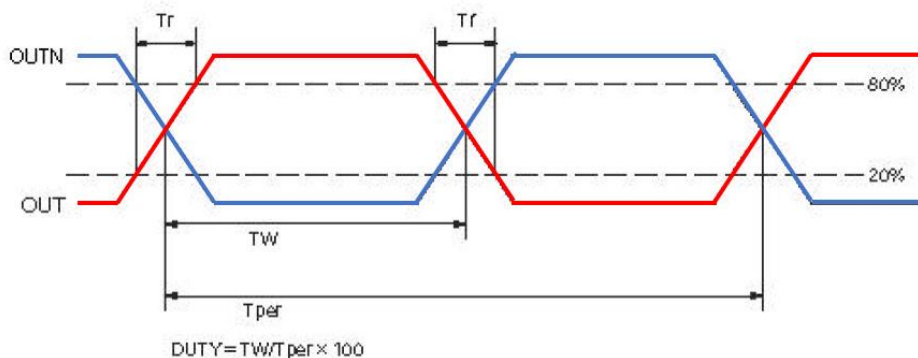


#### ELECTRICAL SPECIFICATION

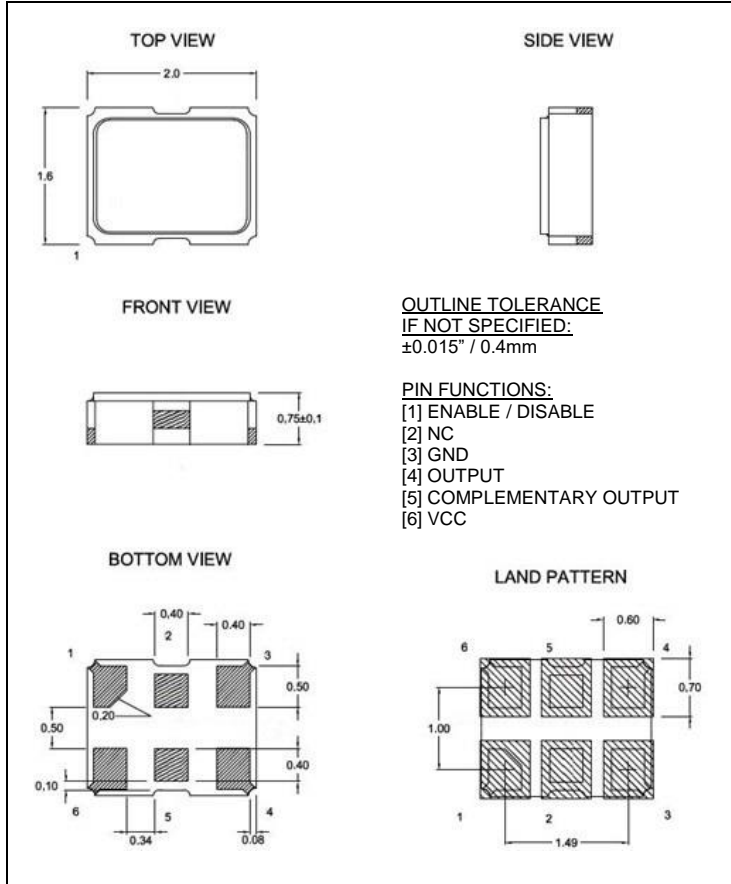
| PARAMETER                    | SYMBOL                  | CONDITIONS   | VALUE               | UNIT               |
|------------------------------|-------------------------|--|---------------------|--------------------|
| Nominal Frequency            | $f_o$                   | $T_a=25^{\circ}\text{C}$   | 156.257812          | MHz                |
| Oscillation Mode             |                         |  | Fundamental         | -                  |
| Supply Voltage               | $V_{CC}$                | $V_{CC} \pm 5\%$   | 2.5 ~ 3.3           | VDC                |
| Supply Current, max          |                         |  | 20                  | mA                 |
| Operating Temperature Range  | $T_a$                   | ---  | -40 ~ +85           | $^{\circ}\text{C}$ |
| Storage Temperature Range    | $T_{(stg)}$             | Absolute max   | -55 ~ +125          | $^{\circ}\text{C}$ |
| Output Logic Type            | ---                     |  | LVDS                |                    |
| Freq. Stability, max         | $\Delta f/f_o$          | Inclusive of $25^{\circ}\text{C}$ Tolerance and Changes due to Operating Temperature, Supply Voltage, Load and Aging | $\pm 50$            | ppm                |
| Output Voltage               | $V_{OL}$                | Logic "0" Level, min   | 0.9                 | VDC                |
|                              | $V_{OH}$                | Logic "1" Level, max   | 1.6                 | VDC                |
| Output Load                  | ---                     | Out-OutN   | 100                 | $\Omega$           |
| Enable / Disable Function    | E/D                     | Pin 1: High, Pins 4 & 5 – Oscillation (Enabled), min   | $0.7 \times V_{CC}$ | V                  |
