**R2016-38.400-10-F-2020-X-TR-NS2**

## SPECIFICATIONS

| PARAMETER | VALUE | |
|---|---|---|
| NOMINAL FREQUENCY | 38.400 MHz | |
| MODE OF OSCILLATION | Fundamental | |
| FREQUENCY TOLERANCE AT 25°C | ±20 ppm max | |
| FREQUENCY STABILITY OVER TEMPERATURE | ±20 ppm max | |
| OPERATING TEMPERATURE RANGE | -40°C to +85°C | |
| STORAGE TEMPERATURE RANGE | -40°C to +85°C | |
| AGING | ±10 ppm over 10 years typ | ⇦ |
| LOAD CAPACITANCE | 10 pF | |
| EQUIVALENT SERIES RESISTANCE | 30 Ω max | ⇦ |
| SHUNT CAPACITANCE | 3.0 pF max | ⇦ |
| DRIVE LEVEL | 100 µW max | |
| REFLOW CONDITIONS | 260°C for 10 sec max | |

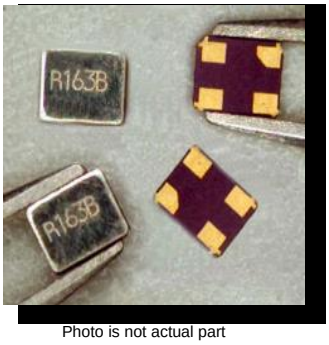
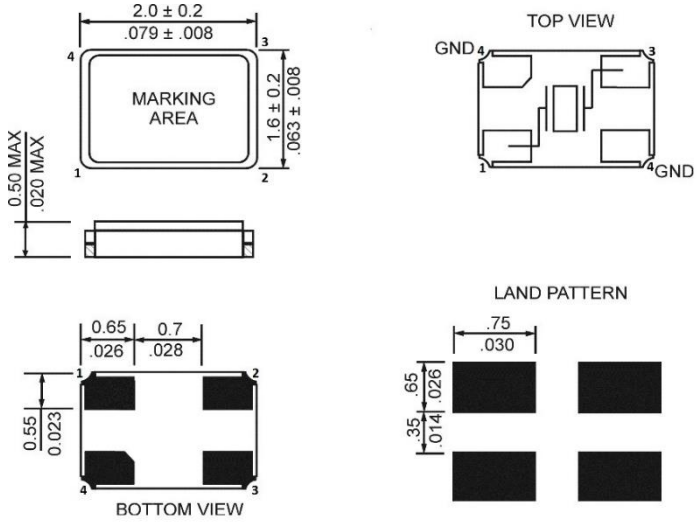


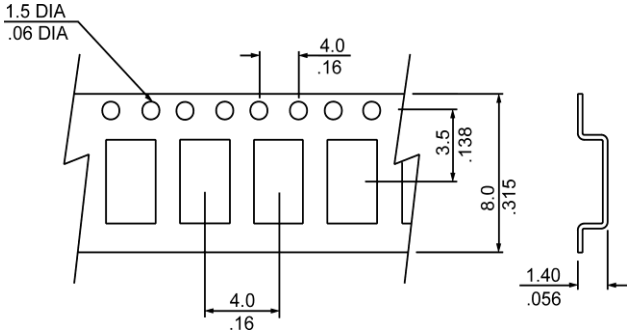
Photo is not actual part

## MECHANICAL SPECIFICATION




**Note:** According to ceramic base availability the Chamfer location could be on a different pin. However, the Chamfer's location does not influence the electrical performance of the crystal.

## CARRIER TAPE DIMENSIONS

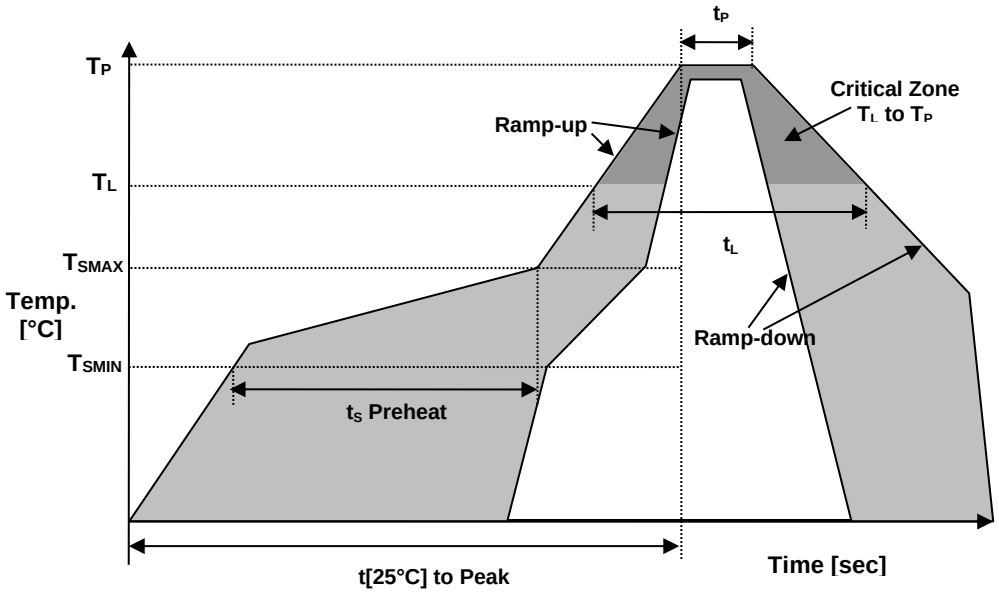



**NOTE: REFER TO EIA-481 FOR DIMENSIONS**

- **PACKAGING**
  178 mm REEL DIAMETER
  8 mm TAPE WIDTH, 4 mm PITCH
  QUANTITY: 3000 PIECES PER REEL

  IN ACCORDANCE WITH EIA-481

## 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 |
| RoHS | Compliant |
| REACH SVHC | Compliant |
| HALOGEN-FREE | Compliant |
| ESD CLASSIFICATION LEVEL | N/A |
| TERMINATION FINISH | Au |

## • MARKING

R384
xKyw

x – 1 or 2 digits as 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 |
| 2024 | 4 |
| 2025 | 5 |

| 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

| | |
|---|---|
| DRAWN BY: | CP, March 22, 2019 |
| APPROVED BY: | JI, March 22, 2019 |
| REVISION: | A, Initial Release |
| | B, AR, July 21, 2020<br>Updated the Current Revision Levels |