

### CERAMIC RESONATOR UNIT WITH INBUILT LOAD CAPACITORS IN CERAMIC SMD PACKAGE, SIZE 3.2 X 1.2MM.

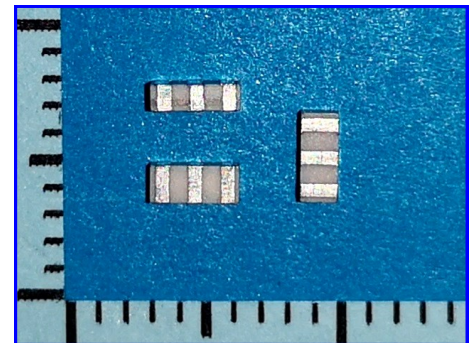
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#### PRODUCT FEATURES

- CERAMIC SMD CASE IN SIZE 3.2 X 1.2 X 1.0MM WITH 3 SOLDER PADS.
- INBUILT LOAD CAPACITORS, CIRCUIT DOES NOT REQUIRE EXTERNAL CAPACITORS.
- INDUSTRIAL OPERATING TEMPERATURE RANGE  $-40$  TO  $+85^{\circ}\text{C}$  AVAILABLE.
- EXTENDED OPERATING TEMPERATURE RANGE  $-40$  TO  $+125^{\circ}\text{C}$  AVAILABLE.

#### APPLICATIONS

- MICROPROCESSOR
- REMOTE CONTROL DEVICES
- PORTABLE DEVICES



#### PRODUCT SPECIFICATIONS

PARAMETER	SYMBOL	SPECIFICATIONS	REMARKS
FREQUENCY RANGE	$F_N$	<b>8.0 ~ 12.0MHz</b>	NOTE 1
OSCILLATION MODE	—	THICKNESS SHEAR FUNDAMENTAL	—
FREQUENCY TOLERANCE	$\Delta f/F_N$	$\pm 0.5\%$ OR $\pm 0.3\%$	STANDARD / OPTION
STABILITY OVER OPERATING TEMP.	$T_C$	$\pm 0.3\%$	DEPENDENT ON OPERATING TEMP. RANGE
OPERATING TEMPERATURE RANGE	$T_{OP}$	$-25^{\circ}\text{C} \sim +85^{\circ}\text{C}$ OR $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$	EXTENDED RANGE $-40 \sim +125^{\circ}\text{C}$ AVAILABLE
AGING RATE OVER 10 YEARS	$\Delta f/y_{10}$	$\pm 0.3\%$	@ $+25^{\circ}\text{C}$
RESONANCE RESISTANCE	$R_O$	40 $\Omega$ MAX	—
LOAD CAPACITORS (INBUILT)	C1 & C2	15pF (10; 22; 30; 33pF)	NOTE 2
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: 8.0MHz, 9.2MHz, 10.0MHz, 11.059MHz, 12.0MHz.

NOTE 2: SHOWN IS THE RECOMMENDED CAPACITOR VALUE, THE VALUES IN BRACKETS ARE OPTIONAL AVAILABLE LOAD CAPACITOR VALUES (SETUP IN MANUFACTURING READY).

#### MECHANICAL DIMENSIONS

Height is depending on frequency:  
H = 1.0mm MAX

#### RECOMMENDED LAND PATTERN

PAD	FUNCTION
1	INPUT / OUTPUT [IN / OUT]
2	GROUND [GND]
3	OUTPUT / INPUT [OUT / IN]

