■ **ELECTRICAL SPECIFICATION**

| PARAMETER | SYMBOL | CONDITIONS | VALUE | UNIT |
|---|---|---|---|---|
| Nominal Frequency | fo | Vcc ±5% | 38.400 | MHz |
| Supply voltage, nom. | $V_{CC}$ | Vcc ±5%, | 1.8 | VDC |
| Supply current, max | $I_S$ | Vcc ±5% | 2.5 | mA |
| Operating temperature | Ta | | -30 ~ +85 | °C |
| Storage temperature | T(stg) | Absolute max | -40 ~ +85 | °C |
| Frequency Stability | | | | |
| vs. Temperature | $\Delta f/fo(Ta)$ | Reference to +25°Cover Temperature Range | ±0.5 | ppm |
| vs. Supply Voltage | $\Delta f/f_V$ | Vcc ±5% | ±0.1 | ppm |
| vs. Load | $\Delta f/f_L$ | Load ±10% | ±0.2 | ppm |
| vs. Aging Max | $\Delta f/fo(year)$ | Per Year at +25°C ± 2°C | ±1.0 | ppm |
| Initial Frequency Calibration, Max | $f_C$ | Measured at 25°C, Reference to fo | ±2.0 | ppm |
| Output Level, Clipped Sine Wave | - | 10K Ohms // 10 pF ±10% | 0.8 | $V_{P-P}$ |
| Start up time, Max | $t_s$ | $V_{OUT} \geq 90\% V_{P-P}$ | 2.5 | ms |
| Phase noise @ freq. offset, typical. | £ ($\Delta f$) | $\Delta f$=1 Hz | -50 | dBc/Hz |
| | £ ($\Delta f$) | $\Delta f$=10 Hz | -80 | dBc/Hz |
| | £ ($\Delta f$) | $\Delta f$=100 Hz | -108 | dBc/Hz |
| | £ ($\Delta f$) | $\Delta f$=1 KHz | -130 | dBc/Hz |
| | £ ($\Delta f$) | $\Delta f$=10 KHz | -145 | dBc/Hz |

■ **MECHANICAL SPECIFICATION**



TOP VIEW

MARKING AREA

2.0 ± 0.15 [.079±.006]

2.5 ± 0.15 [0.098 ± .006]

SIDE VIEW

0.8 max [0.031 max]

BOTTOM VIEW

0.7 [0.028]

0.6 [0.024]

1.8 [0.07]

0.35 [0.014]

RECOMMENDED PAD LAYOUT TOP VIEW

0.8 [0.031]

1.8 [0.07]

0.5 [0.02]

DIMENSIONS: mm [inches]

**OUTLINE TOLERANCE**
IF NOT SPECIFIED:
±0.015" / 0.4mm

**PIN FUNCTIONS:**
[1] GND
[2] GND
[3] OUTPUT *
[4] VCC

* Add a 1000 pF DC-cut capacitor to the output pad of the TCXO.

