30.00000        | ±30                 | 8                | ±30                 | -40 ~ +85              | 40                           |
| XB30M00000S410 | 30.00000        | ±30                 | 10               | ±30                 | -40 ~ +85              | 40                           |
| XB30M00000S412 | 30.00000        | ±30                 | 12               | ±30                 | -40 ~ +85              | 40                           |
| XB30M00000S416 | 30.00000        | ±30                 | 16               | ±30                 | -40 ~ +85              | 40                           |
| XB30M00000S418 | 30.00000        | ±30                 | 18               | ±30                 | -40 ~ +85              | 40                           |
| XB30M00000S420 | 30.00000        | ±30                 | 20               | ±30                 | -40 ~ +85              | 40                           |
| XB30M00000S430 | 30.00000        | ±30                 | 30               | ±30                 | -40 ~ +85              | 40                           |
| XB32M00000S408 | 32.00000        | ±30                 | 8                | ±30                 | -40 ~ +85              | 20                           |
| XB32M00000S410 | 32.00000        | ±30                 | 10               | ±30                 | -40 ~ +85              | 20                           |
| XB32M00000S412 | 32.00000        | ±30                 | 12               | ±30                 | -40 ~ +85              | 20                           |
| XB32M00000S416 | 32.00000        | ±30                 | 16               | ±30                 | -40 ~ +85              | 20                           |
| XB32M00000S418 | 32.00000        | ±30                 | 18               | ±30                 | -40 ~ +85              | 20                           |
| XB32M00000S420 | 32.00000        | ±30                 | 20               | ±30                 | -40 ~ +85              | 20                           |
| XB32M00000S430 | 32.00000        | ±30                 | 30               | ±30                 | -40 ~ +85              | 20                           |
| XB36M00000S408 | 36.00000        | ±30                 | 8                | ±30                 | -40 ~ +85              | 20                           |
| XB36M00000S410 | 36.00000        | ±30                 | 10               | ±30                 | -40 ~ +85              | 20                           |
| XB36M00000S412 | 36.00000        | ±30                 | 12               | ±30                 | -40 ~ +85              | 20                           |
| XB36M00000S416 | 36.00000        | ±30                 | 16               | ±30                 | -40 ~ +85              | 20                           |
| XB36M00000S418 | 36.00000        | ±30                 | 18               | ±30                 | -40 ~ +85              | 20                           |

**ELECTRICAL PARAMETERS** – FOR DIFFERENT PART CODE- Ta = 25°C

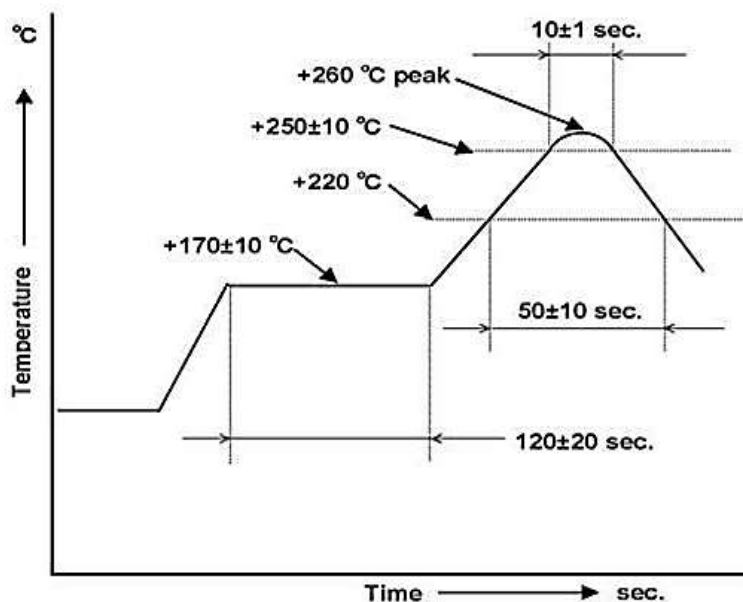
| PART CODE      | FREQUENCY RANGE | FREQUENCY TOLERANCE | LOAD CAPACITANCE | FREQUENCY STABILITY | OPERATING TEMPE. RANGE | EQUIVALENT SERIES RESISTANCE |
|----------------|-----------------|---------------------|------------------|---------------------|------------------------|------------------------------|
|                | MHz             | ppm                 | pF               | ppm                 | °C                     | Ω Max.                       |
| XB36M00000S420 | 36.00000        | ±30                 | 20               | ±30                 | -40 ~ +85              | 20                           |
| XB36M00000S430 | 36.00000        | ±30                 | 30               | ±30                 | -40 ~ +85              | 20                           |
| XB50M00000S408 | 50.00000        | ±30                 | 8                | ±30                 | -40 ~ +85              | 80                           |
| XB50M00000S410 | 50.00000        | ±30                 | 10               | ±30                 | -40 ~ +85              | 80                           |
| XB50M00000S412 | 50.00000        | ±30                 | 12               | ±30                 | -40 ~ +85              | 80                           |
| XB50M00000S416 | 50.00000        | ±30                 | 16               | ±30                 | -40 ~ +85              | 80                           |
| XB50M00000S418 | 50.00000        | ±30                 | 18               | ±30                 | -40 ~ +85              | 80                           |
| XB50M00000S420 | 50.00000        | ±30                 | 20               | ±30                 | -40 ~ +85              | 80                           |
| XB50M00000S430 | 50.00000        | ±30                 | 30               | ±30                 | -40 ~ +85              | 80                           |
|                |                 |                     |                  |                     |                        |                              |
|                |                 |                     |                  |                     |                        |                              |
|                |                 |                     |                  |                     |                        |                              |
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|                |                 |                     |                  |                     |                        |                              |
|                |                 |                     |                  |                     |                        |                              |
|                |                 |                     |                  |                     |                        |                              |

