

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                  |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| <b>SPECIFICATION SHEET NO.</b>          | S0117 - YG32M00000S416                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                  |
| <b>ORIGINAL MFG/PART NO.</b>            | TGS Crystals/CCMD 32M0A20-16-30-40-40TLH/PMX206(AT)/AM2                                                                                                                                                                                                                                                                                                                                                                                                            |                                                  |
| <b>NEXTGEN PART CODE</b>                | YG32M00000S416                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Indicate This Code For <a href="#">RFQ/Order</a> |
| <b>DATE</b>                             | Jan. 17, 2025                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                  |
| <b>REVISION</b>                         | A1                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Updated With Most Recent Data                    |
| <b>DESCRIPTION AND MAIN PARAMETRICS</b> | MHz SMD Crystal 4 pads, Plastic Case, YG series<br>Dimension L8.0*W3.8*H2.5mm<br>32.000MHz, Tolerance $\pm 20$ ppm, Load Capacitor 16pF<br>Frequency stability $\pm 30$ ppm; Operating Temp. Range $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$ ,<br>ESR 40 ohm Max, Reflow Profile Condition 260 $^{\circ}\text{C}$ Max.<br>Package in Tape/Reel, 3000pcs/Reel<br>REACH/RoHS/RoHS III compliant, RoHS Annex III lead Exemption<br>(exempt per RoHS EU 2015/863) |                                                  |
| <b>CUSTOMER</b>                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                  |
| <b>CUSTOMER PART NUMBER</b>             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                  |
| <b>CROSS REF. PART NUMBER</b>           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                  |
| <b>MEMO</b>                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                  |

|                               |  |                                                                                       |                                                                                      |
|-------------------------------|--|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <b>VENDOR APPROVE</b>         |  |                                                                                       |                                                                                      |
| Issued/Checked/Approved       |  |    |  |
|                               |  |  |                                                                                      |
| Effective Date: Jan. 17, 2025 |  |                                                                                       |                                                                                      |

|                         |  |
|-------------------------|--|
| <b>CUSTOMER APPROVE</b> |  |
|                         |  |
| Date:                   |  |

## MAIN FEATURE

- MHz SMD Crystal L8.0\*W3.8\*H2.5mm 4 Pads
- Plastic case, Glass seal
- Low Profile and Short Lead time
- REACH/RoHS/RoHS III Compliant, RoHS Annex III Lead Exemption  
(exempt per RoHS EU 2015/863)
- Moist are Sensitivity Level (MSL) Level 1
- Excellent Aging and Wide Frequency Range
- Cross More Competitors' Parts.



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

## APPLICATION

- Microcontroller Systems, Microprocessors, Communication Interfaces
- Clock source for Portable



## ELECTRICAL CHARACTERISTICS

- See Page 6 ~Page 16 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 YG32M00000S416 For RFQ and Order.

## PART CODE GUIDE

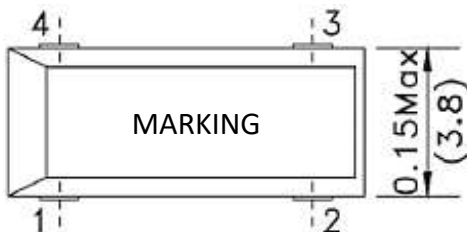
**RFQ**

[Request For Quotation](#)

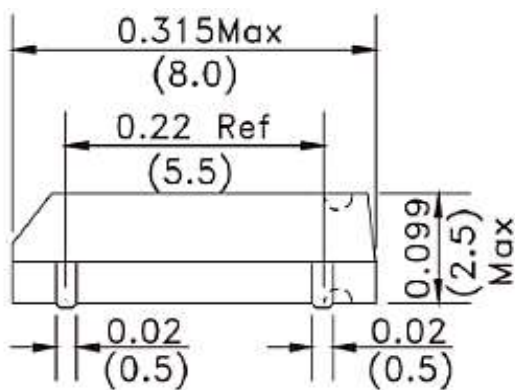
| CODE  | NAME                              | KEY SPECIFICATION OPTION                                                        |
|-------|-----------------------------------|---------------------------------------------------------------------------------|
| YG    | Series Code                       | MHz SMD Crystal L8.0*W3.8*H2.5mm 4 Pads                                         |
| 32M0  | Frequency Range Code              | 32M0: 32.0MHz or Custom Frequency Range by Page 7~ Page 16                      |
| 0000S | Internal Control Code             | Letter A~Z, a~z or digits (0~9)                                                 |
| 416   | Parameters code                   | Special Parameters Code Letter A~Z, a~z or digits (1-9)                         |
| XX    | Special/Custom<br>Parameters Code | Blank: N/A<br>XX: Letter A~Z, a~z or digits (0~9) for Special/Custom Parameters |

**DIMENSION** (Unit: Inch/mm)

Top View



Side View

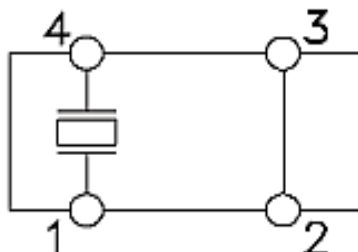


Side View



Note: Metal (Crystal inside) may be exposed on the top or bottom of plastic case. That will not be affect performance and reliability of the part in question

### Electrode Arrangement



Pin 2 and Pin 3 are not be connected to the GND (Floating)

