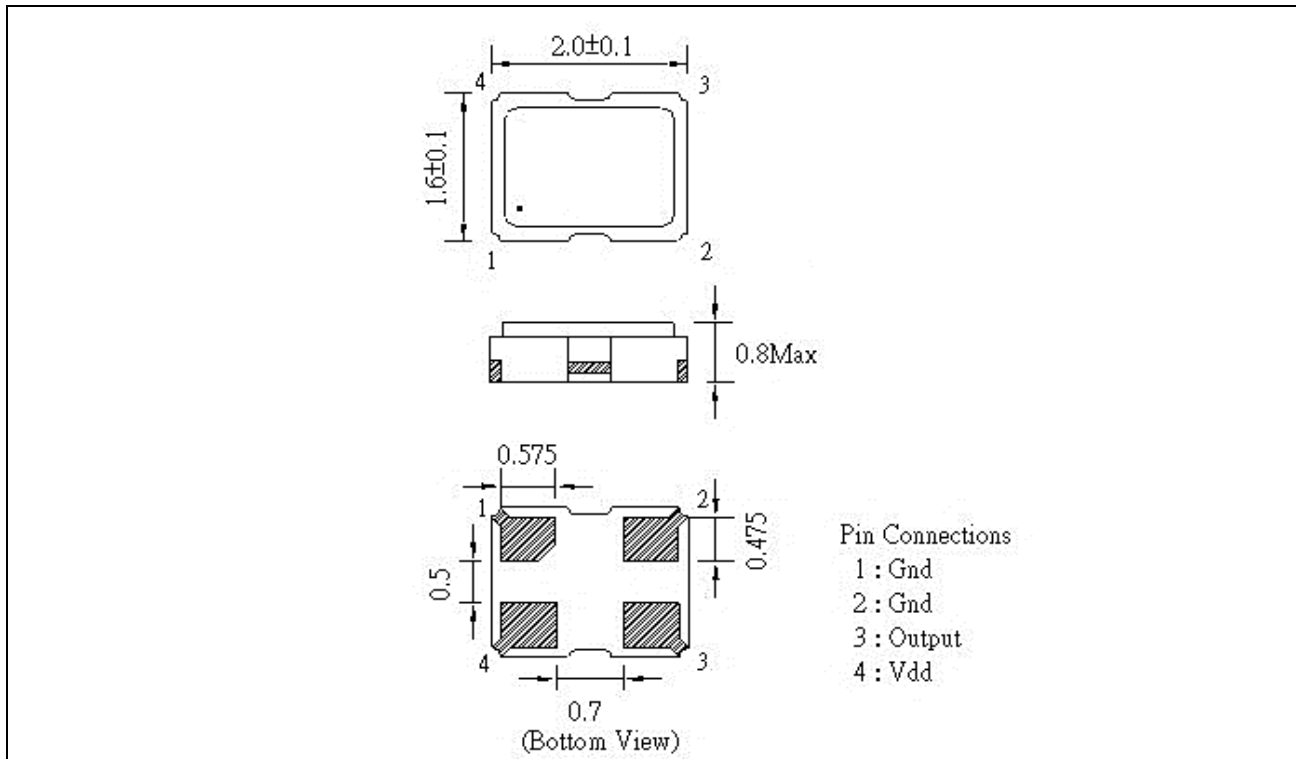


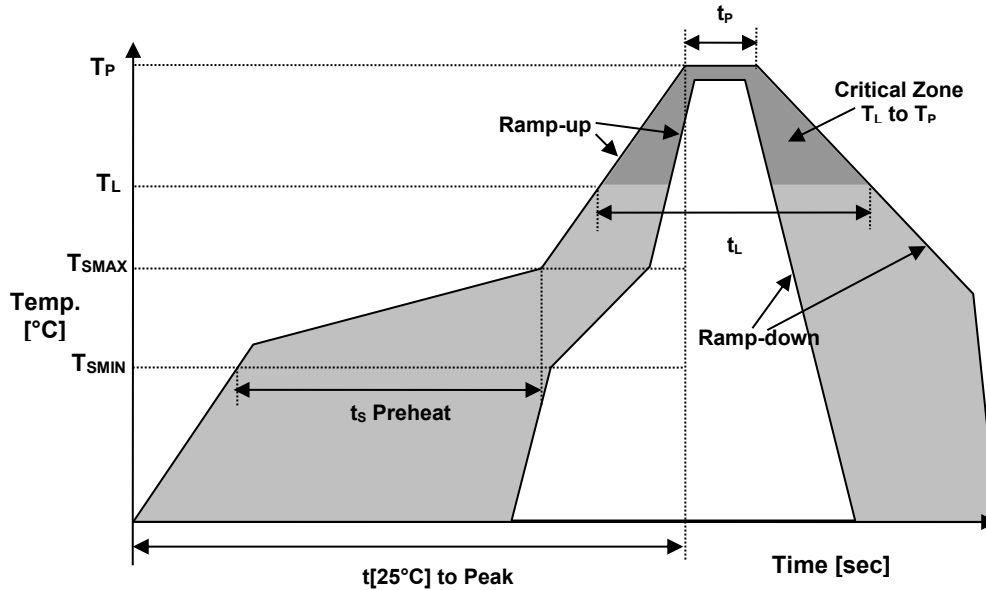
#### ELECTRICAL SPECIFICATION

| PARAMETER                           | SYMBOL                      | CONDITIONS                          | VALUE     | UNIT             |
|-------------------------------------|-----------------------------|-------------------------------------|-----------|------------------|
| Nominal Frequency                   | $f_0$                       | $V_{CC} \pm 5\%$                    | 20.000    | MHz              |
| Supply Voltage, nom.                | $V_{CC}$                    | $V_{CC} \pm 5\%$                    | 1.8 ~ 3.3 | VDC              |
| Supply Current, max                 | $I_S$                       | $V_{CC} \pm 5\%$                    | 2.0       | mA               |
| Operating Temperature Range         | $T_a$                       |                                     | -30 ~ +85 | °C               |
| Storage Temperature Range           | $T(stg)$                    | Absolute max                        | -40 ~ +85 | °C               |
| Frequency Stability vs. Temperature | $\Delta f/f_0(T_a)$         | Reference to +25°±2°C (-30 ~ +85°C) | ±0.5      | ppm              |
| Frequency Stability                 |                             |                                     |           |                  |
| vs. Supply Voltage                  | $\Delta f/f_V$              | $V_{CC} \pm 5\%$                    | ±0.2      | ppm              |
| vs. Load                            | $\Delta f/f_L$              | Load ±10%                           | ±0.2      | ppm              |
| vs. Aging max                       | $\Delta f/f_0(\text{year})$ | Per Year at +25°C ± 2°C             | ±1.0      | ppm              |
| Initial Frequency Calibration, max  |                             | Measured at 25°C, after 2 reflows   | ±2.0      | ppm              |
| Output Level, Clipped Sine Wave     |                             | 10kΩ // 10 pF ±10%                  | 0.8       | V <sub>P-P</sub> |

#### MECHANICAL SPECIFICATION



#### REFLOW PROFILE



| Reflow profile                                 |                             |              |
|--|-----------------------------|--------------|
| Temperature Min Preheat                        | T <sub>SMIN</sub>           | 150°C        |
| Temperature Max Preheat                        | T <sub>SMAX</sub>           | 200°C        |
| Time (T <sub>SMIN</sub> to T <sub>SMAX</sub> ) | t <sub>s</sub>              | 60-120 sec.  |
| Temperature                                    | T <sub>L</sub>              | 217°C        |
| Peak Temperature                               | T <sub>P</sub>              | 260°C        |
