

# SMD QUARTZ CRYSTAL SPECIFICATION

## SERIES „SMD02016/4 32.000 MHZ 10/20/-40+85/10PF/40R“

### FEATURES

- + New ultra compact top seller SMD-Crystal in ceramic package
- + High reliability for low cost
- + Our top quality promise / depth of production:
  - Only use of crystal blanks from our in-house production
  - Excellent product features guaranteed by multiple 100% tests
  - 100% quality monitoring from crystal raw material to the end product



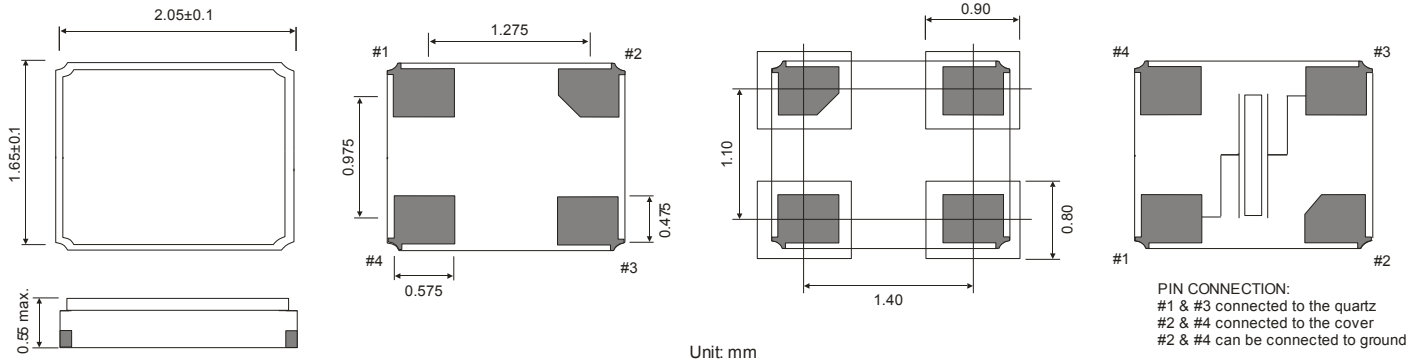
### GENERAL DATA

| PARAMETERS                          | PRODUCT FEATURES AND CONDITIONS                    |
|-------------------------------------|--|
| SMD-CRYSTAL SERIES                  | SMD02016/4   |
| PACKAGE HEIGHT                      | 0.55 mm max.                                       |
| FREQUENCY                           | 32.000 MHz   |
| MODE OF VIBRATION                   | AT-FUNDAMENTAL                                     |
| EQUIVALENT SERIES RESISTANCE        | 40 Ω max.  |
| FREQUENCY TOLERANCES AT 25°C        | ±10 ppm  |
| LOAD CAPACITANCE (CL)               | 10 pF  |
| WORKING TEMPERATURE RANGE           | -40/+85°C  |
| TEMPERATURE STABILITY               | ±20 ppm over -40/+85°C (referred to +25°C)         |
| SHUNT CAPACITANCE (C <sub>0</sub> ) | 1.5 pF max.  |
| AGING                               | ±10 ppm max. after 10 years                        |
| DRIVE LEVEL                         | 100 μW typ. / 200 μW max.                          |
| INSULATION RESISTANCE               | >500 MΩ DC/100V ±15V                               |
| STORAGE TEMPERATURE                 | -55/+125°C   |
| G-SENSITIVITY                       | 0.3 ppb/G typ. / 1.0 ppb/G max.                    |
| DELIVERY FORM                       | Tape & Reel (3.000 pcs)                            |
| RoHS                                | Lead free and RoHS compliant                       |
| SOLDERING CONDITION                 | See reflow solder profile                          |
| MARKING                             | Line 1 = 32WX2<br>Line 2 = xxxx (xxxx = date code) |
| ORDERING CODE                       | SMD02016/4 32.000 MHz 10/20/-40+85/10pF/40R        |
| CUSTOMER P/N                        |  |
| PETERMANN-TECHNIK P/N               | QEU9310091   |