### Recommended Land Pattern (Unit: inch/mm)



GENERAL SPECIFICATION

| PARAMETER                    | SYMBOL        | VALUE       |      |        | UNIT | CONDITION                  |
|------------------------------|---------------|-------------|------|--------|------|----------------------------|
|                              |               | MIN.        | TYPE | MAX.   |      |                            |
| Frequency Range              | F0            | 8.000       | -    | 54.000 | MHz  | Customer specified         |
| Mode of Vibration Code       |               | Fundamental |      |        |      | Optional: 3rd OT Or 5th OT |
| Frequency Tolerance          | $\Delta F/F0$ | ±10         | ±30  | ±50    | ppm  | at 25°C±3°C                |
| Load Capacitance             | CL            | 8           | 18   | Series | pF   | Customer specified         |
| Frequency Stability          | Tc            | ±30         | ±30  | ±50    | ppm  | Customer specified         |
| Operating Temp. Range        | TOPR          | -40         | -    | +85    | °C   | Standard                   |
| Storage Temp. Range          | TSTG          | -55         | -    | +125   | °C   |                            |
| Equivalent Series Resistance | ESR           | See Table 1 |      |        | Ω    | Customer specified         |
| Drive Level                  | DL            | -           | 100  | 200    | μW   |                            |
| Insulation Resistance        | IR            | 500         | -    |        | mΩ   | At 100VDC                  |
| Shunt Capacitance            | C0            | -           | -    | 5.0    | pF   |                            |
| Aging per year               | Fa            | -5          | -    | +5     | ppm  | 1st Year                   |

Table 1

| FREQUENCY RANGE          | MODE OF VIBRATION | ESR (Ω) MAX |
|--------------------------|-------------------|-------------|
| 8.000MHz≤ F0 <10.000MHz  | Fundamental       | 200         |
| 10.000MHz≤ F0 <12.000MHz | Fundamental       | 150         |
| 12.000MHz≤ F0 <16.000MHz | Fundamental       | 120         |
| 16.000MHz≤ F0 <20.000MHz | Fundamental       | 100         |
| 20.000MHz≤ F0 <30.000MHz | Fundamental       | 80          |
| 30.000MHz≤ F0 <54.000MHz | Fundamental       | 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.                       |
| YG8M000000S408  | 8.00000         | ±20                 | 8                | ±30                 | -40 ~ +85              | 200                          |
| YG8M000000S410  | 8.00000         | ±20                 | 10               | ±30                 | -40 ~ +85              | 200                          |
| YG8M000000S412  | 8.00000         | ±20                 | 12               | ±30                 | -40 ~ +85              | 200                          |
| YG8M000000S416  | 8.00000         | ±20                 | 16               | ±30                 | -40 ~ +85              | 200                          |
| YG8M000000S418  | 8.00000         | ±20                 | 18               | ±30                 | -40 ~ +85              | 200                          |
| YG8M000000S420  | 8.00000         | ±20                 | 20               | ±30                 | -40 ~ +85              | 200                          |
| YG8M000000S430  | 8.00000         | ±20                 | 30               | ±30                 | -40 ~ +85              | 200                          |
| YG10M000000S408 | 10.00000        | ±20                 | 8                | ±30                 | -40 ~ +85              | 150                          |
| YG10M000000S410 | 10.00000        | ±20                 | 10               | ±30                 | -40 ~ +85              | 150                          |
| YG10M000000S412 | 10.00000        | ±20                 | 12               | ±30                 | -40 ~ +85              | 150                          |
| YG10M000000S416 | 10.00000        | ±20                 | 16               | ±30                 | -40 ~ +85              | 150                          |
| YG10M000000S418 | 10.00000        | ±20                 | 18               | ±30                 | -40 ~ +85              | 150                          |
| YG10M000000S420 | 10.00000        | ±20                 | 20               | ±30                 | -40 ~ +85              | 150                          |
| YG10M000000S430 | 10.00000        | ±20                 | 30               | ±30                 | -40 ~ +85              | 150                          |
| YG11M05920S408  | 11.05920        | ±20                 | 8                | ±30                 | -40 ~ +85              | 150                          |
| YG11M05920S410  | 11.05920        | ±20                 | 10               | ±30                 | -40 ~ +85              | 150                          |
| YG11M05920S412  | 11.05920        | ±20                 | 12               | ±30                 | -40 ~ +85              | 150                          |
| YG11M05920S416  | 11.05920        | ±20                 | 16               | ±30                 | -40 ~ +85              | 150                          |
| YG11M05920S418  | 11.05920        | ±20                 | 18               | ±30                 | -40 ~ +85              | 150                          |
| YG11M05920S420  | 11.05920        | ±20                 | 20               | ±30                 | -40 ~ +85              | 150                          |

**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.                       |
| YG11M05920S430 | 11.05920        | ±20                 | 30               | ±30                 | -40 ~ +85              | 150                          |
| YG12M00000S408 | 12.00000        | ±20                 | 8                | ±30                 | -40 ~ +85              | 100                          |
| YG12M00000S410 | 12.00000        | ±20                 | 10               | ±30                 | -40 ~ +85              | 100                          |
| YG12M00000S412 | 12.00000        | ±20                 | 12               | ±30                 | -40 ~ +85              | 100                          |
| YG12M00000S416 | 12.00000        | ±20                 | 16               | ±30                 | -40 ~ +85              | 100                          |
| YG12M00000S418 | 12.00000        | ±20                 | 18               | ±30                 | -40 ~ +85              | 100                          |
| YG12M00000S420 | 12.00000        | ±20                 | 20               | ±30                 | -40 ~ +85              | 100                          |
| YG12M00000S430 | 12.00000        | ±20                 | 30               | ±30                 | -40 ~ +85              | 100                          |
| YG12M28800S408 | 12.28800        | ±20                 | 8                | ±30                 | -40 ~ +85              | 100                          |
| YG12M28800S410 | 12.28800        | ±20                 | 10               | ±30                 | -40 ~ +85              | 100                          |
| YG12M28800S412 | 12.28800        | ±20                 | 12               | ±30                 | -40 ~ +85              | 100                          |
| YG12M28800S416 | 12.28800        | ±20                 | 16               | ±30                 | -40 ~ +85              | 100                          |
| YG12M28800S418 | 12.28800        | ±20                 | 18               | ±30                 | -40 ~ +85              | 100                          |
| YG12M28800S420 | 12.28800        | ±20                 | 20               | ±30                 | -40 ~ +85              | 100                          |
| YG12M28800S430 | 12.28800        | ±20                 | 30               | ±30                 | -40 ~ +85              | 100                          |
| YG14M31818S408 | 14.31818        | ±20                 | 8                | ±30                 | -40 ~ +85              | 100                          |
| YG14M31818S410 | 14.31818        | ±20                 | 10               | ±30                 | -40 ~ +85              | 100                          |
| YG14M31818S412 | 14.31818        | ±20                 | 12               | ±30                 | -40 ~ +85              | 100                          |
| YG14M31818S416 | 14.31818        | ±20                 | 16               | ±30                 | -40 ~ +85              | 100                          |
| YG14M31818S418 | 14.31818        | ±20                 | 18               | ±30                 | -40 ~ +85              | 100                          |

