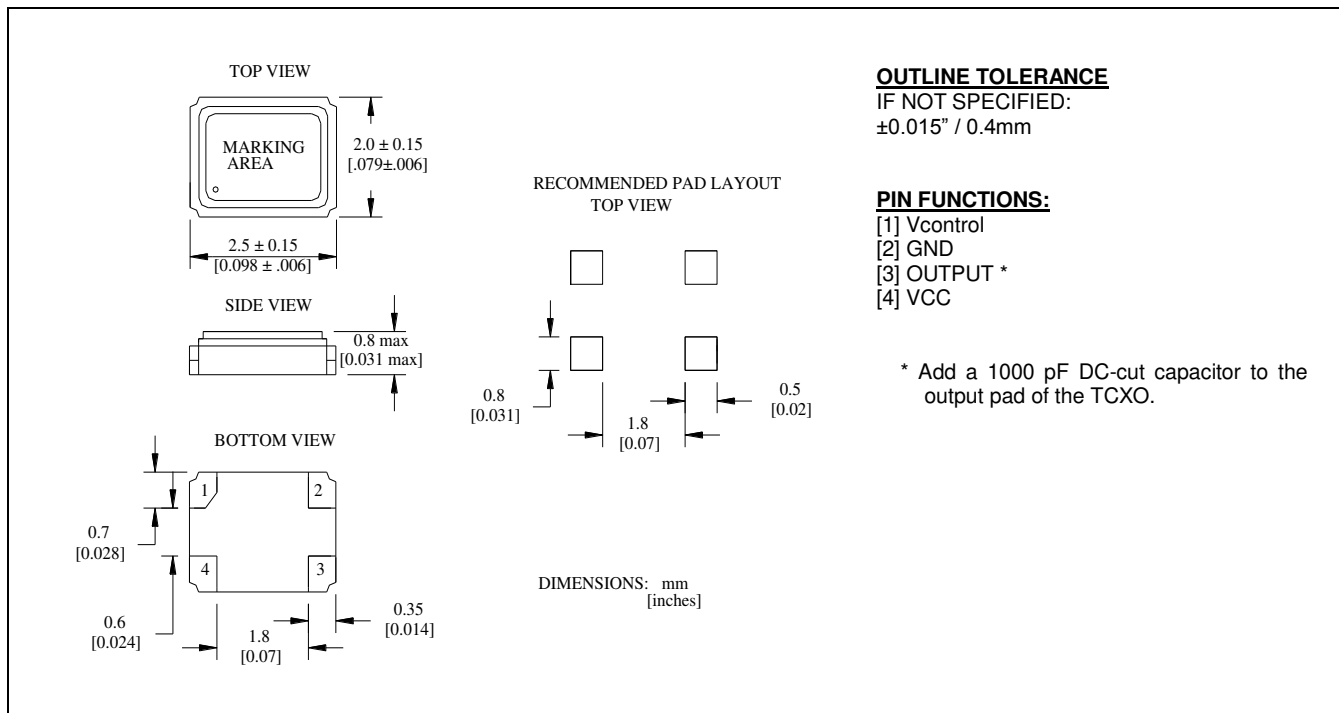


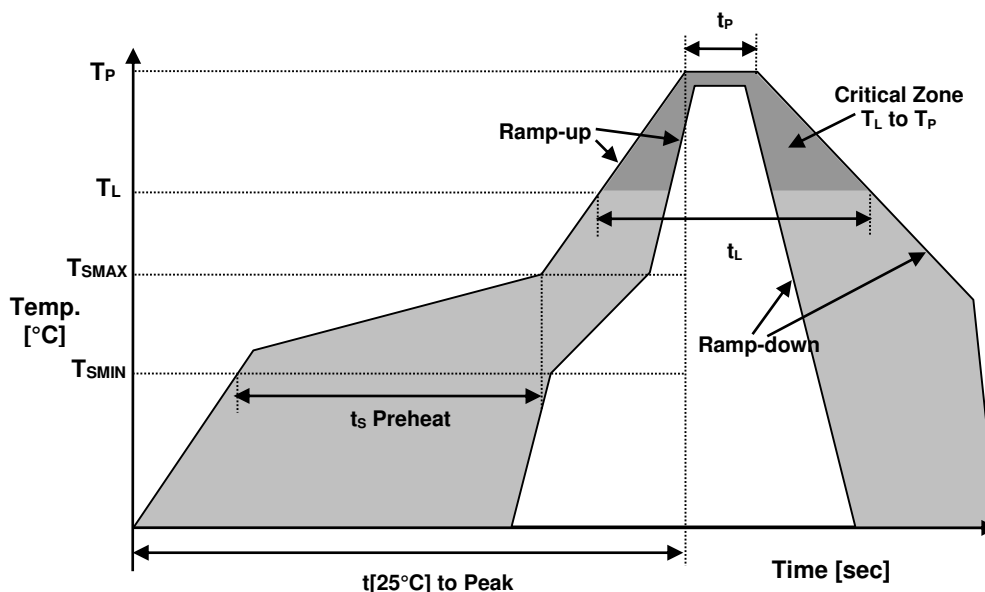
#### ELECTRICAL SPECIFICATION

| PARAMETER                          | SYMBOL                      | CONDITIONS                            | VALUE     | UNIT             |
|------------------------------------|-----------------------------|---------------------------------------|-----------|------------------|
| Nominal Frequency                  | $f_o$                       | $V_{CC} \pm 5\%$                      | 19.200    | MHz              |
| Supply voltage, nom.               | $V_{CC}$                    | $V_{CC} \pm 5\%$                      | 3.3       | VDC              |
| Supply current, max                | $I_s$                       | $V_{CC} \pm 5\%$                      | 1.5       | mA               |
| Operating temperature              | $T_a$                       |                                       | -40 ~ +85 | °C               |
| Storage temperature                | $T(stg)$                    | Absolute max                          | -40 ~ +85 | °C               |
| Frequency Stability                |                             |                                       |           |                  |
| vs. Temperature, Max               | $\Delta f/f_o(T_a)$         | Reference to +25°C ±2°C (-30 TO 85°C) | ±0.5      | ppm              |
| 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                      | $\Delta f/f_o(\text{year})$ | Per Year at +25°C ± 2°C               | ±1.0      | ppm              |
| Initial Frequency Calibration, Max | $f_c$                       | Measured at 25°C, Reference to $f_o$  | ±2.0      | ppm              |
| Output Level, Clipped Sine Wave    | -                           | 10kΩ // 10 pF ±10%                    | 0.8       | V <sub>P-P</sub> |
| Voltage Control Range, Min         | $V_c$                       | $V_c = 1.65 \pm 1.0 V_{dc}$           | ±18       | ppm              |
| Start up time, Max                 | $t_s$                       | $V_{OUT} \geq 90\% V_{P-P}$           | 2.0       | ms               |

#### MECHANICAL SPECIFICATION



#### REFLOW PROFILE



| Reflow profile                                 |                                       |              |
