

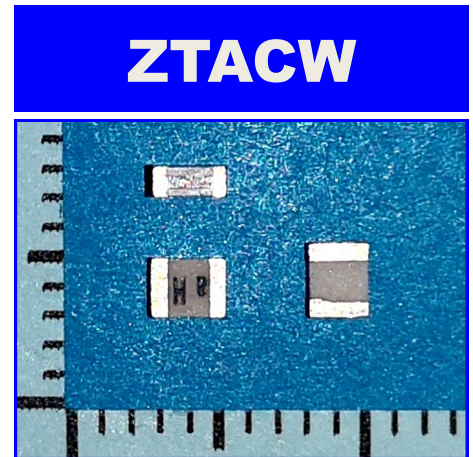
### CERAMIC RESONATOR UNIT IN CERAMIC SMD PACKAGE, SIZE 2.5 X 2.0MM.

#### PRODUCT FEATURES

- CERAMIC SMD CASE IN SIZE 2.5 X 2.0 X 1.2MM WITH 2 SOLDER PADS.
- INDUSTRIAL OPERATING TEMPERATURE RANGE -40 TO +85°C AVAILABLE.

#### APPLICATIONS

- MICROPROCESSOR
- REMOTE CONTROL DEVICES
- PORTABLE DEVICES



#### PRODUCT SPECIFICATIONS

| PARAMETER                      | SYMBOL            | SPECIFICATIONS                                       | REMARKS                              |
|--------------------------------|-------------------|--|--------------------------------------|
| FREQUENCY RANGE                | $F_N$             | <b>16.0 ~ 48.0MHZ</b>                                | NOTE 1                               |
| OSCILLATION MODE               | —                 | EXTENSIONAL OVERTONE                                 | —                                    |
| FREQUENCY TOLERANCE            | $\Delta f/F_N$    | $\pm 0.5\%$ OR $\pm 0.3\%$                           | STANDARD / OPTION                    |
| STABILITY OVER OPERATING TEMP. | $T_C$             | $\pm 0.2\%$ OR $\pm 0.3\%$                           | DEPENDENT ON OPERATING TEMP. RANGE   |
| OPERATING TEMPERATURE RANGE    | $T_{OP}$          | -25°C ~ +85°C OR -40°C ~ +85°C                       | —                                    |
| AGING RATE OVER 10 YEARS       | $\Delta f/y_{10}$ | $\pm 0.2\%$  | @+25°C                               |
| RESONANCE RESISTANCE           | $R_O$             | 60Ω MAX<br>50Ω MAX                                   | 16.00 ~ 25.99MHZ<br>26.00 ~ 48.00MHZ |
| LOAD CAPACITORS (EXTERNAL)     | C1 & C2           | 15pF (5; 6; 9; 10; 15pF)<br>5pF (6; 9; 10; 12; 15pF) | 16.00 ~ 25.99MHZ<br>26.00 ~ 48.00MHZ |
| RATED VOLTAGE                  | $U_R$             | 6.0V <sub>DC</sub> OR 15.0V <sub>PP</sub>            | MAXIMUM DC OR AC OPERATING VOLTAGE   |
| WITHSTANDING VOLTAGE           | $U_W$             | 50.0V <sub>DC</sub>                                  | FOR 1 MINUTE MAXIMAL                 |

NOTE 1: TYPICAL FREQUENCIES: 16.00MHZ, 18.43MHZ, 20.00MHZ, 24.00MHZ, 25.00MHZ, 27.00MHZ, 32.00MHZ, 33.86MHZ, 40.00MHZ, 48.00MHZ.

NOTE 2: THE LOAD CAPACITORS C1 AND C2 ARE TO BE ADDED ONTO PCB, SHOWN IS THE RECOMMENDED CAPACITOR VALUE, THE VALUES IN BRACKETS SHOW AVAILABLE OPTIONS FOR WHICH THE RESONATOR CAN BE TUNED FOR (SETUP IN MANUFACTURING READY). OTHER VALUES PLEASE REQUEST.

#### MECHANICAL DIMENSIONS

Height is depending on frequency:  
H = 1.0 ~ 1.2mm + Tolerance (±0.1)

#### RECOMMENDED LAND PATTERN

| PAD | FUNCTION                  |
|-----|---------------------------|
| 1   | INPUT / OUTPUT [IN / OUT] |
| 2   | OUTPUT / INPUT [OUT / IN] |

