

TEMPERATURE COMPENSATED CRYSTAL OSCILLATOR UNIT WITH HCMOS OUTPUT IN METAL CAN DIP-14 PACKAGE.

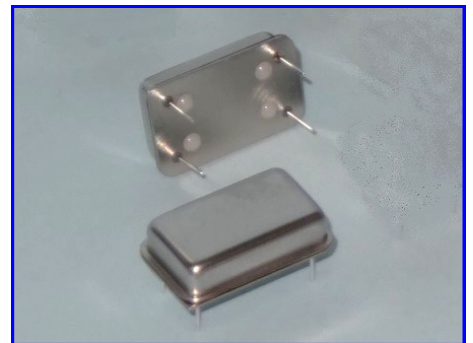
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PRODUCT FEATURES

- TCXO IN DIP-14 PACKAGE SIZE 20 X 13 X 6MM WITH 4 PINS.
- FREQUENCY RANGE 1 TO 160MHZ.
- LOW JITTER AND PHASE NOISE.

APPLICATIONS

- ETHERNET, ADSL
- WLAN / WiMAX
- AUDIO & VIDEO EQUIPMENT
- LARGE SCALE EQUIPMENT



PRODUCT SPECIFICATIONS

| PARAMETER | SYMBOL | PARAMETER VALUES / LIMITS | CONDITIONS / REMARKS |
|---|-----------------------|---|---|
| NOMINAL FREQUENCY | F_N | 1 ~ 160MHZ | FUNDAMENTAL OR OVERTONE DESIGN |
| SUPPLY VOLTAGE RANGE | V_{DD} | 2.5V / 2.8V / 3.3V / 5.0V | SEE OPTIONS TABLE ON PAGE 2 FOR DETAILS |
| SUPPLY CURRENT CONSUMPTION | I_{DD} | 10 ~ 35mA | SEE NOTE 1 |
| FREQUENCY TOLERANCE | $\Delta f/F_N$ | $\pm 1.0\text{PPM}$ OR $\pm 2.0\text{PPM}$ | @+25°C, OTHERS AVAILABLE |
| FREQUENCY STABILITY VS TEMP. | $\Delta f/F_N$ | $\pm 1.0\text{PPM}$ TO $\pm 5.0\text{PPM}$ | SEE NOTE 2, OTHERS AVAILABLE |
| OPERATING TEMPERATURE RANGE | T_{OP} | -10~+60°C OR -20~+70°C OR -40~+85°C | OTHER OPTIONS AVAILABLE |
| AGING FIRST YEAR | $(\Delta f/F_N)_{Y1}$ | $\pm 1\text{PPM}$ | @+25°C |
| OUTPUT WAVEFORM / LOAD | — / C_L | HCMOS / 15~30PF | DEPENDING ON SUPPLY VOLTAGE & FREQ. |
| OUTPUT VOLTAGE LEVELS | V_{OH}/V_{OL} | $\geq 90\%V_{DD}$ / $\leq 10\%V_{DD}$ | — |
| RISE AND FALL TIMES | t_R AND t_F | $\leq 6\text{ns}$ $V_{DD}=2.5\text{V}$ $\leq 8\text{ns}$ $V_{DD}=3.3\text{V}$ $\leq 7\text{ns}$ $V_{DD}=2.8\text{V}$ $\leq 10\text{ns}$ $V_{DD}=5.0\text{V}$ | @20%~80%~20% V_{DD} |
| OUTPUT SYMMETRY (DUTY CYCLE) | DC | 40/60% OR 45/55% | @50% V_{DD} |
| PHASE NOISE | $\ell(\Delta f)$ | -80 / -115 / -135 / -138 / -142dBc | TYP. 10MHZ AT 10 / 100 / 1k / 10k / 100kHz |
| TRISTATE FUNCTION (OPTIONAL) ENABLE/DISABLE FUNCTION PIN 1 | E/D | PIN1 = HIGH OR OPEN -> OUTPUT PIN3 ACTIVE PIN1 = LOW -> OUTPUT PIN3 HIGH IMPEDANCE | • OUTPUT HIGH IMPEDANCE = TRI-STATE • PIN1 CAN BE LEFT OPEN = FLOATING |

NOTE 1: CURRENT CONSUMPTION VARIES BY SUPPLY VOLTAGE, SEE OPTIONS TABLE ON PAGE 2 FOR MORE DETAILS.

NOTE 2: FREQUENCY STABILITY IS THE DEVIATIONS OVER OPERATING TEMPERATURE RANGE IN REFERENCE TO THE READING AT +25°C.

MECHANICAL DIMENSIONS

| PIN | FUNCTION |
|-----|----------------------|
| 1 | N.C. * |
| 7 | GROUND [GND] |
| 8 | RF OUTPUT [CLK] |
| 14 | SUPPLY VOLTAGE [Vdd] |

* Option for ENABLE / DISABLE function can be available for certain models.

Notes:
The metal case is connected to pin 7 and therefore grounded (GND).
^h The package height may vary depending on design, check specification sheet for information.

