

|                      |                              |                                      |                                    |
|----------------------|------------------------------|--------------------------------------|------------------------------------|
| TCXO<br>2TG2600001-Q | <b>Product Specification</b> | Produced date / Rev.<br>Revised date | 2020.10.30 / S2<br>2022.03.07 / S3 |
|----------------------|------------------------------|--------------------------------------|------------------------------------|

# Product Specification

## TCXO

|                   |                                                                                           |
|-------------------|-------------------------------------------------------------------------------------------|
| Customer          | -                                                                                         |
| Model             | 2TG2600001-Q                                                                              |
| Size              | 2520                                                                                      |
| Frequency         | 26.000000MHz                                                                              |
| Type              | TCXO                                                                                      |
| Vcc               | +1.7V ~ +3.3V                                                                             |
| Vcont             | N/A                                                                                       |
| AFC Range         | N/A                                                                                       |
| Temp.             | ±0.5ppm max.@-30 ~ +85°C, ±3.0ppm max.@-40 ~ -30°C,                                       |
| Slope             | ±0.05ppm/°C max.@-20 ~ +65°C<br>±0.1ppm/°C max.@-30 ~ +85°C, ±0.35ppm/°C max.@-40 ~ -30°C |
| Initial Frequency | ±2.0ppm max. (After 2times reflow)                                                        |

|               |            |
|---------------|------------|
| Issued Date   | 2020.05.20 |
| Revised Date  | 2022.03.07 |
| Prepared part | R&D        |
| Drawn         | Han Shuang |
| Checked       | Kuro Peng  |
| Approved      | Jay        |

|                      |                              |                                      |                                    |
|----------------------|------------------------------|--------------------------------------|------------------------------------|
| TCXO<br>2TG2600001-Q | <b>Product Specification</b> | Produced date / Rev.<br>Revised date | 2020.10.30 / S2<br>2022.03.07 / S3 |
|----------------------|------------------------------|--------------------------------------|------------------------------------|

## 1. Electrical Characteristics

| Parameter                   |                              | Value                     | Conditions                       |
|-----------------------------|------------------------------|---------------------------|----------------------------------|
| Frequency                   |                              | 26.000000MHz              |                                  |
| Supply Voltage(Vcc)         |                              | +1.8±5% ,+2.8V±5%,+3.0±5% |                                  |
| Output Load                 |                              | 10kohm//10pF±10%          |                                  |
| Control Voltage(Vcont)      |                              | N/A                       |                                  |
| Output Level                |                              | 0.8Vp-p min.              | Clipped sine wave (DC-coupled)   |
| Current                     |                              | 1.5mA max.                | 10koms//10pF±10%                 |
| Duty Cycle                  |                              | 50±5%                     |                                  |
| Operating Temperature Range |                              | -40~+85℃                  |                                  |
| Storage Temperature Range   |                              | -40~+85℃                  |                                  |
| Initial Frequency Tolerance |                              | ±2.0ppm max.              | After 2times reflow              |
| Frequency Stability         | vs. Temperature (-30 ~ +85℃) | ±0.5ppm max.              | Referenced to +25℃ frequency     |
|                             | vs. Temperature (-40 ~ -30℃) | ±3.0ppm max.              |                                  |
|                             | vs. Supply Voltage           | ±0.2ppm max.              | Vcc±5%                           |
|                             | vs. Load                     | ±0.2ppm max.              | 10koms//10pF±10% each            |
|                             | vs. Aging                    | ±1.0ppm max.              | 1 <sup>st</sup> Year             |
| Frequency Slope             | vs. Temperature (-20 ~ +65℃) | ±0.05ppm/℃ max.           | Every +2℃                        |
|                             | vs. Temperature (-30 ~ +85℃) | ±0.1ppm/℃ max.            |                                  |
|                             | vs. Temperature (-40 ~ -30℃) | ±0.35ppm/℃ max.           |                                  |
| Start-up Time               |                              | 2ms max.                  | More than 90% of final amplitude |
| ESD                         |                              | HBM>2000V                 | JESD22-A114-B                    |
| MSL                         |                              | 1 级                       | IPC/JEDEC J-STD-033C             |
| Phase Noise                 |                              | -130dBc/Hz max.           | 1KHz offset                      |