**A RAMI TECHNOLOGY Company**
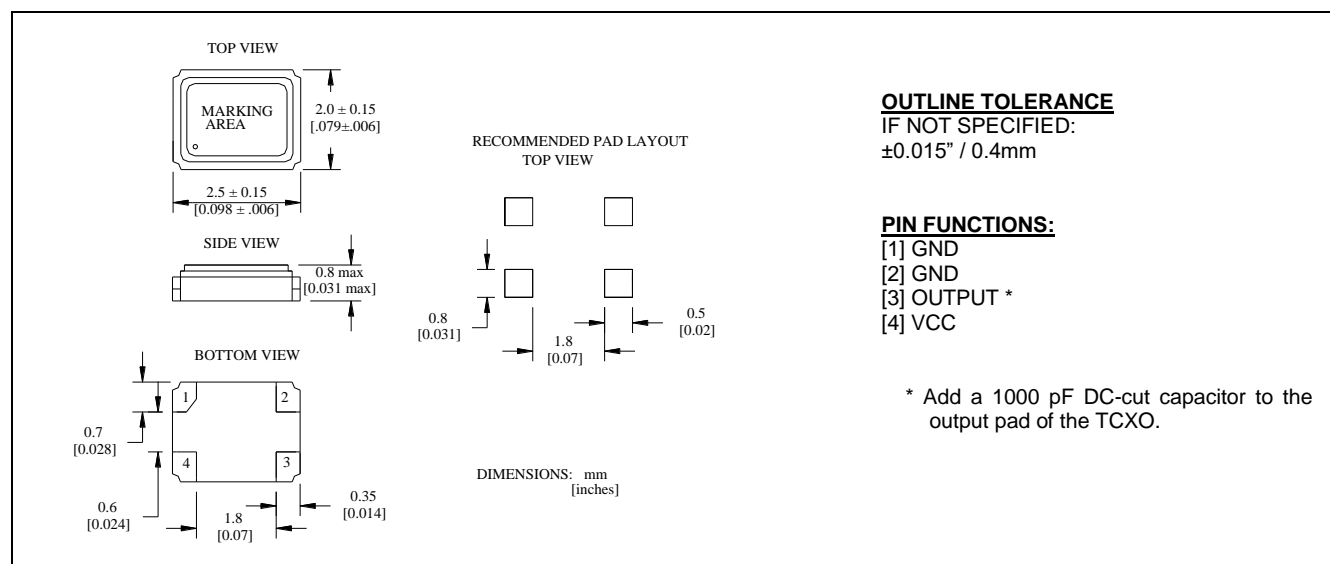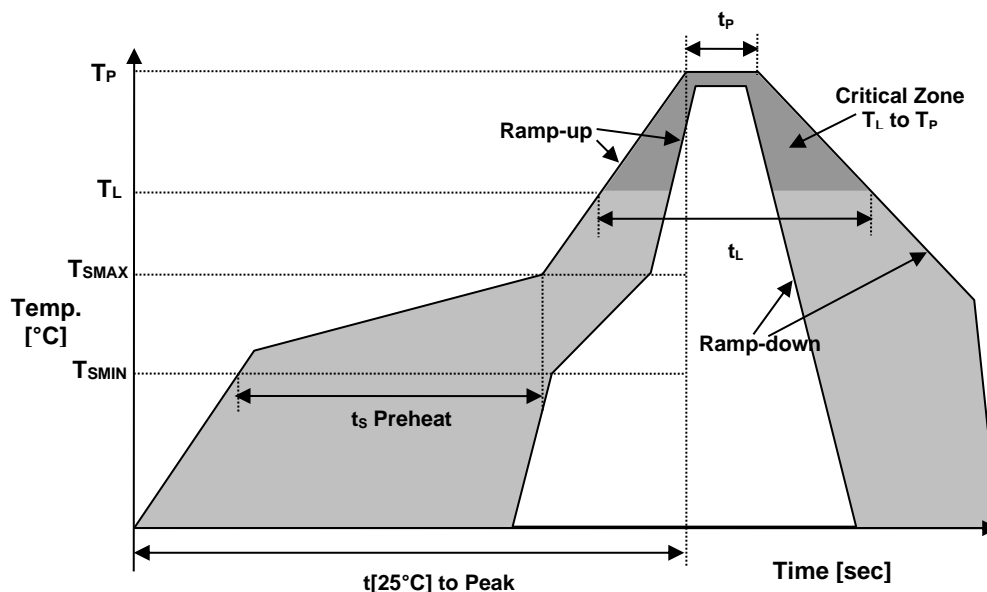
■ **REFLOW PROFILE**



| 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°C] to Peak Temperature | t[25°C] 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**

Rx38.4
•AF3yw

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: | MH | 10/29/2013 |
| Eng. approval, date: | FP | 10/30/2013 |
| Revision: A | | | |