

**R2016-32.000-10-F-1010-TR-B1B  
REV B**

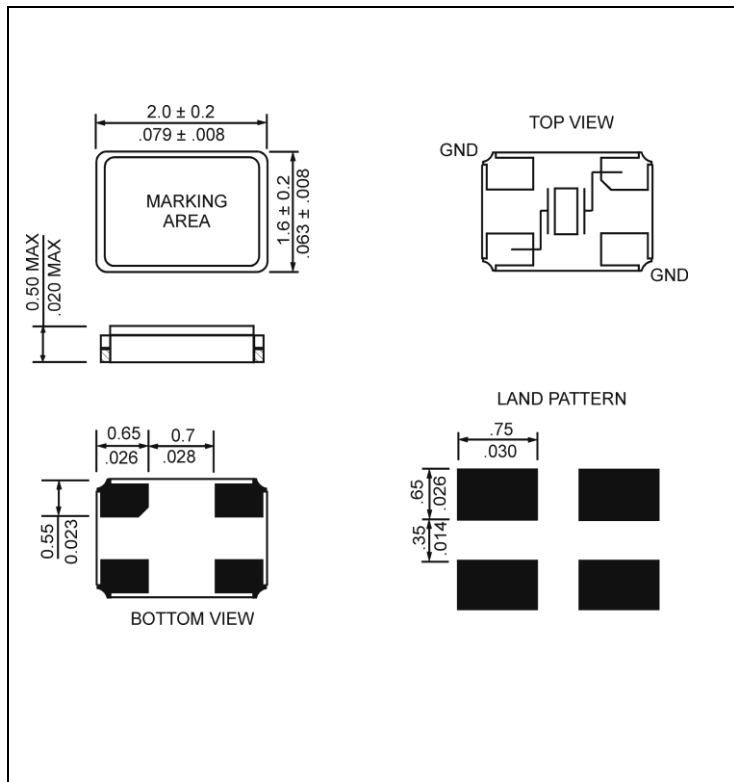
**SPECIFICATIONS**

| PARAMETER                            | VALUE   |
|--------------------------------------|---|
| NOMINAL FREQUENCY                    | 32.000 MHz  |
| MODE OF OSCILLATION                  | FUNDAMENTAL   |
| FREQUENCY TOLERANCE AT 25°C          | ±10 PPM MAXIMUM                                       |
| FREQUENCY STABILITY OVER TEMPERATURE | ±10 PPM MAXIMUM                                       |
| OPERATING TEMPERATURE RANGE          | -30°C TO +70°C ↩                                      |
| STORAGE TEMPERATURE RANGE            | -40°C TO +85°C  |
| AGING                                | ±3 PPM PER YEAR MAXIMUM                               |
| LOAD CAPACITANCE                     | 10 pF   |
| EQUIVALENT SERIES RESISTANCE         | 40 Ω ↩  |
| SHUNT CAPACITANCE                    | 7 pF MAXIMUM  |
| UNWANTED MODE                        | FROM F <sub>n</sub> TO F <sub>n</sub> +500kHz         |
| R <sub>p</sub> /R <sub>1</sub>       | 2 MINIMUM   |
| DRIVE LEVEL                          | 100 μW MAXIMUM  |
| G-SENSITIVITY                        | 2 PPB/G MAXIMUM                                       |
| SHOCK RESISTANCE                     | ±5 PPM MAXIMUM 75 cm DROP TEST ON A HARD WOOD SURFACE |
| REFLOW CONDITIONS                    | 260°C ±5°C FOR 10s MAXIMUM                            |