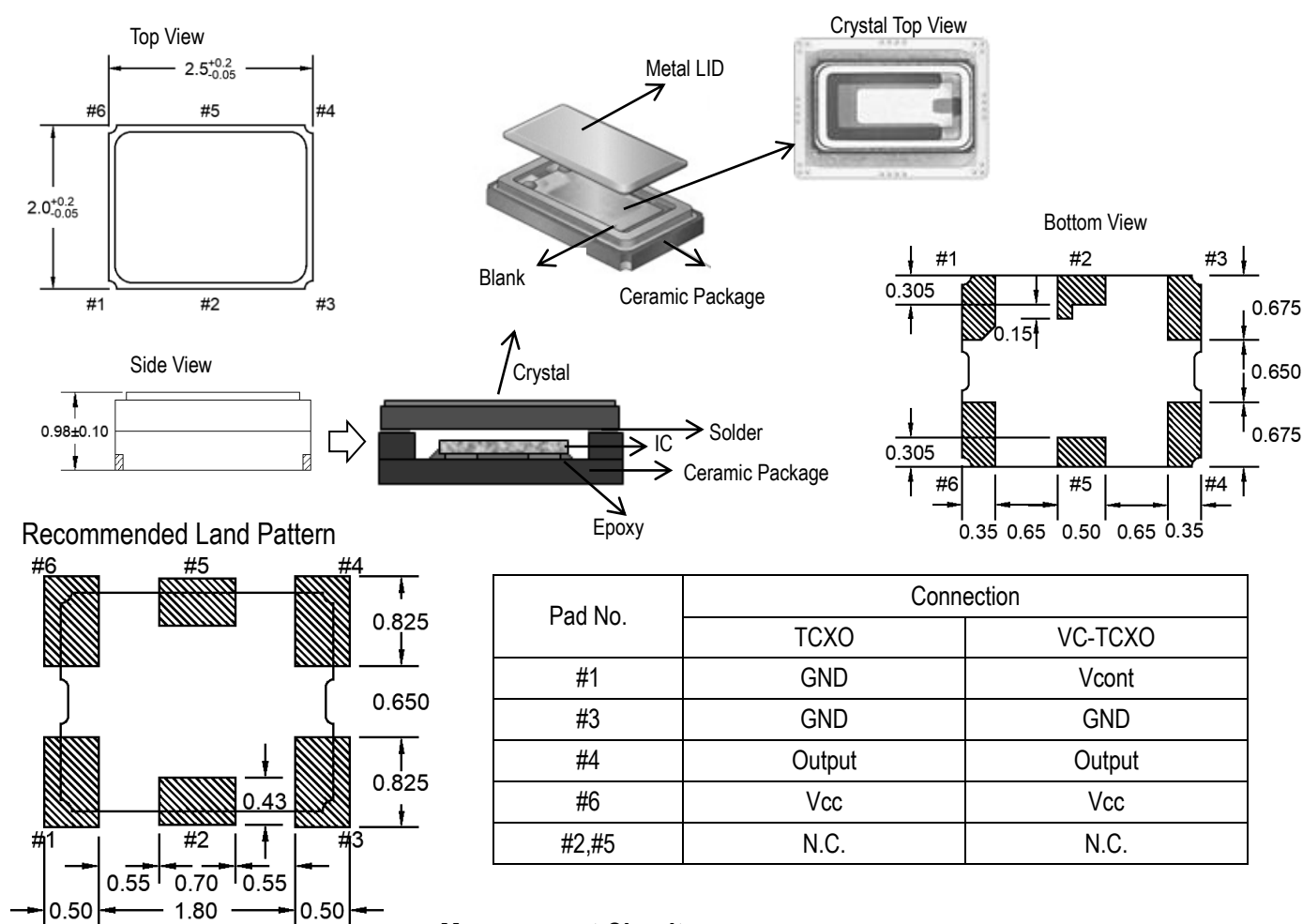
Notes:

