

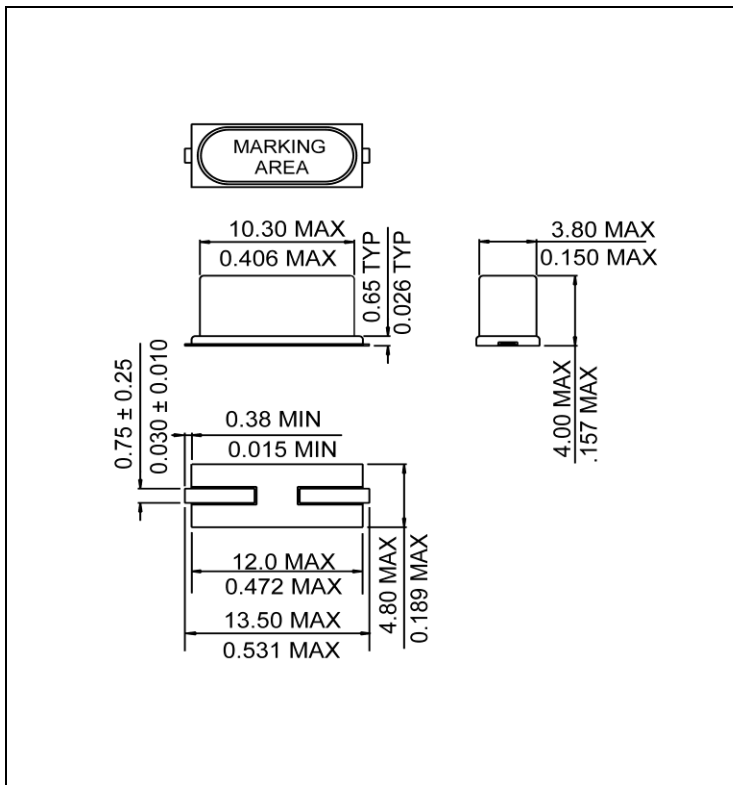
## ● SPECIFICATIONS

| PARAMETER                            | VALUE                |
|--------------------------------------|----------------------|
| NOMINAL FREQUENCY                    | 13.000 MHz           |
| MODE OF OSCILLATION                  | Fundamental          |
| FREQUENCY TOLERANCE AT 25°C          | ±30 ppm max          |
| FREQUENCY STABILITY OVER TEMPERATURE | ±50 ppm max          |
| OPERATING TEMPERATURE RANGE          | -20°C to +70°C       |
| STORAGE TEMPERATURE RANGE            | -55°C to +125°C      |
| AGING                                | ±5 ppm per year max  |
| LOAD CAPACITANCE                     | 18 pF                |
| EQUIVALENT SERIES RESISTANCE         | 50 Ω max             |
| SHUNT CAPACITANCE                    | 7 pF max             |
| DRIVE LEVEL                          | 1000 μW max          |
| REFLOW CONDITIONS                    | 260°C for 10 sec max |
| INSULATION RESISTANCE                | 500 MΩ min @ DC 100V |

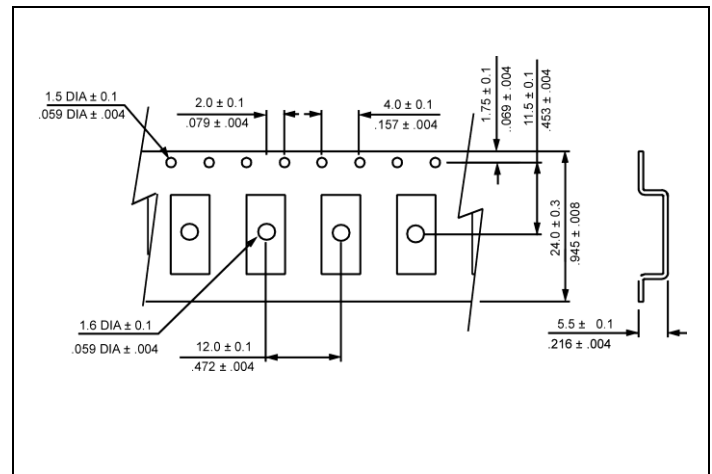


Photo is not actual part

## ● MECHANICAL SPECIFICATION



## ● CARRIER TAPE DIMENSIONS



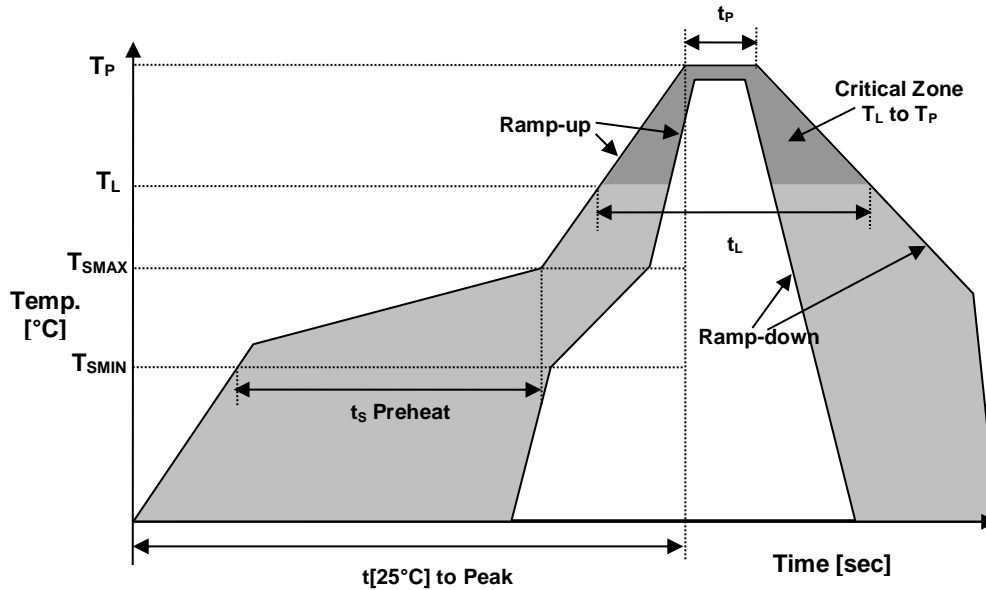
NOTE: REFER TO EIA-481 FOR DIMENSIONS

## ● PACKAGING

178 mm REEL DIAMETER  
24 mm TAPE WIDTH, 12 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 $t[25^\circ\text{C}]$ 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 |
| ESD CLASSIFICATION LEVEL   | N/A       |
| TERMINATION FINISH         | Sn        |





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LOW PROFILE  
MICROPROCESSOR CRYSTAL

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AS-13.000-18-SMD-TR

• MARKING

R130xxByw

x – 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:    | KJackson, March 31, 2014             |
| APPROVED BY: | KJackson, March 31, 2014             |
| REVISION:    | A, Initial Release                   |
|              | Updated to current specs KJ 10/17/16 |
|              | B, Updated to current spec levels by |
|              | XL, June 19, 2019                    |

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