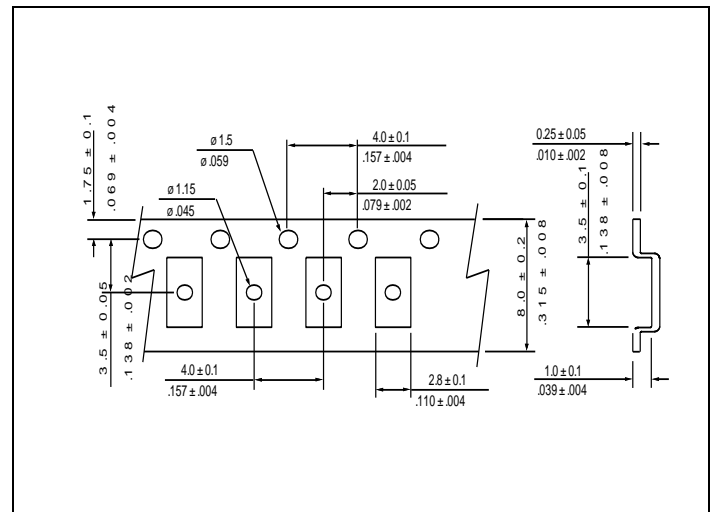


Photo is not actual part

**MECHANICAL SPECIFICATION**



**CARRIER TAPE DIMENSIONS**



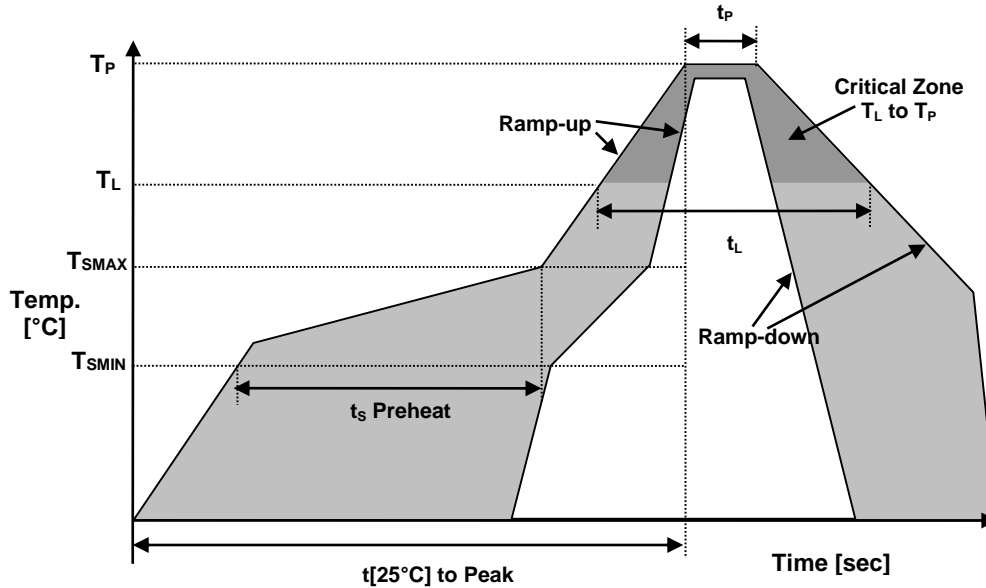
NOTE: REFER TO EIA-481 FOR DIMENSIONS

**● PACKAGING**

178 mm REEL DIAMETER  
8 mm TAPE WIDTH, 4 mm PITCH  
QUANTITY: 1000 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 $t_{[25^\circ\text{C}] \text{ to Peak}}$ | $t_{[25^\circ\text{C}] \text{ to Peak}}$ | 480 sec.     |
| Time  | $t_L$                                    | 60-150 sec.  |

## ● ENVIRONMENTAL

| PARAMETER                  | VALUE                     |
|----------------------------|---------------------------|
| MOISTURE SENSITIVITY LEVEL | 1                         |
| RoHS-2                     | 6/6 COMPLIANT & LEAD FREE |
| REACH SVHC                 | COMPLIANT                 |
| HALOGEN-FREE               | COMPLIANT                 |
| ESD CLASSIFICATION LEVEL   | N/A                       |
| TERMINATION FINISH         | Au                        |



• MARKING

R320  
XKyw

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

|              |   |
|--------------|---|
| DRAWN BY:    | KJackson, February 9, 2016                                |
| APPROVED BY: | KJackson, February 9, 2016                                |
| REVISION:    | A, Initial Release  |
|              | B, Added G-Sensitivity Spec and revised ESR 2/10/16<br>KJ |
|              |   |



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**SURFACE MOUNT CRYSTAL**

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