- Please leave after reflow in 2h or more at room ambient

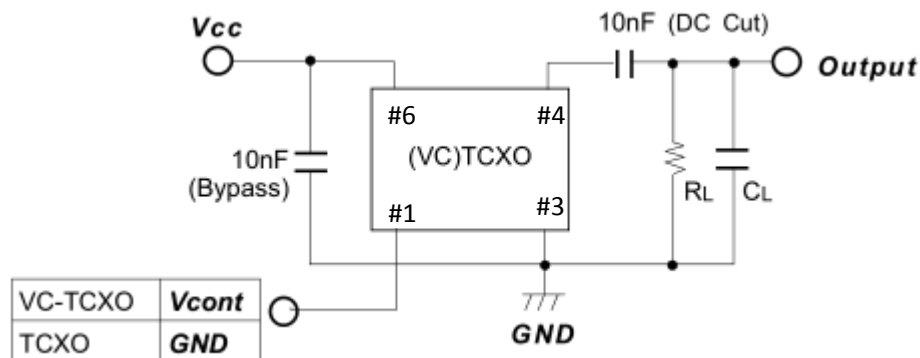
|                             |                              |                                      |                                    |
|-----------------------------|------------------------------|--------------------------------------|------------------------------------|
| <b>TCXO</b><br>2TG2600001-Q | <b>Product Specification</b> | Produced date / Rev.<br>Revised date | 2020.10.30 / S2<br>2022.03.07 / S3 |
|-----------------------------|------------------------------|--------------------------------------|------------------------------------|

## 2. Outline Specification

Unit: mm



### Measurement Circuit

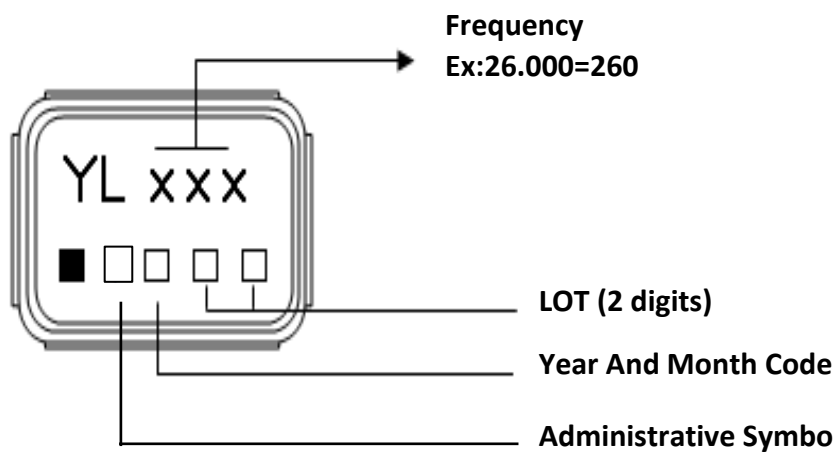


### Notes:

- Please connect a bypass capacitor closely to Vcc Pad.
- Load capacitance (CL) includes probe and test board capacitance.

|                      |                              |                                      |                                    |
|----------------------|------------------------------|--------------------------------------|------------------------------------|
| TCXO<br>2TG2600001-Q | <b>Product Specification</b> | Produced date / Rev.<br>Revised date | 2020.10.30 / S2<br>2022.03.07 / S3 |
|----------------------|------------------------------|--------------------------------------|------------------------------------|

