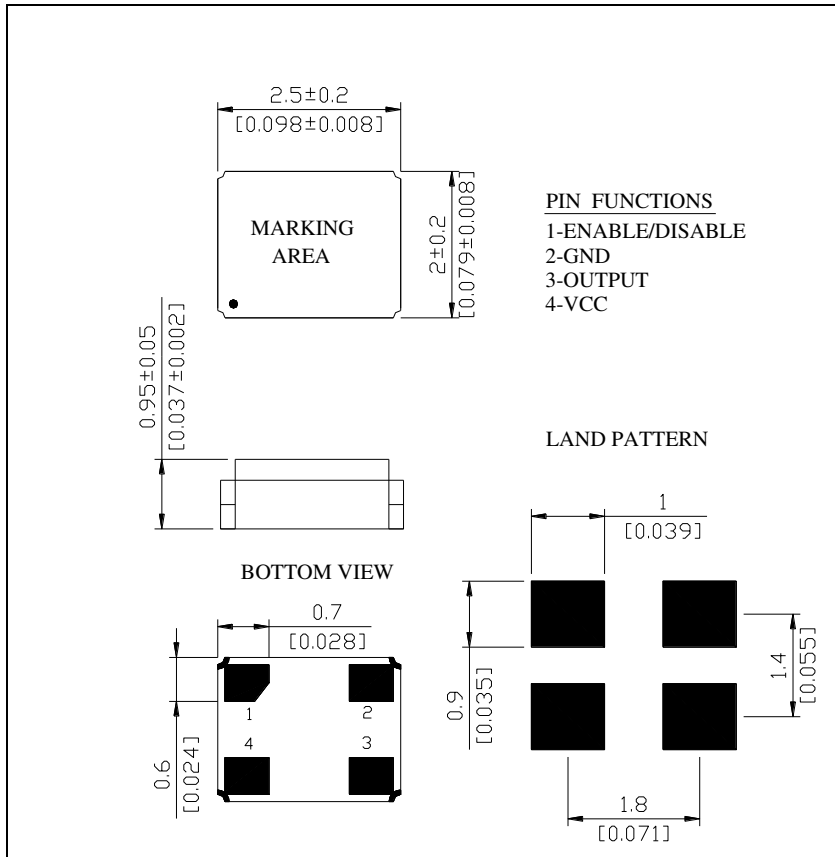


#### ELECTRICAL SPECIFICATION

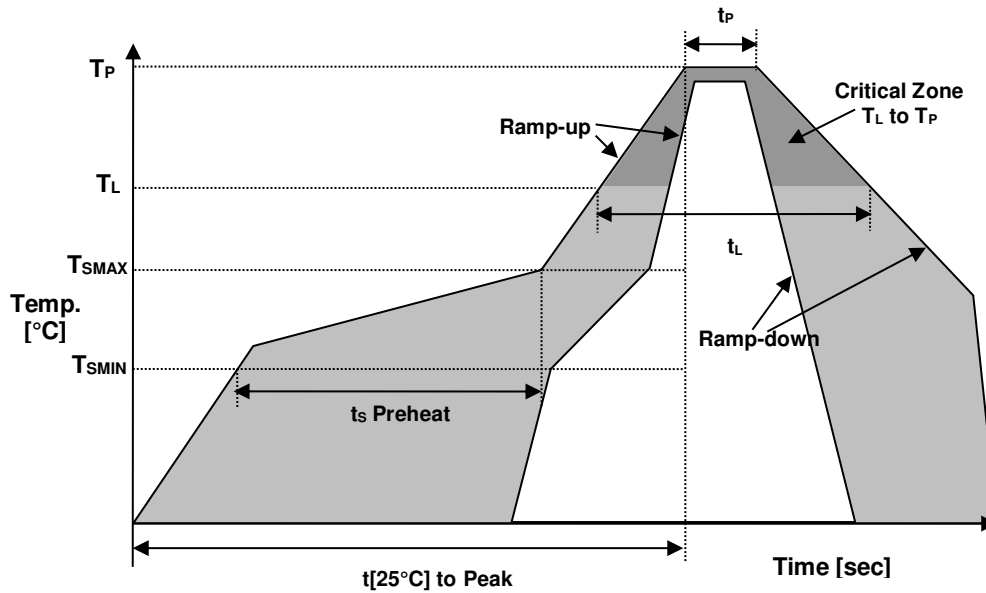
| PARAMETER                    | SYMBOL             | CONDITIONS  | VALUE      | UNIT |
|------------------------------|--------------------|---|------------|------|
| Nominal Frequency            | fo                 | Ta=25°C   | 0.032768   | MHz  |
| Supply Voltage               | V <sub>CC</sub>    | ±5%   | 3.3        | VDC  |
| Supply Current, max          | I <sub>s</sub>     | Ta=25°C   | 200        | µA   |
| Operating Temperature Range  | Ta                 | ---   | -40 ~ +85  | °C   |
| Storage Temperature Range    | T <sub>(stg)</sub> | Absolute max  | -55 ~ +125 | °C   |
| Frequency Stability          | Δf/fo              | Inclusive of 25°C Tolerance and Changes due to Operating Temperature, Supply Voltage, Load, Shock and Vibration | ±50        | ppm  |
| Frequency Tolerance          |                    | Ref to Center Frequency   | ±20        | ppm  |
| Aging                        |                    | First Year, @ 25±5°C  | ±3         | ppm  |
| Output Voltage               | V <sub>OL</sub>    | Logic "0" Level, max  | 0.4        | VDC  |
|                              | V <sub>OH</sub>    | Logic "1" Level, min  | 2.9        | VDC  |
| Output Load                  | ---                | CMOS Output   | 15         | pF   |
| Enable / Disable Function    | E/D                | Pin 1: N.C. (Open) or High, Pin 3 – Oscillation (Enabled)   | 2.64       | V    |
|                              |                    | Pin 1: Low, Pin 3 – High Impedance (Disabled)   | 0.66       | V    |
| Symmetry (Duty Cycle)        | DC                 | @50% V <sub>dd</sub>  | 40 ~ 55    | %    |
| Rise Time and Fall Time, max | tr / tf            | @10% to 90% V <sub>dd</sub>   | 30         | ns   |

#### MECHANICAL SPECIFICATION



NOTE: A capacitor of 0.01  $\mu$ F between Vcc and Ground is recommended

### 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 | $t_{[25^\circ\text{C}]}$ to Peak | 480 sec.     |
| Time  | $t_L$                            | 60-150 sec.  |

### ENVIRONMENTAL

| PARAMETER                  | VALUE     |
|----------------------------|-----------|
| MOISTURE SENSITIVITY LEVEL | 1         |
| RoHS                       | COMPLIANT |
| REACH-SVHC                 | COMPLIANT |
| HALOGEN-FREE               | COMPLIANT |
| TERMINATION FINISH         | Au        |



• MARKING

Rx0.03  
•33Byw

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    |      |      |

• APPROVAL

| RALTRON      |                       |
|--------------|-----------------------|
| DRAWN BY:    | LP, February 16, 2018 |
| APPROVED BY: | JL, February 16, 2018 |
| REVISION:    | A, Initial Release    |

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