Ceramic resonator package  
2.5x2.0mm with 2 pads

**CCR22-P2** B 2019-03

No scale Unit: mm

### CERAMIC RESONATOR UNIT IN CERAMIC SMD PACKAGE, SIZE 2.5 X 2.0MM.

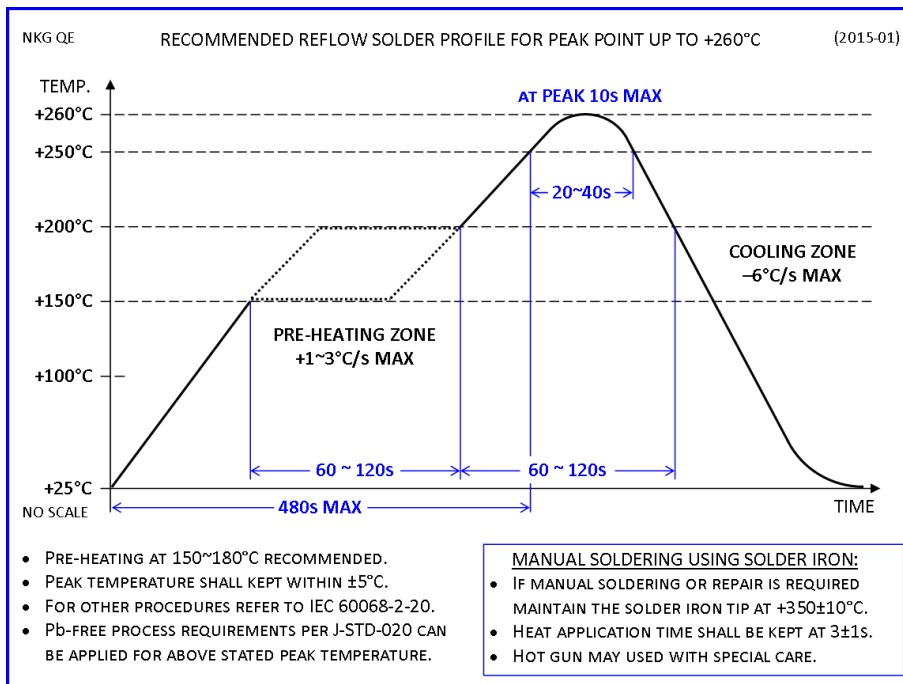
# ZTACW

#### ENVIRONMENTAL COMPLIANCE INFORMATION

- ROHS 5/6 COMPLIANT (DIRECTIVE 2011/65/EC).
- COMPLIANT TO ROHS 2 (DIRECTIVE 2015/863) (ALSO CALLED ROHS 10).
- HALOGEN-FREE PER DEFINITION OF IEC 61249-2-21 2033.
- COMPLIANCE TO THE LISTED SVHCs BY REACH IS NOT GIVEN ANYMORE SINCE LEAD AND LEAD COMPOUNDS HAD BEEN ADDED TO THE LIST OF SVHCs.
- PRODUCT DOES NOT CONTAIN ANY PHTHALATES (PHs).
- PRODUCT DOES NOT CONTAIN PVC (POLYVINYL CHLORIDE).
- PRODUCT DOES NOT CONTAIN PFOS/PFOA NOR BEING SAME USED TO MANUFACTURE THE COMPONENTS OF THIS PRODUCT.
- MOISTURE SENSITIVITY LEVEL (MSL) 1 PER J-STD-020C.

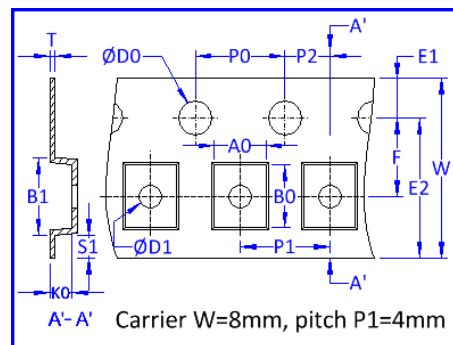


#### SOLDERING RECOMMENDATIONS



#### PACKAGING INFORMATION

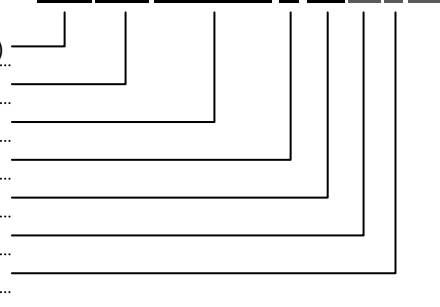
- PACKAGING IN TAPE & REEL IN COMPLIANCE TO EIA-481.
- QTY PER REEL: 3,000PCS
- REEL DIA A=180MM.
- EMBOSSED CARRIER TAPE WIDTH W = 8MM.
- COMPONENT PITCH P1 = 4MM.



#### PART NUMBER SYNTAX

- ..... PART NUMBER FAMILY (GROUP INDICATOR FOR CERAMIC RESONATOR WITH INBUILT LOAD CAPACITORS)
- ..... PART NUMBER FAMILY (MODEL INDICATOR REPRESENTING PACKAGE TYPE AND SIZE)
- ..... NOMINAL FREQUENCY (IN MHZ WITH AT LEAST TWO DIGITS AFTER DECIMAL POINT FOLLOWED BY "M")
- ..... VIBRATION MODE CODE (G = THICKNESS SHEAR FUND, T = EXTENSION FUND, X = EXTENSION OVERT.)
- ..... LOAD CAPACITOR VALUE (NUMERICAL VALUE OF INBUILT LOAD CAPACITORS C1 AND C2 IN pF)
- ..... OPERATING TEMPERATURE RANGE CODE (NO CODE= -25~85°C, M= -40~85°C, Z = -40~125°C)
- ..... FREQUENCY TOLERANCE CODE (OPTIONALLY USE FOR NONE-STANDARD TOLERANCE)
- ..... PART NUMBER EXTENSION (ONLY FOR NONE-STANDARD OR CUSTOMIZED PARTS)

### ZTACW 16.00M X 10MT -EXT



FOR MORE INFORMATION PLEASE CONTACT US.

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