**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.                       |
| YG14M31818S420 | 14.31818        | ±20                 | 20               | ±30                 | -40 ~ +85              | 100                          |
| YG14M31818S430 | 14.31818        | ±20                 | 30               | ±30                 | -40 ~ +85              | 100                          |
| YG14M74560S408 | 14.74560        | ±20                 | 8                | ±30                 | -40 ~ +85              | 100                          |
| YG14M74560S410 | 14.74560        | ±20                 | 10               | ±30                 | -40 ~ +85              | 100                          |
| YG14M74560S412 | 14.74560        | ±20                 | 12               | ±30                 | -40 ~ +85              | 100                          |
| YG14M74560S416 | 14.74560        | ±20                 | 16               | ±30                 | -40 ~ +85              | 100                          |
| YG14M74560S418 | 14.74560        | ±20                 | 18               | ±30                 | -40 ~ +85              | 100                          |
| YG14M74560S420 | 14.74560        | ±20                 | 20               | ±30                 | -40 ~ +85              | 100                          |
| YG14M74560S430 | 14.74560        | ±20                 | 30               | ±30                 | -40 ~ +85              | 100                          |
| YG16M00000S408 | 16.00000        | ±20                 | 8                | ±30                 | -40 ~ +85              | 80                           |
| YG16M00000S410 | 16.00000        | ±20                 | 10               | ±30                 | -40 ~ +85              | 80                           |
| YG16M00000S412 | 16.00000        | ±20                 | 12               | ±30                 | -40 ~ +85              | 80                           |
| YG16M00000S416 | 16.00000        | ±20                 | 16               | ±30                 | -40 ~ +85              | 80                           |
| YG16M00000S418 | 16.00000        | ±20                 | 18               | ±30                 | -40 ~ +85              | 80                           |
| YG16M00000S420 | 16.00000        | ±20                 | 20               | ±30                 | -40 ~ +85              | 80                           |
| YG16M00000S430 | 16.00000        | ±20                 | 30               | ±30                 | -40 ~ +85              | 80                           |
| YG16M38400S408 | 16.38400        | ±20                 | 8                | ±30                 | -40 ~ +85              | 80                           |
| YG16M38400S410 | 16.38400        | ±20                 | 10               | ±30                 | -40 ~ +85              | 80                           |
| YG16M38400S412 | 16.38400        | ±20                 | 12               | ±30                 | -40 ~ +85              | 80                           |
| YG16M38400S416 | 16.38400        | ±20                 | 16               | ±30                 | -40 ~ +85              | 80                           |

