

**SPECIFICATIONS**

| PARAMETER                    | VALUE                           |
|------------------------------|---------------------------------|
| NOMINAL FREQUENCY            | 32.768 kHz                      |
| MODE OF OSCILLATION          | Fundamental                     |
| FREQUENCY TOLERANCE AT 25°C  | ±20 ppm max                     |
| TURNOVER TEMPERATURE         | +25 ± 5°C                       |
| TEMPERATURE COEFFICIENT      | -0.04 ppm / °C <sup>2</sup> max |
| OPERATING TEMPERATURE RANGE  | -40°C to +85°C                  |
| STORAGE TEMPERATURE RANGE    | -55°C to +125°C                 |
| AGING                        | ±3 ppm first year max           |
| LOAD CAPACITANCE             | 12.5 pF                         |
| EQUIVALENT SERIES RESISTANCE | 50 kΩ typ , 70 kΩ max           |
| SHUNT CAPACITANCE            | 1.1 pF typ, 1.8 pF max          |
| MOTIONAL CAPACITANCE         | 3.5 fF typ, 7.0 fF max          |
| DRIVE LEVEL                  | 0.5 μW max                      |
| INSULATION RESISTANCE        | 500 MΩ min @ DC 100V            |

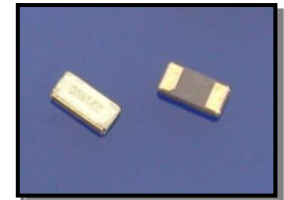
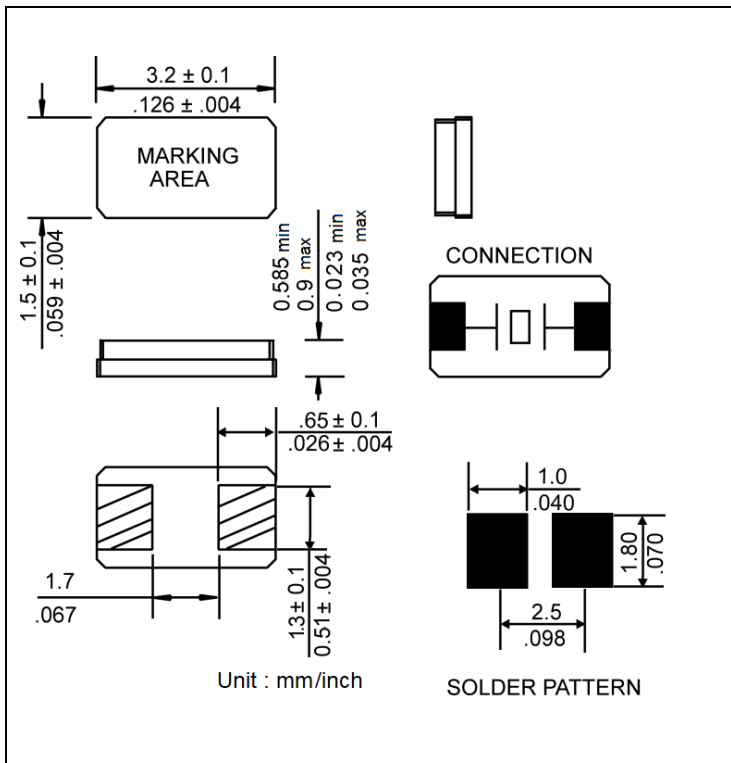
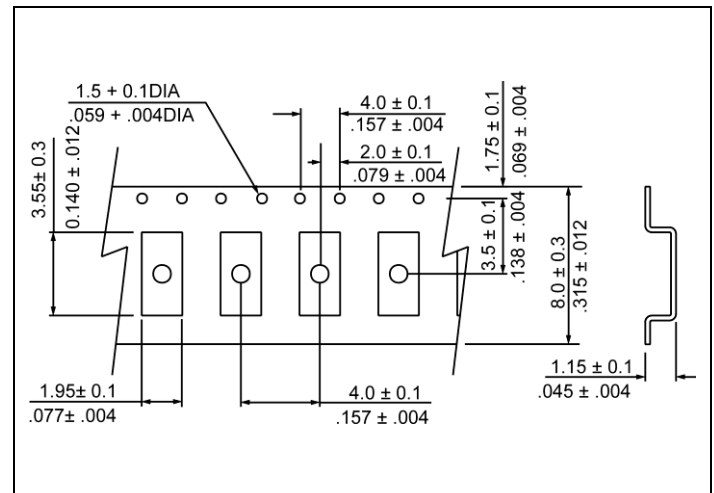