### 3. Marking Specification

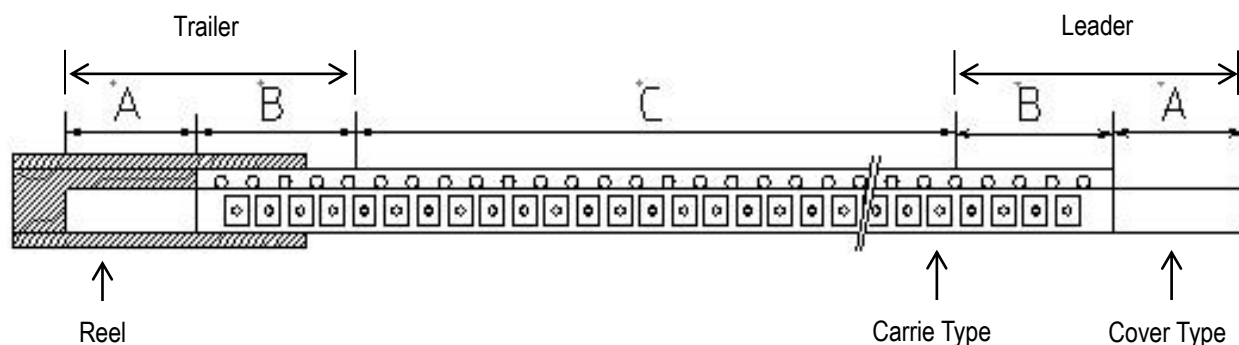


| month<br>year |      | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|               |      | A   | B   | C   | D   | E   | F   | G   | H   | J   | K   | L   | M   |
| 2017          | 2021 | N   | P   | Q   | R   | S   | T   | U   | V   | W   | X   | Y   | Z   |
| 2018          | 2022 | a   | b   | c   | d   | e   | f   | g   | h   | j   | k   | l   | m   |
| 2019          | 2023 | n   | p   | q   | r   | s   | t   | u   | v   | w   | x   | y   | z   |
| 2020          | 2024 |     |     |     |     |     |     |     |     |     |     |     |     |

|                      |                              |                                      |                                    |
|----------------------|------------------------------|--------------------------------------|------------------------------------|
| TCXO<br>2TG2600001-Q | <b>Product Specification</b> | Produced date / Rev.<br>Revised date | 2020.10.30 / S2<br>2022.03.07 / S3 |
|----------------------|------------------------------|--------------------------------------|------------------------------------|

## 4. Packing Specifications

### Basic Taping Specification

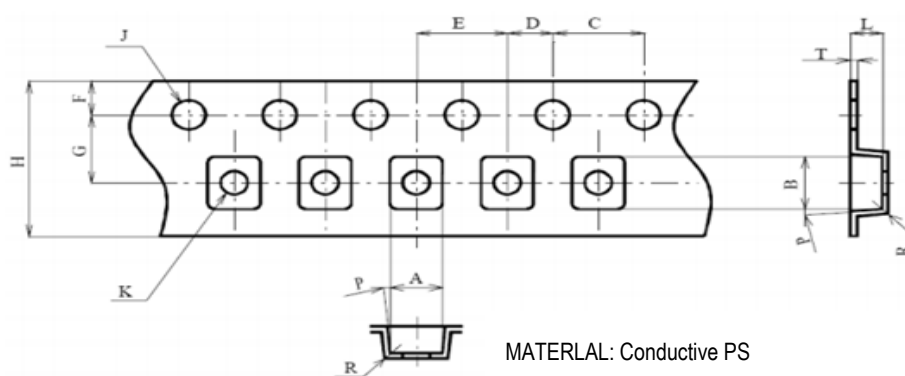


|   |                    |            |
|---|--------------------|------------|
| A | Cover tape only    | 200mm min. |
| B | Empty carrier tape | 300mm min. |
| C | Component Section  |            |

Notes:

- Insert TCXO product in carrier tape
- Attach cover tape using heat pressing method