**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.                       |
| YG16M38400S418 | 16.38400        | ±20                 | 18               | ±30                 | -40 ~ +85              | 80                           |
| YG16M38400S420 | 16.38400        | ±20                 | 20               | ±30                 | -40 ~ +85              | 80                           |
| YG16M38400S430 | 16.38400        | ±20                 | 30               | ±30                 | -40 ~ +85              | 80                           |
| YG18M43200S408 | 18.43200        | ±20                 | 8                | ±30                 | -40 ~ +85              | 80                           |
| YG18M43200S410 | 18.43200        | ±20                 | 10               | ±30                 | -40 ~ +85              | 80                           |
| YG18M43200S412 | 18.43200        | ±20                 | 12               | ±30                 | -40 ~ +85              | 80                           |
| YG18M43200S416 | 18.43200        | ±20                 | 16               | ±30                 | -40 ~ +85              | 80                           |
| YG18M43200S418 | 18.43200        | ±20                 | 18               | ±30                 | -40 ~ +85              | 80                           |
| YG18M43200S420 | 18.43200        | ±20                 | 20               | ±30                 | -40 ~ +85              | 80                           |
| YG18M43200S430 | 18.43200        | ±20                 | 30               | ±30                 | -40 ~ +85              | 80                           |
| YG19M20000S408 | 19.20000        | ±20                 | 8                | ±30                 | -40 ~ +85              | 80                           |
| YG19M20000S410 | 19.20000        | ±20                 | 10               | ±30                 | -40 ~ +85              | 80                           |
| YG19M20000S412 | 19.20000        | ±20                 | 12               | ±30                 | -40 ~ +85              | 80                           |
| YG19M20000S416 | 19.20000        | ±20                 | 16               | ±30                 | -40 ~ +85              | 80                           |
| YG19M20000S418 | 19.20000        | ±20                 | 18               | ±30                 | -40 ~ +85              | 80                           |
| YG19M20000S420 | 19.20000        | ±20                 | 20               | ±30                 | -40 ~ +85              | 80                           |
| YG19M20000S430 | 19.20000        | ±20                 | 30               | ±30                 | -40 ~ +85              | 80                           |
| YG20M00000S408 | 20.00000        | ±20                 | 8                | ±30                 | -40 ~ +85              | 60                           |
| YG20M00000S410 | 20.00000        | ±20                 | 10               | ±30                 | -40 ~ +85              | 60                           |
| YG20M00000S412 | 20.00000        | ±20                 | 12               | ±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.                       |
| YG20M00000S416 | 20.00000        | ±20                 | 16               | ±30                 | -40 ~ +85              | 60                           |
| YG20M00000S418 | 20.00000        | ±20                 | 18               | ±30                 | -40 ~ +85              | 60                           |
| YG20M00000S420 | 20.00000        | ±20                 | 20               | ±30                 | -40 ~ +85              | 60                           |
| YG20M00000S430 | 20.00000        | ±20                 | 30               | ±30                 | -40 ~ +85              | 60                           |
| YG22M11840S408 | 22.11840        | ±20                 | 8                | ±30                 | -40 ~ +85              | 60                           |
| YG22M11840S410 | 22.11840        | ±20                 | 10               | ±30                 | -40 ~ +85              | 60                           |
| YG22M11840S412 | 22.11840        | ±20                 | 12               | ±30                 | -40 ~ +85              | 60                           |
| YG22M11840S416 | 22.11840        | ±20                 | 16               | ±30                 | -40 ~ +85              | 60                           |
| YG22M11840S418 | 22.11840        | ±20                 | 18               | ±30                 | -40 ~ +85              | 60                           |
| YG22M11840S420 | 22.11840        | ±20                 | 20               | ±30                 | -40 ~ +85              | 60                           |
| YG22M11840S430 | 22.11840        | ±20                 | 30               | ±30                 | -40 ~ +85              | 60                           |
| YG24M00000S408 | 24.00000        | ±20                 | 8                | ±30                 | -40 ~ +85              | 60                           |
| YG24M00000S410 | 24.00000        | ±20                 | 10               | ±30                 | -40 ~ +85              | 60                           |
| YG24M00000S412 | 24.00000        | ±20                 | 12               | ±30                 | -40 ~ +85              | 60                           |
| YG24M00000S416 | 24.00000        | ±20                 | 16               | ±30                 | -40 ~ +85              | 60                           |
| YG24M00000S418 | 24.00000        | ±20                 | 18               | ±30                 | -40 ~ +85              | 60                           |
| YG24M00000S420 | 24.00000        | ±20                 | 20               | ±30                 | -40 ~ +85              | 60                           |
| YG24M00000S430 | 24.00000        | ±20                 | 30               | ±30                 | -40 ~ +85              | 60                           |
| YG24M57600S408 | 24.57600        | ±20                 | 8                | ±30                 | -40 ~ +85              | 60                           |
| YG24M57600S410 | 24.57600        | ±20                 | 10               | ±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.                       |
| YG24M57600S412 | 24.57600        | ±20                 | 12               | ±30                 | -40 ~ +85              | 60                           |
| YG24M57600S416 | 24.57600        | ±20                 | 16               | ±30                 | -40 ~ +85              | 60                           |
| YG24M57600S418 | 24.57600        | ±20                 | 18               | ±30                 | -40 ~ +85              | 60                           |
| YG24M57600S420 | 24.57600        | ±20                 | 20               | ±30                 | -40 ~ +85              | 60                           |
| YG24M57600S430 | 24.57600        | ±20                 | 30               | ±30                 | -40 ~ +85              | 60                           |
| YG25M00000S408 | 25.00000        | ±20                 | 8                | ±30                 | -40 ~ +85              | 60                           |
| YG25M00000S410 | 25.00000        | ±20                 | 10               | ±30                 | -40 ~ +85              | 60                           |
| YG25M00000S412 | 25.00000        | ±20                 | 12               | ±30                 | -40 ~ +85              | 60                           |
| YG25M00000S416 | 25.00000        | ±20                 | 16               | ±30                 | -40 ~ +85              | 60                           |
| YG25M00000S418 | 25.00000        | ±20                 | 18               | ±30                 | -40 ~ +85              | 60                           |
| YG25M00000S420 | 25.00000        | ±20                 | 20               | ±30                 | -40 ~ +85              | 60                           |
| YG25M00000S430 | 25.00000        | ±20                 | 30               | ±30                 | -40 ~ +85              | 60                           |
| YG26M00000S408 | 26.00000        | ±20                 | 8                | ±30                 | -40 ~ +85              | 60                           |
| YG26M00000S410 | 26.00000        | ±20                 | 10               | ±30                 | -40 ~ +85              | 60                           |
| YG26M00000S412 | 26.00000        | ±20                 | 12               | ±30                 | -40 ~ +85              | 60                           |
| YG26M00000S416 | 26.00000        | ±20                 | 16               | ±30                 | -40 ~ +85              | 60                           |
| YG26M00000S418 | 26.00000        | ±20                 | 18               | ±30                 | -40 ~ +85              | 60                           |
| YG26M00000S420 | 26.00000        | ±20                 | 20               | ±30                 | -40 ~ +85              | 60                           |
| YG26M00000S430 | 26.00000        | ±20                 | 30               | ±30                 | -40 ~ +85              | 60                           |
| YG27M00000S408 | 27.00000        | ±20                 | 8                | ±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.                       |
| YG27M00000S410 | 27.00000        | ±20                 | 10               | ±30                 | -40 ~ +85              | 60                           |
| YG27M00000S412 | 27.00000        | ±20                 | 12               | ±30                 | -40 ~ +85              | 60                           |
| YG27M00000S416 | 27.00000        | ±20                 | 16               | ±30                 | -40 ~ +85              | 60                           |
| YG27M00000S418 | 27.00000        | ±20                 | 18               | ±30                 | -40 ~ +85              | 60                           |
| YG27M00000S420 | 27.00000        | ±20                 | 20               | ±30                 | -40 ~ +85              | 60                           |
| YG27M00000S430 | 27.00000        | ±20                 | 30               | ±30                 | -40 ~ +85              | 60                           |
| YG27M12000S408 | 27.12000        | ±20                 | 8                | ±30                 | -40 ~ +85              | 60                           |
| YG27M12000S410 | 27.12000        | ±20                 | 10               | ±30                 | -40 ~ +85              | 60                           |
| YG27M12000S412 | 27.12000        | ±20                 | 12               | ±30                 | -40 ~ +85              | 60                           |
| YG27M12000S416 | 27.12000        | ±20                 | 16               | ±30                 | -40 ~ +85              | 60                           |
| YG27M12000S418 | 27.12000        | ±20                 | 18               | ±30                 | -40 ~ +85              | 60                           |
| YG27M12000S420 | 27.12000        | ±20                 | 20               | ±30                 | -40 ~ +85              | 60                           |
| YG27M12000S430 | 27.12000        | ±20                 | 30               | ±30                 | -40 ~ +85              | 60                           |
| YG28M63636S408 | 28.63636        | ±20                 | 8                | ±30                 | -40 ~ +85              | 60                           |
| YG28M63636S410 | 28.63636        | ±20                 | 10               | ±30                 | -40 ~ +85              | 60                           |
| YG28M63636S412 | 28.63636        | ±20                 | 12               | ±30                 | -40 ~ +85              | 60                           |
| YG28M63636S416 | 28.63636        | ±20                 | 16               | ±30                 | -40 ~ +85              | 60                           |
| YG28M63636S418 | 28.63636        | ±20                 | 18               | ±30                 | -40 ~ +85              | 60                           |
| YG28M63636S420 | 28.63636        | ±20                 | 20               | ±30                 | -40 ~ +85              | 60                           |
| YG28M63636S430 | 28.63636        | ±20                 | 30               | ±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.                       |
| YG30M00000S408        | 30.00000        | ±20                 | 8                | ±30                 | -40 ~ +85              | 40                           |
| YG30M00000S410        | 30.00000        | ±20                 | 10               | ±30                 | -40 ~ +85              | 40                           |
| YG30M00000S412        | 30.00000        | ±20                 | 12               | ±30                 | -40 ~ +85              | 40                           |
| YG30M00000S416        | 30.00000        | ±20                 | 16               | ±30                 | -40 ~ +85              | 40                           |
| YG30M00000S418        | 30.00000        | ±20                 | 18               | ±30                 | -40 ~ +85              | 40                           |
| YG30M00000S420        | 30.00000        | ±20                 | 20               | ±30                 | -40 ~ +85              | 40                           |
| YG30M00000S430        | 30.00000        | ±20                 | 30               | ±30                 | -40 ~ +85              | 40                           |
| YG32M00000S408        | 32.00000        | ±20                 | 8                | ±30                 | -40 ~ +85              | 40                           |
| YG32M00000S410        | 32.00000        | ±20                 | 10               | ±30                 | -40 ~ +85              | 40                           |
| YG32M00000S412        | 32.00000        | ±20                 | 12               | ±30                 | -40 ~ +85              | 40                           |
| <b>YG32M00000S416</b> | 32.00000        | ±20                 | 16               | ±30                 | -40 ~ +85              | 40                           |
| YG32M00000S418        | 32.00000        | ±20                 | 18               | ±30                 | -40 ~ +85              | 40                           |
| YG32M00000S420        | 32.00000        | ±20                 | 20               | ±30                 | -40 ~ +85              | 40                           |
| YG32M00000S430        | 32.00000        | ±20                 | 30               | ±30                 | -40 ~ +85              | 40                           |
| YG36M00000S408        | 36.00000        | ±20                 | 8                | ±30                 | -40 ~ +85              | 40                           |
| YG36M00000S410        | 36.00000        | ±20                 | 10               | ±30                 | -40 ~ +85              | 40                           |
| YG36M00000S412        | 36.00000        | ±20                 | 12               | ±30                 | -40 ~ +85              | 40                           |
| YG36M00000S416        | 36.00000        | ±20                 | 16               | ±30                 | -40 ~ +85              | 40                           |
| YG36M00000S418        | 36.00000        | ±20                 | 18               | ±30                 | -40 ~ +85              | 40                           |
| YG36M00000S420        | 36.00000        | ±20                 | 20               | ±30                 | -40 ~ +85              | 40                           |