Photo not actual part

**MECHANICAL SPECIFICATION**



**CARRIER TAPE DIMENSIONS**



NOTE: REFER TO EIA-481 FOR DIMENSIONS

**PACKAGING**

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

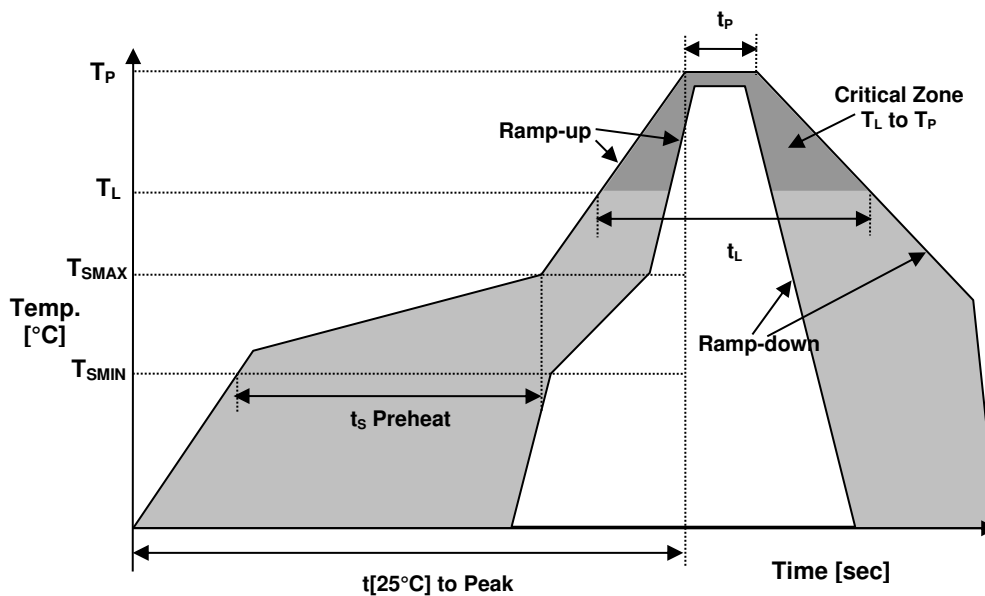
IN ACCORDANCE WITH EIA-481

## PART NUMBERING SYSTEM

| TYPE   | - | FREQUENCY kHz | - | LOAD CAPACITANCE pF | - | TOLERANCE PPM* | - | TAPE & REEL |
|--------|---|---------------|---|---------------------|---|----------------|---|-------------|
| RT3215 | - | 32.768        | - | 6, 7, 9 or 12.5     | - | 5 or 10        | - | TR          |

\*Note: Not included in the PN if the Tolerance has the standard value 20ppm

## 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

Xywwx

X – Internal Production ID code (J, R, T, Y, M, R, N)  
y – Year code  
ww – Week code  
x – 1 or 2 digits as Lot code

ymxxx

y – Year code  
m – Month code, Jan ~ Sep: 1 ~ 9, Oct: X Nov: Y Dec: Z  
xxx – Lot code

XLzymb

X – Internal Production ID code (J, R, T, Y, M, R, N)  
L – Load capacitance code (A: 12.5pF B: 9pF C: 7pF Z: others )  
z – Lot code  
y – Year code  
m – Month code, Jan ~ Sep: 1 ~ 9, Oct: X Nov: Y Dec: Z  
d – Day code

XzymF<sub>xx</sub><sup>xx</sup>

X – Internal Production ID code (J, R, T, Y, M, R, N)  
z – Frequency code  
y – Year code  
m – Month code, Jan ~ Sep: 1 ~ 9, Oct: X Nov: Y Dec: Z  
<sub>xx</sub> – Lot code



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● APPROVAL

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Drawn By:    | A, Initial Release                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Approved By: | FP, 20 November 2013                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Revision:    | A, Initial Release<br>CP, May 04, 2017<br>Updated to current spec level<br>F, CP March 27,2018<br>Added PN System<br>G, CP, March 27, 2018<br>Updated the Marking System<br>H, KJ June 25, 2018<br>Updated Marking System<br>I, CP August 29, 2018<br>Updating Marking System<br>J, YG Jiao, July 2, 2019<br>Remove Marking system<br>K, Updated to current spec levels by XLiu, April 30, 2020<br>L, Updated to current spec levels by XLiu, June 4, 2020<br>M, CP, June 24, 2020.<br>Updated C <sub>0</sub> ,C <sub>1</sub> and ESR<br>N, CP, June 29, 2020<br>Completed the Revision Level Changes |

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