|------------------------------------------------|---------------------------------------|--------------|
| Temperature Min Preheat                        | $T_{SMIN}$                            | 150°C        |
| Temperature Max Preheat                        | $T_{SMAX}$                            | 200°C        |
| Time ( $T_{SMIN}$ to $T_{SMAX}$ )              | $t_s$                                 | 60-180 sec.  |
| Temperature                                    | $T_L$                                 | 217°C        |
| Peak Temperature                               | $T_P$                                 | 260°C        |
| Ramp-up rate                                   | $R_{UP}$                              | 3°C/sec max. |
| Ramp-down rate                                 | $R_{DOWN}$                            | 6°C/sec max. |
| Time within 5°C of Peak Temperature            | $t_p$                                 | 10 sec.      |
| Time $t[25^\circ\text{C}]$ to Peak Temperature | $t[25^\circ\text{C}] \text{ to Peak}$ | 480 sec.     |
| Time                                           | $t_L$                                 | 60-150 sec.  |

#### ENVIRONMENTAL

| PARAMETER                  | VALUE         |
|----------------------------|---------------|
| MOISTURE SENSITIVITY LEVEL | 1             |
| REACH-SVHC                 | COMPLIANT     |
| RoHS2                      | 6/6 LEAD FREE |
| TERMINATION FINISH         | Au            |



#### • MARKING

Rx192

•D3yw

x – Internal Production ID code

y – Year code

w – Week code

| YEAR CODE |      |
|-----------|------|
| Year      | Code |
| 2011      | 1    |
| 2012      | 2    |
| 2013      | 3    |
| 2014      | 4    |
| 2015      | 5    |
| 2016      | 6    |
| 2017      | 7    |
| 2018      | 8    |
| 2019      | 9    |

| 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:    | KJackson, May 31, 2016                      |
| Eng. approval, date: | KJackson, May 31, 2016                      |
| Rev: A               |                                             |
| Rev: B               | Control voltage range updated KJ<br>7/28/16 |