Ceramic resonator package  
3.2x1.2mm with 3 pads

**CCR31-P3** B 2019-03

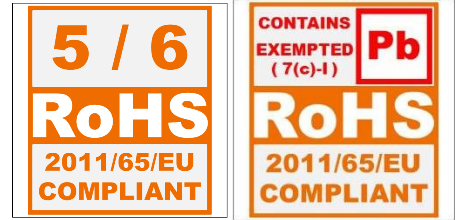
No scale Unit: mm

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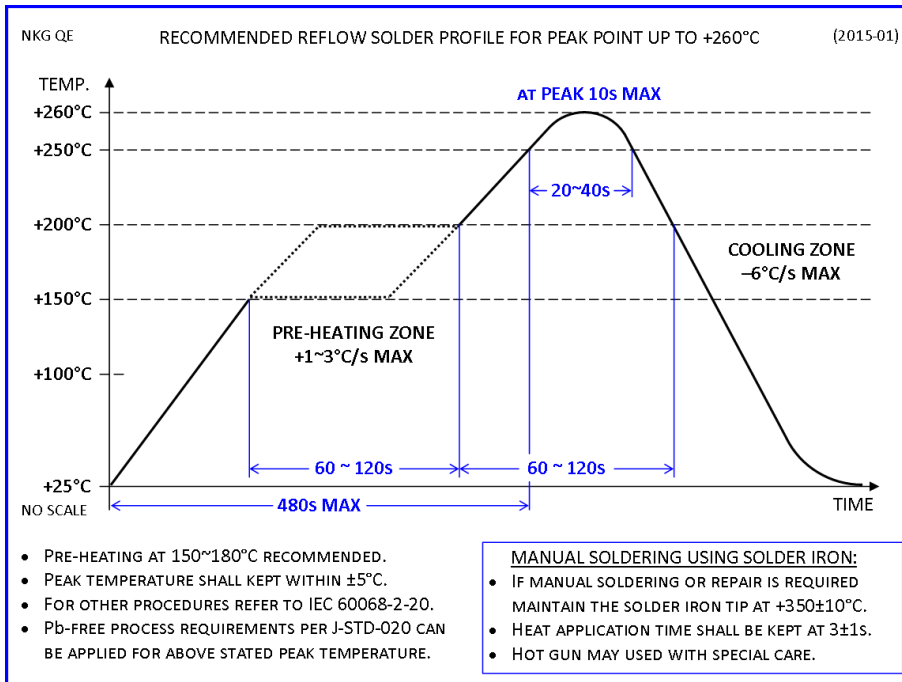
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#### ENVIRONMENTAL COMPLIANCE INFORMATION

- ROHS 5/6 COMPLIANT (DIRECTIVE 2011/65/EC) BY FALLING UNDER EXEMPTION 7(c)-I FOR CONTAINING LEAD (Pb) IN PIEZOELECTRIC CERAMIC (PZT) .
- COMPLIANT TO ROHS 2/3 (DIRECTIVE 2015/863) (ALSO CALLED ROHS 10).
- HALOGEN-FREE PER DEFINITION OF IEC 61249-2-21 2033.
- THE PRODUCT CONTAINS A SVHC PER REACH DUE TO THE INTENTIONAL USE OF PZT (CAS 12626-81-2), INFORMATION FOR IMPORTERS INTO THE EU CAN BE PROVIDED IN ORDER TO OBTAIN A SCIP ID AT THE ECHA PORTAL.
- 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.

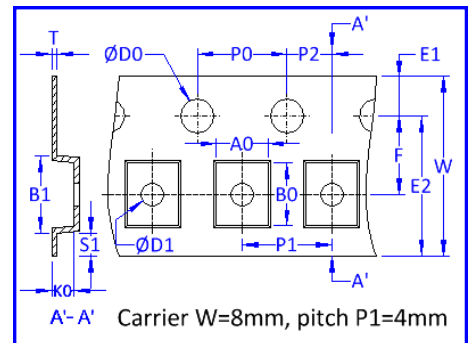


#### SOLDERING RECOMMENDATIONS



#### PACKAGING INFORMATION

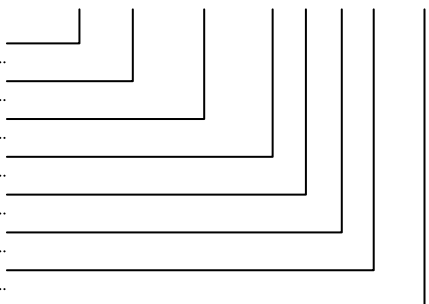
- PACKAGING IN TAPE & REEL IN COMPLIANCE TO EIA-481.
- QTY PER REEL: 3,000PCS
- REEL DIA A=180MM.
- EMBOSSED CARRIER TAPE WIDTH W = 8MM.
- COMPONENT PITCH P1 = 4MM.



#### 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)

#### ZTTCE 8.00M G 15 M T -EXT



FOR MORE INFORMATION PLEASE CONTACT US.

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