**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.                       |
| YG36M00000S430 | 36.00000        | ±20                 | 30               | ±30                 | -40 ~ +85              | 40                           |
| YG38M40000S408 | 38.40000        | ±20                 | 8                | ±30                 | -40 ~ +85              | 40                           |
| YG38M40000S410 | 38.40000        | ±20                 | 10               | ±30                 | -40 ~ +85              | 40                           |
| YG38M40000S412 | 38.40000        | ±20                 | 12               | ±30                 | -40 ~ +85              | 40                           |
| YG38M40000S416 | 38.40000        | ±20                 | 16               | ±30                 | -40 ~ +85              | 40                           |
| YG38M40000S418 | 38.40000        | ±20                 | 18               | ±30                 | -40 ~ +85              | 40                           |
| YG38M40000S420 | 38.40000        | ±20                 | 20               | ±30                 | -40 ~ +85              | 40                           |
| YG38M40000S430 | 38.40000        | ±20                 | 30               | ±30                 | -40 ~ +85              | 40                           |
| YG40M00000S408 | 40.00000        | ±20                 | 8                | ±30                 | -40 ~ +85              | 40                           |
| YG40M00000S410 | 40.00000        | ±20                 | 10               | ±30                 | -40 ~ +85              | 40                           |
| YG40M00000S412 | 40.00000        | ±20                 | 12               | ±30                 | -40 ~ +85              | 40                           |
| YG40M00000S416 | 40.00000        | ±20                 | 16               | ±30                 | -40 ~ +85              | 40                           |
| YG40M00000S418 | 40.00000        | ±20                 | 18               | ±30                 | -40 ~ +85              | 40                           |
| YG40M00000S420 | 40.00000        | ±20                 | 20               | ±30                 | -40 ~ +85              | 40                           |
| YG40M00000S430 | 40.00000        | ±20                 | 30               | ±30                 | -40 ~ +85              | 40                           |
| YG48M00000S408 | 48.00000        | ±20                 | 8                | ±30                 | -40 ~ +85              | 40                           |
| YG48M00000S410 | 48.00000        | ±20                 | 10               | ±30                 | -40 ~ +85              | 40                           |
| YG48M00000S412 | 48.00000        | ±20                 | 12               | ±30                 | -40 ~ +85              | 40                           |
| YG48M00000S416 | 48.00000        | ±20                 | 16               | ±30                 | -40 ~ +85              | 40                           |
| YG48M00000S418 | 48.00000        | ±20                 | 18               | ±30                 | -40 ~ +85              | 40                           |