### Carrier Tape ( 8mm)



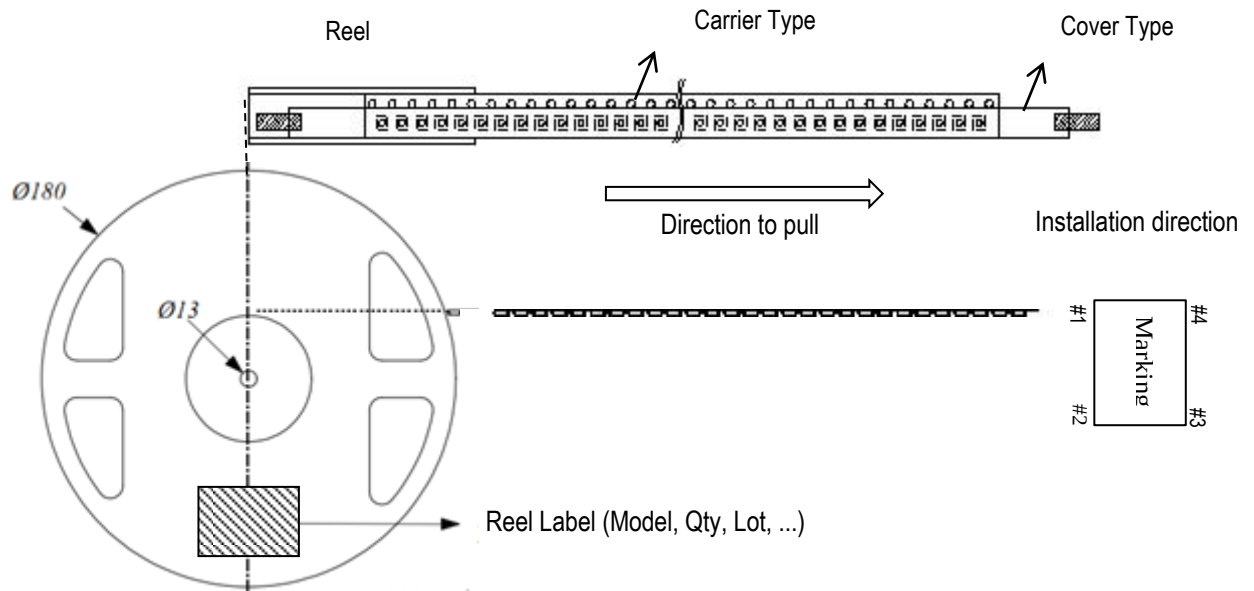
MATERIAL: Conductive PS

Unit: mm

|           |         |              |           |          |         |          |           |
|-----------|---------|--------------|-----------|----------|---------|----------|-----------|
| Symbol    | A       | B            | C         | D        | E       | F        | G         |
| Dimension | 2.3±0.1 | 2.7±0.1      | 4.0±0.1   | 2.0±0.05 | 4.0±0.1 | 1.75±0.1 | 3.5±0.05  |
| Symbol    | H       | J            | K         | L        | P       | T        | R         |
| Dimension | 8.0±0.2 | Φ 1.5+0.1/-0 | Φ 1.2±0.1 | 1.4±0.1  | 5° max. | 0.3±0.05 | R0.3 max. |

|                             |                              |                                      |                                    |
|-----------------------------|------------------------------|--------------------------------------|------------------------------------|
| <b>TCXO</b><br>2TG2600001-Q | <b>Product Specification</b> | Produced date / Rev.<br>Revised date | 2020.10.30 / S2<br>2022.03.07 / S3 |
|-----------------------------|------------------------------|--------------------------------------|------------------------------------|

### Reel Taping



### Inner Bag / Inner Box / Outer Box



Inner Bag (1Reel)



HDPE (15 reels enter)



Outer Box (60Reel max.)

|           |           |
|-----------|-----------|
| pocketful | Outer Box |
| 45Kpcs    | 180Kpcs   |

Box Label



|                      |                              |                                      |                                    |
|----------------------|------------------------------|--------------------------------------|------------------------------------|
| TCXO<br>2TG2600001-Q | <b>Product Specification</b> | Produced date / Rev.<br>Revised date | 2020.10.30 / S2<br>2022.03.07 / S3 |
|----------------------|------------------------------|--------------------------------------|------------------------------------|