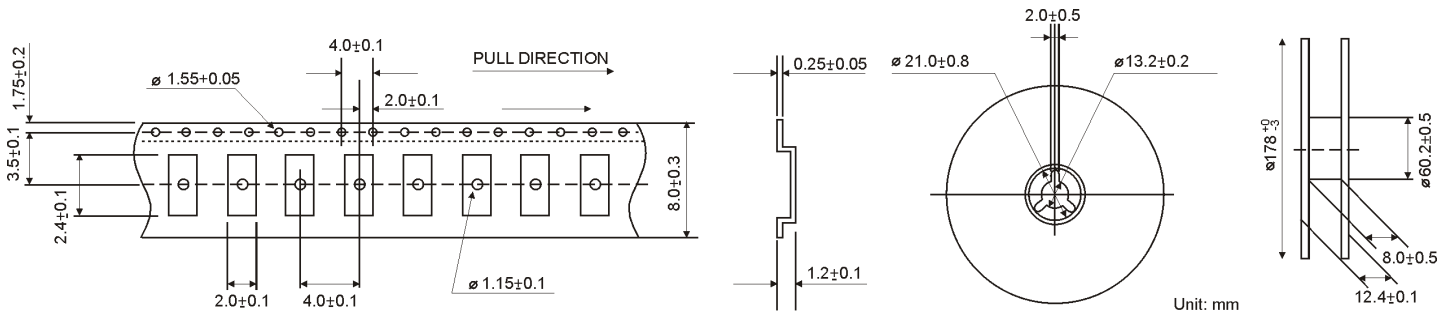
Note:

1. The reference temperature for all specified values and tests is +25°C.
2. Do not use cleaning baths operating at ultrasonic frequencies or ultrasonic welding processes.

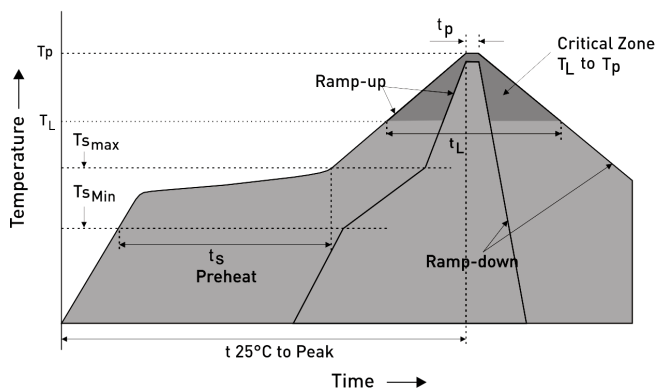
## DIMENSIONS



## REEL SPECIFICATION



## REFLOW SOLDER PROFILE



| IPC/JEDEC Standard                  | IPC/JEDEC J-STD-020 |
|-------------------------------------|---------------------|
| Moisture Sensitivity Level          | Level 1             |
| TS MAX to TL (Ramp-up Rate)         | 3°C/second Maximum  |
| Preheat                             |                     |
| - Temperature Minimum (TS MIN)      | 150°C               |
| - Temperature Typical (TS TYP)      | 175°C               |
| - Temperature Maximum (TS MAX)      | 200°C               |
| - Time (tS)                         | 60 - 180 seconds    |
| Ramp-up Rate (TL to TP)             | 3°C/second Maximum  |
| Time Maintained Above:              |                     |
| - Temperature (TL)                  | 217°C               |
| - Time (TL)                         | 60 - 150 seconds    |
| Peak Temperature (TP)               | 265°C Maximum       |
| Target Peak Temperature (TP Target) | 255°C               |
| Time within 5°C of actual peak (tP) | 20 - 40 seconds     |
| Max. Number of Reflow Cycles        | 2                   |
| Ramp-down Rate                      | 6°C/second Maximum  |
| Time 25°C to Peak Temperature (t)   | 8 minutes Maximum   |



## PREMIUM QUALITY BY PETERMANN-TECHNIK



OUR COMPANY IS CERTIFIED ACCORDING TO ISO 9001:2015 AND 14001:2015

THIS IS FOR YOU TO ENSURE THAT THE PRINCIPLES OF QUALITY MANAGEMENT ARE FULLY IMPLEMENTED IN OUR QUALITY MANAGEMENT SYSTEM AND QUALITY CONTROL METHODS ALSO DOMINATE OUR QUALITY STANDARDS.