[illegible]

## TEST STANDARD

### 1. General Electrical Characteristics And Visual Testing

1.1 Lot classification : if the quantity is 1000pcs or more, 1000pcs is one lot

1.2 Sampling test method : MII-STD-105E G-II

1.3 Test level

A) High level defect : AQL 0.065% [200 pcs]

B) Medium level defect : AQL 0.25% [50 pcs]

C) Low level defect : AQL 0.4% [32 pcs]

1.4 Defect classification

A) High level

@No frequency

@Mixing

@Leak defect

B) Medium level - Electrical characteristic defect

@Frequency

@Oscillation

@Electrical current

@Other electrical characteristics defect

C) Visual

@Marking

@Welding

@Leads

@Other visual defect

Testing method and its standard can be modified depending on the customer's request.

## 2. Equivalent Circuits



Symbol For Crystal Unit



## CHARACTERISTICS

Units and values indicated with { } in this specification are the former units and the specified values.

### Standard Atmospheric Conditions:

Unless otherwise specified the standard range of atmospheric conditions for making measurements and tests is as follows:

Ambient temperature: 15°C to 35°C

Relative humidity : 25% to 85%

Air pressure : 86 to 106 k Pa

If there is any doubt about the results measurements shall be made within the following limits:

Ambient temperature :  $25 \pm 1^\circ\text{C}$

Relative humidity : 63% to 67%

Air pressure : 86 to 106 k Pa

### Operating Temperature Range:

The operating temperature range is the range of ambient temperatures at which the quartz crystal oscillator can be stored without damage. Conditions are as specified elsewhere on these specifications.

Operating temperature range: -40°C to +85°C

### Storage Temperature Range:

The storage temperature range is the range of ambient temperatures at which the quartz crystal oscillator can be stored without damage. Conditions are as specified elsewhere on these specifications.

Storage temperature range: -55°C to +125°C

## **CAUTION**

\* In Order To Maintain Quality. Without Change In Characteristics Of The crystal Units. Please Follow Below Recommendation

### **Shock**

All Crystal Units Have A Thin Crystal Blanks Within If It Is Dropped Above The Recommended Dropping Height (500mm) The Specific Characteristics And Appearance Can Be Changed Please Pay Special Attention To External Shock

### **Environmental**

- 1) Crystal Units' Frequency Can Be Changed Due To Surrounding Temperature If It Is Stored Next To A High Temperature Heter (Above+85'c) Or Below 40'c.And A Strong Light Source For Long Period Of Time. The Electrical Characteristics Can Be Changed It Is Suggested That These Environment Be Avoided
- 2) If The Unit Is Placed In A Humid Environment. Lead Terminal Can Be Damaged: Therefore. Do Not Store The Crystal Units In A Humid Environment
- 3) Crystal unit Has Vibrating Characteristics If It Is Placed Where Vibration Exists The Operating Characteristics Can Be Altered; Therefore This Environment Should Be Avoided

### **Leads**

- 1) After Soldering Crystal Units Into A PCB Impacting The Unit From The top, bottom Left Or Right Side Of The Unit Can Shatter The Glass Portion Of The Base Aendering The Unit Useless

### **Assembly Method**

- 1) Correct Ultrasonic Frequency For Cleaning Should Be Less Than 20khz
- 2) SOLDERING SHOULD BE BONE USING IEC 61760-1 OR Pb-free Products

### **Storage**

If The Crystal Units Are Stored In Humid Or Salty Environment Appearance Can Be Changed And Solderability Can Deteriorate; Therefore avoid Storing In Such Environment Do Not Store The Crystal Unit More Than 3 Months

**RELIABILITY (MECHANICAL AND ENVIRONMENTAL ENDURANCE)**

| TEST ITEMS                     | TEST METHOD AND CONDITIONS                                                                                                                                                                                                                                                                                                                  | REQUIREMENTS                                                                          |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Vibration                      | a) Vibration Frequency: 10 To 55hz<br>b) Vibration Amplitude: 1.5mm<br>c) Cycle Time: 1~2min(10-55-10hz)<br>d) Direction: X.Y.Z<br>e) Duration: 2h/Each Direction, total 6Hours<br>f) G-force: $\geq 5G$                                                                                                                                    | Frequency change:<br>$\pm 10\text{ppm max.}$<br>Resistance change:<br>$\pm 15\%rrmax$ |
| Shock                          | 3 times free drop from 75cm height to hard wooden board of thickness more than 30mm.                                                                                                                                                                                                                                                        | Frequency change:<br>$\pm 10\text{ppm max.}$<br>Resistance change:<br>$\pm 15\%rrmax$ |
| Leakage                        | Put crystal units into a hermetic container and helium for 0.5-0.6.Mpa, and keep it for 1h;<br>Check the leakage by a helium leak detector.                                                                                                                                                                                                 | Leakage: $1 \times 10^{-8}$ mbar.L/S<br>Max                                           |
| Solderability                  | a) Dip the leads into flux(Rojin methanol) for 3~5s.<br>b) Dip the leads into $245 \pm 5^{\circ}\text{C}$ 99% SN dipping solution for 5s                                                                                                                                                                                                    | The dipped part of the Leads should have 95% SN coating.                              |
| Soldering Heat Resistance Test | a) Perform electrical characteristics test before starting this procedure.<br>b) Dip the leads into flux(Rojin methanol) $5 \pm 0.5\text{s}$ .<br>c) Dip the leads into $260 \pm 5^{\circ}\text{C}$ 99% SN dipping solution for 5s.<br>d) Take the unit out ,store at room temperature for 30s then measure the Electrical characteristics. | Should pass sealing and visual test.<br>Frequency change:<br>$\pm 10\text{ppm max.}$  |
| Leak Test                      | Use helium leak detector.<br>Bombing pressure: $5\text{kg/cm}^2$<br>Bombing time: 2 hours<br>Leak should be less than $1\text{e-}^8$ atm.cc/sec.                                                                                                                                                                                            | Gas or air should not be detected.                                                    |
| High Temperature Endurance     | The crystal units shall be put in somewhere for 500 hours at temperature of $125^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , then keep it for 1 to 2 hours under room temperature.                                                                                                                                                             | Frequency change:<br>$\pm 10\text{ppm max.}$<br>Resistance change:<br>$\pm 15\%rrmax$ |