**RELIABILITY** - MECHANICAL AND ENVIRONMENTAL ENDURANCE - FOR REFERENCE ONLY

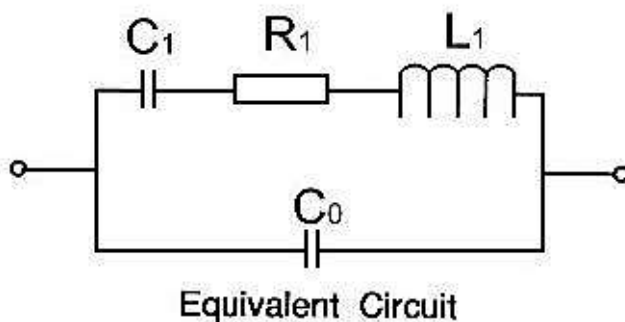
| TEST ITEMS          | TEST METHOD AND CONDITIONS                                                                                                  | REQUIREMENTS                                      |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Drop                | Free drop from 75cm height on a hard wooden board for 3 times. (Board is thickness more than 30mm.)                         | Frequency change:<br>≤5ppm<br>Rr as specification |
| Shake               | Shake frequency 10~55Hz, cyc1~2 minutes, swing 1.5mm, direction x/y/z, all 30 minutes, test after 1 hours.                  | Frequency change:<br>≤5ppm<br>Rr as specification |
| Airproof            | Put crystal into the pressure cabin with alcohol, keep pressure 0.4~0.5mpa 10 minutes, then take out and blow for 5 minutes | IR≥500MΩ                                          |
| Weld                | Temperature: 260±5°C<br>Time: 3 seconds                                                                                     | 90% exhibit tin ok                                |
| Humidity            | Temperature: +40±2°C<br>Humidity: 90%~95% R.H.<br>Time: 250 hours                                                           | Frequency change:<br>≤5ppm<br>Rr as specification |
| Low temperature     | Temperature: -30±2°C<br>Time: 250 hours<br>put in room temperature, test after 1 hours.                                     | Frequency change:<br>≤5ppm<br>Rr as specification |
| High Temperature    | Temperature: +85±2°C<br>Time: 250 hours<br>put in room temperature, test after 1 hours.                                     | Frequency change:<br>≤5ppm<br>Rr as specification |
| Temperature cycling | -30±3°C/30±3 min~+85±2°C/30±3min, 5 cycles                                                                                  | Frequency change:<br>≤5ppm<br>Rr as specification |

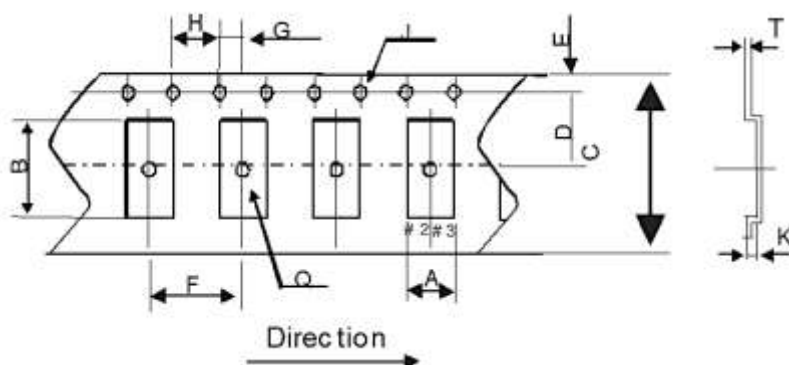
**SUGGESTED REFLOW PROFILE - FOR REFERENCE ONLY**

Condition:



**EQUIVALENT CIRCUIT**



**TAPE AND REEL** - Unit: mm, 1000pcs/Reel


| SYMBOL | TOLERANCE | DIMENSION (MM) |
|--------|-----------|----------------|
| A      | ±0.1      | 5.4            |
| B      | ±0.1      | 7.4            |
| C      | ±0.2      | 16             |
| D      | ±0.1      | 7.5            |
| E      | ±0.1      | 1.75           |
| F      | ±0.1      | 8.0            |
| G      | ±0.1      | 2.0            |
| H      | ±0.1      | 4.0            |
| J      | ±0.05     | 1.55           |
| K      | ±0.1      | 1.4            |
| Q      | +0.1/0    | 1.6            |
| T      | ±0.05     | 0.3            |



## IMPORTANT NOTES AND DISCLAIMER

1. **ROHS COMPLIANCE:** The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained at Download Center.
2. **REACH COMPLIANCE:** REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained at Download Center.
3. All Product parametric performance is indicated in the Electrical Characteristics for the listed herein test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
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