|                              |                         | Pin 1: Low, Pins 4 & 5 – High Impedance (Disabled), max  | $0.3 \times V_{CC}$ | V                  |
| Symmetry (Duty Cycle)        | DC                      | @50% Wave Form   | 45 ~ 55             | %                  |
| Stand by Current, max        |                         |  | 10                  | $\mu\text{A}$      |
| Offset Voltage min/typ/max   | $V_{OS}$                |  | 1.125/1.25/1.375    | V                  |
| Output Swing, min            | $V_{OPP}$               |  | 0.4                 | V                  |
| Rise Time and Fall Time, max | $t_r / t_f$             | @20% to 80% Wave Form  | 0.4                 | ns                 |
| Start up Time, max           | $t_{start}$             |  | 2                   | ms                 |
| Jitter, RMS, max             | J                       | $1\sigma, 12\text{kHz} < F_j < 20\text{MHz}$   | 50                  | fs                 |
| Phase Noise, typ             | $\mathcal{E}(\Delta f)$ |  | 2.5V                | 3.3V               |
|                              |                         | @10Hz  | -75.40              | -73.74             |
|                              |                         | @100Hz   | -105.60             | -104.71            |
|                              |                         | @1kHz  | -134.60             | -133.87            |
|                              |                         | @10kHz   | -150.75             | -149.44            |
|                              |                         | @100kHz  | -157.38             | -153.29            |
|                              |                         | @1MHz  | -161.58             | -162.25            |
|                              |                         | @40MHz   | -164.00             | -167.62            |

