

SURFACE MOUNT MICROPROCESSOR CRYSTAL

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H13-12.000-18-2020-TR

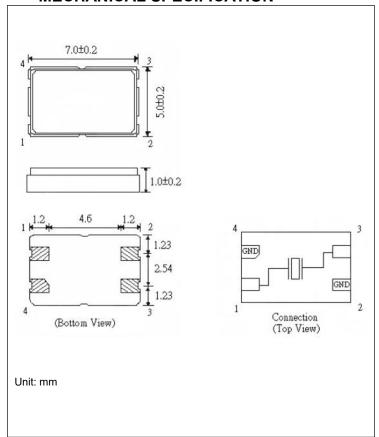
SPECIFICATIONS

| PARAMETER | VALUE |
|--------------------------------------|---------------------|
| NOMINAL FREQUENCY | 12.000 MHz |
| MODE OF OSCILLATION | Fundamental |
| FREQUENCY TOLERANCE AT 25°C | ±20 ppm max |
| FREQUENCY STABILITY OVER TEMPERATURE | ±20 ppm max |
| OPERATING TEMPERATURE RANGE | -10°C to +60°C |
| STORAGE TEMPERATURE RANGE | -40°C to +85°C |
| AGING | ±5 ppm per year max |
| LOAD CAPACITANCE | 18 pF |
| EQUIVALENT SERIES RESISTANCE | 60 Ω max |
| SHUNT CAPACITANCE | 5 pF max |
| DRIVE LEVEL | 300 μW max |

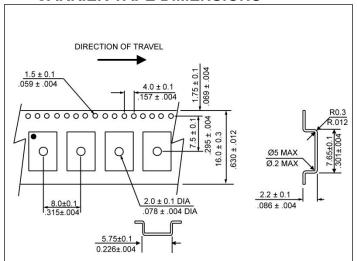


Photo is not actual par

MECHANICAL SPECIFICATION



CARRIER TAPE DIMENSIONS



NOTE: REFER TO EIA-481 FOR DIMENSIONS

PACKAGING

255 mm REEL DIAMETER 16 mm TAPE WIDTH, 8 mm PITCH QUANTITY: 1000 PIECES PER REEL

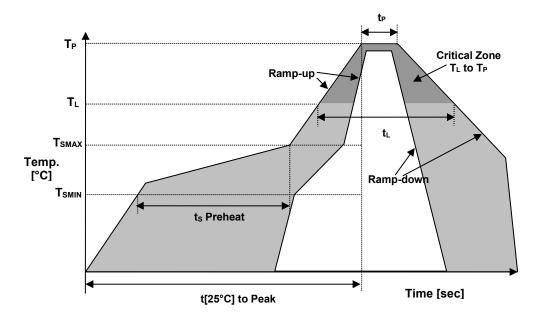
IN ACCORDANCE WITH EIA-481



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REFLOW PROFILE



| Reflow profile | | | | |
|--|-------------------|--------------|--|--|
| Temperature Min Preheat | T _{SMIN} | 150°C | | |
| Temperature Max Preheat | T _{SMAX} | 200°C | | |
| Time (T _{SMIN} to T _{SMAX}) | ts | 60-180 sec. | | |
| Temperature | T∟ | 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₽ | 10 sec. | | |
| Time t[25°C] to Peak Temperature | t[25°C] to Peak | 480 sec. | | |
| Time | t∟ | 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 |





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MARKING

R12.000 xxBDyw

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 | О |
| 6 | f | 24 | x | 42 | P |
| 7 | g | 25 | У | 43 | Q |
| 8 | h | 26 | Z | 44 | R |
| 9 | i | 27 | A | 45 | S |
| 10 | j | 28 | В | 46 | T |
| 11 | k | 29 | C | 47 | U |
| 12 | 1 | 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 | Н | 52 | Z |
| 17 | q | 35 | I | | |
| 18 | r | 36 | J | | |

APPROVAL

| RALTRON | |
|--------------|--------------------------|
| DRAWN BY: | XLiu, January 31, 2019 |
| APPROVED BY: | JIvens, January 31, 2019 |
| REVISION: | A. Initial Release |

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