**RELIABILITY** (MECHANICAL AND ENVIRONMENTAL ENDURANCE)

| TEST ITEMS                | TEST METHOD AND CONDITIONS                                                                                                                                                                                                      | REQUIREMENTS                                                          |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| Low Temperature Endurance | The crystal units shall be put in somewhere for 500 hours at temperature of -40°C, then keep it for 1 to 2 hours under room                                                                                                     | Frequency change:<br>±10ppm max.<br>Resistance change:<br>± 15%rrmax  |
| Humidity Endurance        | Somewhere at 40°C±5°C in relative humidity of 90%~95% for 72 hours, then keep it for one or two hours under room temperature                                                                                                    | Frequency change:<br>± 10ppm max.<br>Resistance change:<br>± 15%rrmax |
| Temperature Cycle         | Temperature shift from low (-40°C) to high(100°C,keep 30 minutes),satisfy high(100°C) to low(-40°C, keep 30 minutes), then go up to room temperature for 10 cycles                                                              | Frequency change:<br>± 10ppm max.<br>Resistance change:<br>± 15%rrmax |
| Lead Tensity              | a) Fix the unit.<br>b) Apply 2LB of weight axis to the leads.<br>c) Time: 5s                                                                                                                                                    | Should pass sealing and visual test.                                  |
| Lead Bending              | a) Attach 1lb of weight to each of the leads.<br>b) Bending angle: 90° (from the normal position to 45° opposite direction)<br>c) Bending time: 3s(each direction)<br>Number of bending: 2times<br>a) Number of bending: 2times | Should pass sealing and visual test.                                  |
| Marking Erase             | Submerge the unit into ipa [isopropyl alcohol] Solution for 10minutes and brush the marking 10 times with a tooth brush.                                                                                                        | Marking should not be erased.                                         |

**MATERIAL DATA DECLARATION SHEET – For Reference Only**

| COMPONENT | MATERIAL NAME     | MATERIAL MASS (MG) | SUBSTANCES      |        |            |             | MATERIAL ANALYSIS (%) |
|-----------|-------------------|--------------------|-----------------|--------|------------|-------------|-----------------------|
|           |                   |                    | NAME            | SYMBOL | CAS#       | WEIGHT (MG) |                       |
| Base      | Metal Ring (42Ni) | 6.112              | Nickel          | Ni     | 7440-02-0  | 2.506       | 41.0                  |
|           |                   |                    | Iron            | Fe     | 439-89-6   | 3.534       | 57.82                 |
|           |                   |                    | Cobalt          | Co     | 7440-48-4  | 0.031       | 0.51                  |
|           |                   |                    | Manganese       | Mn     | 7439-96-5  | 0.024       | 0.40                  |
|           |                   |                    | Silicon         | Si     | 7440-21-3  | 0.01        | 0.16                  |
|           |                   |                    | Carbon          | C      | 7440-44-0  | 0.006       | 0.10                  |
|           | Glass             | 2.750              | Silicon dioxide | SiO2   | 7631-86-9  | 1.696       | 61.68                 |
|           |                   |                    | Aluminum oxide  | Al2O3  | 1344-28-1  | 0.242       | 8.81                  |
|           |                   |                    | Boron oxide     | B2O3   | 1303-86-2  | 0.448       | 16.30                 |
|           |                   |                    | Lithium oxide   | Li2O   | 12057-24-8 | 0.061       | 2.20                  |
|           |                   |                    | Sodium oxide    | Na2O   | 1313-59-3  | 0.242       | 8.81                  |
|           |                   |                    | kalium oxide    | K2O    | 12030-88-5 | 0.061       | 2.20                  |
|           | Leads (Kovar)     | 3.521              | Iron            | Fe     | 7439-89-6  | 1.889       | 53.64                 |
|           |                   |                    | Nickel          | Ni     | 7440-02-0  | 1.021       | 29.00                 |
|           |                   |                    | Cobalt          | Co     | 7440-48-4  | 0.598       | 16.98                 |
|           |                   |                    | Carbon          | C      | 7440-44-0  | 0.001       | 0.02                  |
|           |                   |                    | Silicon         | Si     | 7440-21-3  | 0.009       | 0.26                  |
|           |                   |                    | Manganese       | Mn     | 7439-96-5  | 0.003       | 0.09                  |
|           | Surface Coating   | 2.586              | plumbum         | Pb     | 7439-92-1  | 2.338       | 90.41                 |
|           |                   |                    | Tin             | Sn     | 7440-31-5  | 0.248       | 9.59                  |
|           |                   | 0.045              | Copper          | Cu     | 7440-50-8  | 0.045       | 1.74                  |
| Cover     | Metal Case        | 30.700             | Copper          | Cu     | 7440-50-8  | 23.018      | 74.98                 |
|           |                   |                    | Nickel          | Ni     | 7440-02-0  | 3.713       | 12.10                 |
|           |                   |                    | Zinc            | Zn     | 7440-66-6  | 3.938       | 12.83                 |
|           |                   |                    | Manganese       | Mn     | 7439-96-5  | 0.028       | 0.09                  |
|           |                   |                    | Iron            | Fe     | 7439-89-6  | 0.002       | 0.01                  |
|           | Surface Coating   | 4.999              | Nickel          | Ni     | 7440-02-0  | 4.999       | 100                   |