| Ramp-up rate                                   | R <sub>UP</sub>             | 3°C/sec max. |
| Ramp-down rate                                 | R <sub>DOWN</sub>           | 6°C/sec max. |
| Time within 5°C of Peak Temperature            | t <sub>p</sub>              | 30 sec.      |
| Time t <sub>[25°C] to Peak Temperature</sub>   | t <sub>[25°C] to Peak</sub> | 480 sec.     |
| Time   | t <sub>L</sub>              | 60-150 sec.  |

#### ENVIRONMENTAL

| PARAMETER                  | VALUE     |
|----------------------------|-----------|
| MOISTURE SENSITIVITY LEVEL | 1         |
| REACH                      | Compliant |
| RoHS                       | Compliant |
| TERMINATION FINISH         | Au        |





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TCXO

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MARKING

Rx20.00

•AFFyw

x – Internal Production ID code

y – Year code

w – Week code

| YEAR CODE |      |
|-----------|------|
| Year      | Code |
| 2015      | 5    |
| 2016      | 6    |
| 2017      | 7    |
| 2018      | 8    |
| 2019      | 9    |
| 2020      | 0    |
| 2021      | 1    |
| 2022      | 2    |
| 2023      | 3    |

| ALPHA WEEK CODE TABLE |      |      |      |      |      |
|-----------------------|------|------|------|------|------|
| Week                  | Code | Week | Code | Week | Code |
| 1                     | a    | 19   | s    | 37   | K    |
| 2                     | b    | 20   | t    | 38   | L    |
| 3                     | c    | 21   | u    | 39   | M    |
| 4                     | d    | 22   | v    | 40   | N    |
| 5                     | e    | 23   | w    | 41   | O    |
| 6                     | f    | 24   | x    | 42   | P    |
| 7                     | g    | 25   | y    | 43   | Q    |
| 8                     | h    | 26   | z    | 44   | R    |
| 9                     | i    | 27   | A    | 45   | S    |
| 10                    | j    | 28   | B    | 46   | T    |
| 11                    | k    | 29   | C    | 47   | U    |
| 12                    | l    | 30   | D    | 48   | V    |
| 13                    | m    | 31   | E    | 49   | W    |
| 14                    | n    | 32   | F    | 50   | X    |
| 15                    | o    | 33   | G    | 51   | Y    |
| 16                    | p    | 34   | H    | 52   | Z    |
| 17                    | q    | 35   | I    |      |      |
| 18                    | r    | 36   | J    |      |      |

APPROVALS

| RALTRON                                   |
|---|
| Created by, date: AR, January 28, 2019    |
| Eng. approval, date: CP, January 28, 2019 |
| Revision: A                               |

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