## 5. Reliability Specifications

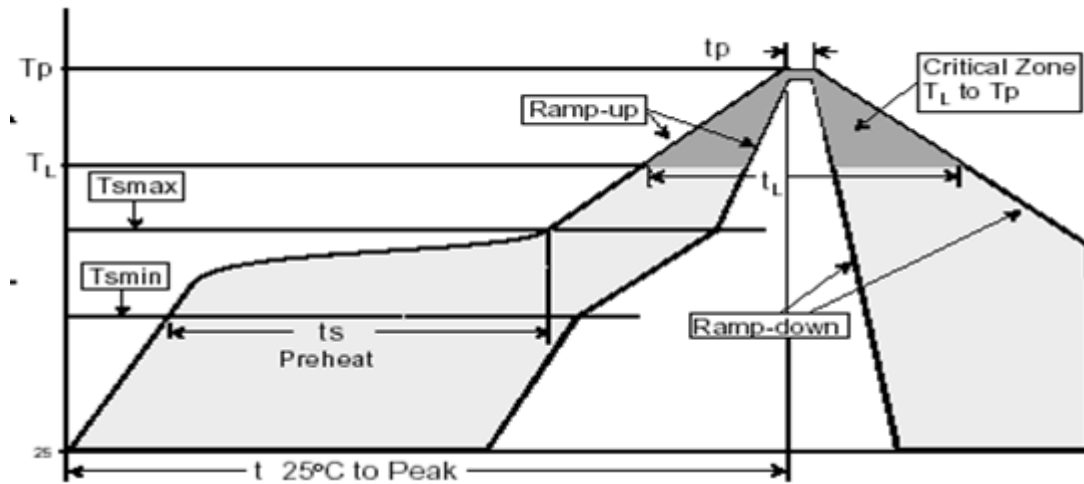
|    | Test Item                                        | Test Condition                                                                                                                                                                                                                                                                                                                                          | Criteria |
|----|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 1  | Preconditioning                                  | 125°C 24Hr → 85°C,85%RH 168Hr → 3times reflow<br>It shall be measured after 4Hr to 12Hr at room temperature & humidity                                                                                                                                                                                                                                  | ±1.0ppm  |
| 2  | Drop                                             | Preparation: Test pieces should be fixed on the dummy load with 120~150g weights<br>Condition: Height 150cm onto Iron-plate<br>Drop times: 3 times in 6 mutually perpendicular axes, 1 time random drop total 19 times<br>Condition: Height 120cm onto Iron-plate<br>Drop times: 2 times in 6 mutually perpendicular axes<br>Total drop times: 31 times | ±1.0ppm  |
| 3  | High Temp. & Humidity Storage                    | 85°C,85%RH 240Hr<br>It shall be measured after 4Hr to 12Hr at room temperature & humidity                                                                                                                                                                                                                                                               | ±1.0ppm  |
| 4  | Thermal shock                                    | -40°C/30min ↔ 85°C/30min, 100cycles<br>It shall be measured after 4Hr to 12Hr at room temperature & humidity                                                                                                                                                                                                                                            | ±1.0ppm  |
| 5  | Vibration                                        | 20~2000Hz, PSD 0.053g <sup>2</sup> /Hz, X.Y.Z direction, 15min/direction                                                                                                                                                                                                                                                                                | ±1.0ppm  |
| 6  | High Temp. Storage                               | 125°C, 240Hr                                                                                                                                                                                                                                                                                                                                            | ±1.0ppm  |
| 7  | Low Temp. Storage                                | -55°C, 240Hr                                                                                                                                                                                                                                                                                                                                            | ±1.0ppm  |
| 8  | Solderability                                    | Precondition: 105°C, 100%RH, 4Hr<br>Condition: 235±5°C for 3±0.5sec, Solder Pot                                                                                                                                                                                                                                                                         | 90%      |
| 9  | Solder Heat Resistance                           | 260±5°C, 10±1sec, Solder Pot<br>It shall be measured after 2Hr to 4Hr at room temperature & humidity                                                                                                                                                                                                                                                    | ±1.0ppm  |
| 10 | ESD(Electrostatic Discharge)<br>Human Body Model | C = 100pF, V = ±1KV, R = 1.5kohm, 3times                                                                                                                                                                                                                                                                                                                | ±1.0ppm  |

\*Storage conditions : 18 months

\*Constant humidity : 40~70%

|                             |                              |                                      |                                    |
|-----------------------------|------------------------------|--------------------------------------|------------------------------------|
| <b>TCXO</b><br>2TG2600001-Q | <b>Product Specification</b> | Produced date / Rev.<br>Revised date | 2020.10.30 / S2<br>2022.03.07 / S3 |
|-----------------------------|------------------------------|--------------------------------------|------------------------------------|

## 6. Recommended Reflow Profile



|   |                                                                                                        |                             |
|---|--------------------------------------------------------------------------------------------------------|-----------------------------|
| 1 | Preheat<br>-Temp. Min (T <sub>min</sub> )<br>-Temp. Max (T <sub>max</sub> )<br>-Time (t <sub>s</sub> ) | 150°C<br>200°C<br>60~180sec |
| 2 | Primary Heat<br>-Temp. (T <sub>L</sub> )<br>-Time (t <sub>L</sub> )                                    | 220°C<br>60~150sec          |
| 3 | Peak<br>-Temp. (T <sub>P</sub> )<br>-Time (t <sub>P</sub> )                                            | 260°C<br>10sec max.         |