**MATERIAL DATA DECLARATION SHEET – For Reference Only**

| COMPONENT          | MATERIAL NAME                 | MATERIAL MASS (MG) | SUBSTANCES                  |                  |             |             | MATERIAL ANALYSIS (%) |
|--------------------|-------------------------------|--------------------|-----------------------------|------------------|-------------|-------------|-----------------------|
|                    |                               |                    | NAME                        | SYMBOL           | CAS#        | WEIGHT (MG) |                       |
| Quartz (Blank)     | Quartz Blank                  | 2.361              | Silica                      | SiO2             | 14808-60-7  | 2.361       | 100                   |
| Blank Metalization | Blank Metalization            | 0.038              | Chromium                    | Cr               | 7440-47-3   | 0.002       | 5.26                  |
|                    |                               |                    | Tin                         | Sn               | 7440-31-5   | 0.006       | 15.79                 |
|                    |                               |                    | Silver                      | Ag               | 7440-22-4   | 0.03        | 78.95                 |
| Solder             | Solder (For Blank Attachment) | 2.860              | plumbum                     | Pb               | 7439-92-1   | 2.57        | 89.86                 |
|                    |                               |                    | Silver                      | Ag               | 7440-22-4   | 0.06        | 2.10                  |
|                    |                               |                    | Tin                         | Sn               | 7440-31-5   | 0.23        | 8.04                  |
| Plastic Mold       | Epoxy compound                | 70.158             | Quartz                      | Sio2             | 14808-60-7  | 42.095      | 60.00                 |
|                    |                               |                    | Filler                      | silicon dioxide  | 7631-86-9   | 22.801      | 32.50                 |
|                    |                               |                    | Phenol-formaldehy depolymer |                  | 9003-35-4   | 3.508       | 5.00                  |
|                    |                               |                    | Boron zinc hydroxide oxide  | b12Zn4 (OH)14O15 | 138265-88-0 | 1.403       | 2.00                  |
|                    |                               |                    | Pigment                     | Carbon black     | 1333-86-4   | 0.351       | 0.50                  |
| Lead Frame         | Metal Frame                   | 12.730             | Copper                      | Cu               | 7440-50-8   | 8.402       | 66.00                 |
|                    |                               |                    | Zinc                        | Zn               | 7440-66-6   | 4.328       | 34.00                 |
|                    | Surface coating               | 1.001              | Tin                         | Sn               | 7440-31-5   | 0.858       | 85.71                 |
|                    |                               |                    | Copper                      | Cu               | 7440-50-8   | 0.143       | 14.29                 |

### SUGGESTED REFLOW PROFILE (For Reference Only)



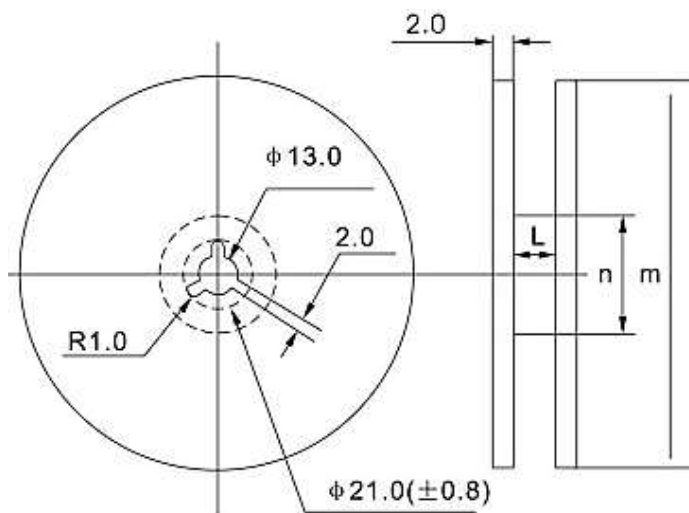
| PROFILE FEATURE                                 |                           | HIGH-PB ASSEMBLY  |
|-------------------------------------------------|---------------------------|-------------------|
| Average Ramp-up Rate (Ts Max to Tp)             |                           | 3°C/second Max    |
| Preheat                                         | Temperature Min (Ts Min.) | 120°C             |
|                                                 | Temperature Max (Ts Max.) | 190°C             |
|                                                 | Time (ts Min. to ts Max.) | 70 ~ 120 seconds  |
| Time maintained above                           | Temperature (Tl)          | 230°C             |
|                                                 | Time (tl)                 | 20 ~ 50 seconds   |
| Peak/Classification Temperature (Tp)            |                           | 260 °C            |
| Time within 5°C of actual Peak Temperature (tp) |                           | 10 seconds Max.   |
| Ramp-down rate                                  |                           | 6 °C /Second Max. |
| Time 25 °C to Peak Temperature                  |                           | 8 minutes Max.    |
| Suggest reflow times                            |                           | 3 Times Max.      |

**TAPE AND REEL** (Unit: mm)

All Devices are packed in accordance with EIA standard RS-481-2 and specifications, 3000pcs/Reel



| SYMBOL | DIMENSION |
|--------|-----------|
| a      | 16.0      |
| b      | 7.5       |
| c      | 8.0       |



| SYMBOL            | DIMENSION |
|-------------------|-----------|
| φm                | 330±3     |
| φn                | 80 Min.   |
| L                 | 17.5      |
| Carrier Tape Size | 16        |

## 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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8. *NextGen* requires that customers first obtain an RMA (Returned Merchandise Authorization) number prior to returning any products. Returns must be made within 30 days of the date of invoice, be in the original packaging, unused and like-new condition. At the time of quoting or purchasing, a product may say that it is Non-Cancelable/ Non-Returnable (NCNR). These products are not returnable and not refundable.