#### OUTPUT WAVEFORM

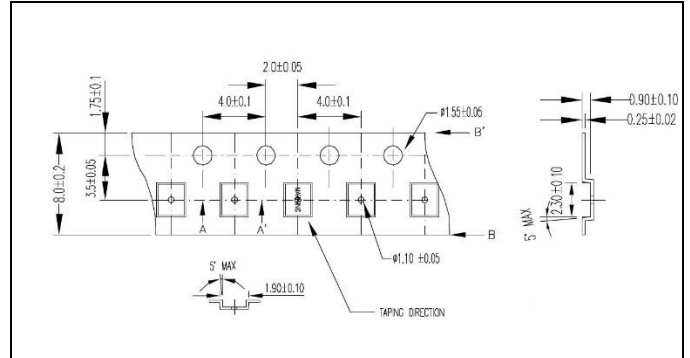


### CLF2016-156.257812-J-50-X-T-N1

#### MECHANICAL SPECIFICATION



#### CARRIER TAPE DIMENSIONS

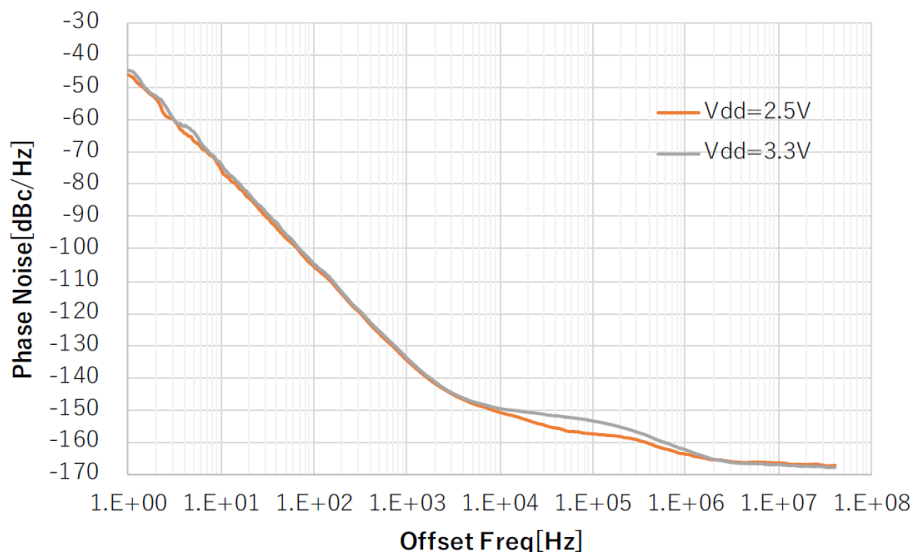


NOTE: REFER TO EIA-481 FOR DIMENSIONS NOT LISTED

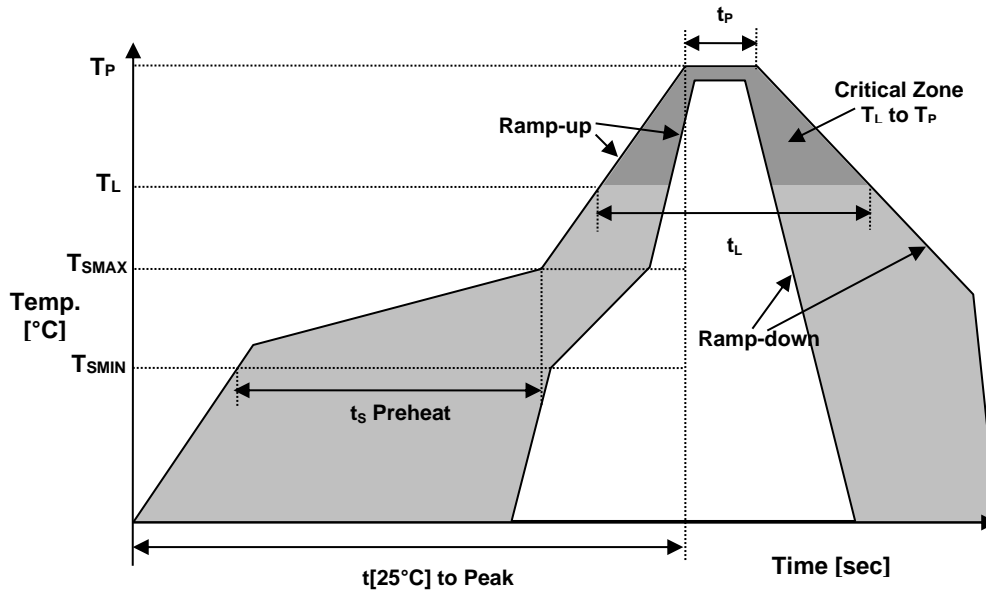
#### PACKAGING

180 mm REEL DIAMETER  
8 mm TAPE WIDTH, 4 mm PITCH  
QUANTITY: 3000 PIECES PER REEL

#### PHASE NOISE GRAPH



### 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

Rxx156  
•JBeyw

x – Internal Production ID code  
y – Year code  
w – Week code

| YEAR CODE |      |
|-----------|------|
| Year      | Code |
| 2019      | 9    |
| 2020      | 0    |
| 2021      | 1    |
| 2022      | 2    |
| 2023      | 3    |
| 2024      | 4    |
| 2025      | 5    |
| 2026      | 6    |
| 2027      | 7    |
| 2028      | 8    |
| 2029      | 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    |      |      |
| 18                    | r    | 36   | J    |      |      |

#### APPROVAL

| RALTRON      |                       |
|--------------|-----------------------|
| DRAWN BY:    | JS, February 14, 2025 |
| APPROVED BY: | CP, February 14, 2025 |
| REVISION:    | A, Initial Release    |

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