Metal can DIP-14 TCXO package
20x13mm with 4 pins
DIP14TC-P4 2017-09 C

No scale Unit: mm

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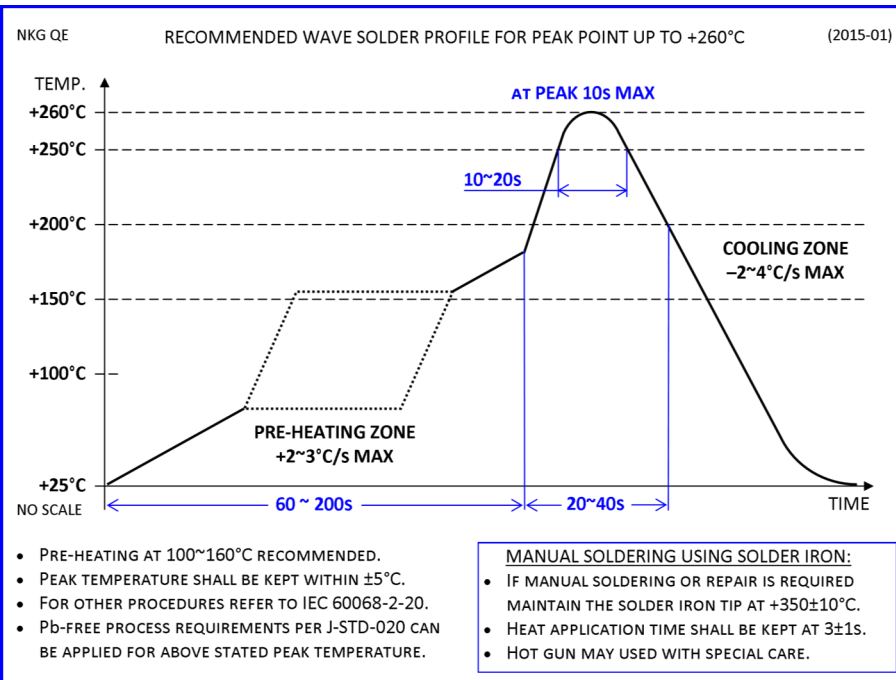
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ENVIRONMENTAL COMPLIANCE INFORMATION

- ROHS 6/6 COMPLIANT (DIRECTIVE 2011/65/EC).
- COMPLIANT TO ROHS 2 (DIRECTIVE 2015/863) (ALSO CALLED ROHS 10).
- 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 ANTISTATIC TUBES.
- QTY PER TUBE: 25PCS
- ALTERNATE PACKAGING IN PLASTIC TRAYS AND FOAM TRAY IS AVAILABLE.

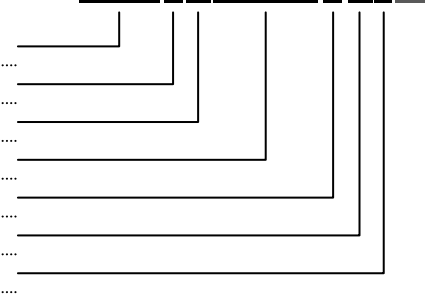
AVAILABLE OPTIONS

| PARAMETER | SYMBOL | TCO12 | TCO15 | TCO18 | TCO19 |
|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| SUPPLY VOLTAGE | V _{DD} | 5.0V ±5% | 3.3V ±5% | 2.8V ±5% | 2.5V ±5% |
| FREQUENCY RANGE [MHZ] | F _N | 1 ~ 55 50 ~ 160 | 1 ~ 55 50 ~ 160 | 1 ~ 55 50 ~ 160 | 1 ~ 55 50 ~ 160 |
| SUPPLY CURRENT (MAX) | I _{DD} | <20mA <35mA | <18mA <32mA | <15mA <25mA | <12mA <25mA |

PART NUMBER SYNTAX

- PART NUMBER FAMILY (REPRESENTS MODEL WITH HCMOS OUTPUT AND PACKAGE SIZE)
- SUPPLY VOLTAGE NOMINATOR (I.E. 2=5V, 5= 3.3V, 8= 2.8V, 9= 2.5V, SEE OPTIONS TABLE)
- FREQUENCY STABILITY CODE (I.E. N= ±5PPM, Q= ±2.5PPM, U= ±1.5PPM, W= ±0.5PPM)
- NOMINAL FREQUENCY (IN MHZ WITH AT LEAST THREE DIGITS AFTER DECIMAL POINT)
- OPERATING TEMPERATURE RANGE CODE (I.E. C= -10~60°, E= -20~70°C, W= -40~85°C)
- OUTPUT SYMMETRY INDICATOR (N= 40/60%, T= 45/55%)
- OUTPUT LOAD DESIGNATOR (I.E. S= STANDARD 15PF, C= 20PF, D= 25PF, E= 30PF)
- PART NUMBER EXTENSION (ONLY FOR NON-STANDARD OR CUSTOMIZED PARTS)

TCO15 U25.000 E NS-EXT



IF THERE IS A LARGE NUMBER OF CODES IN USE THE TABLE ABOVE MAY ONLY SHOW A FEW EXAMPLES.

FOR MORE INFORMATION PLEASE CONTACT US.

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