

CRYSTAL OSCILLATOR UNIT WITH HCMOS OUTPUT IN METAL CAN DIP-14 PACKAGE, SIZE 20 X 13MM WITH 4 PINS.

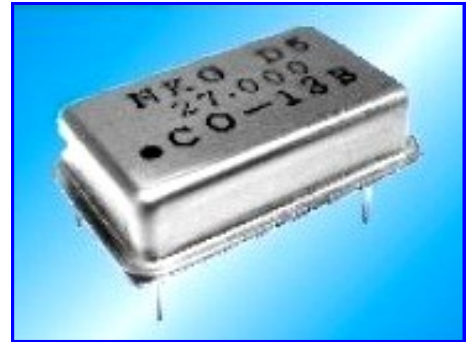
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PRODUCT FEATURES

- OSCILLATOR IN DIP-14 PACKAGE SIZE 20 X 13 X 5MM WITH 4 PINS.
- FREQUENCY RANGE 1 TO 160MHZ.
- TRISTATE FUNCTION AVAILABLE.
- MODERATE JITTER AND PHASE NOISE.

APPLICATIONS

- CPU, GRAPHICS CARD
- ETHERNET, ADSL
- AUDIO & VIDEO EQUIPMENT
- NTSC / PAL ENCODERS



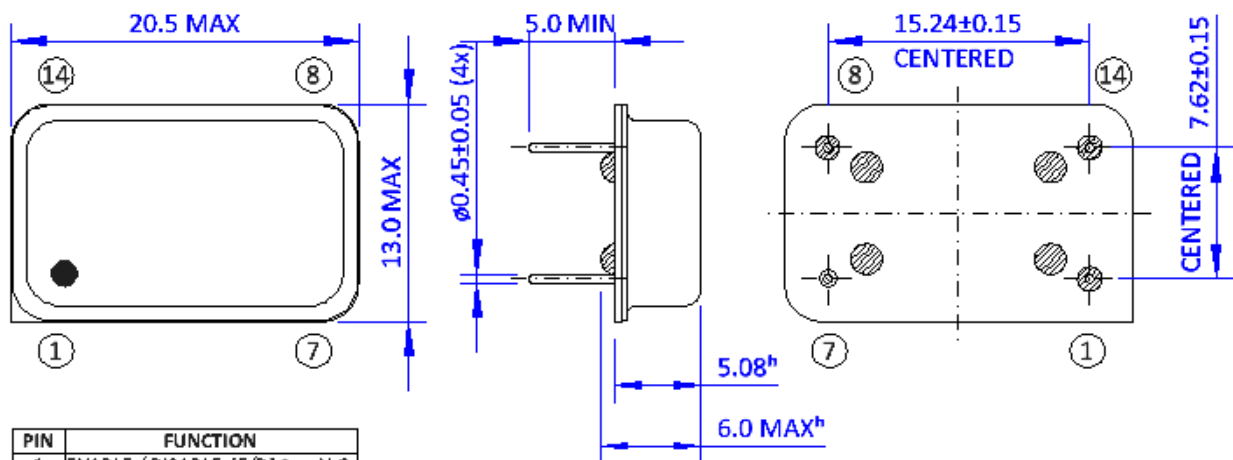
PRODUCT SPECIFICATIONS

PARAMETER	SYMBOL	PARAMETER VALUES / LIMITS	CONDITIONS / REMARKS								
NOMINAL FREQUENCY	F_N	1 ~ 160MHZ	FUNDAMENTAL OR OVERTONE DESIGN								
SUPPLY VOLTAGE RANGE	V_{DD}	1.8V / 2.5V / 3.3V / 5.0V	SEE OPTIONS TABLE ON PAGE 2 FOR DETAILS								
SUPPLY CURRENT CONSUMPTION	I_{DD}	20 ~ 50mA	SEE NOTE 1								
OVERALL FREQUENCY STABILITY	$\Delta f/F_N$	± 20 PPM, ± 25 PPM, ± 50 PPM	SEE NOTE 2, OTHERS AVAILABLE								
OPERATING TEMPERATURE RANGE	T_{OP}	$-10^{\circ}\text{C} \sim +70^{\circ}\text{C}$ OR $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$	OTHER OPTIONS AVAILABLE								
AGING FIRST YEAR	$(\Delta f/F_N)y1$	± 5 PPM	@+25°C								
OUTPUT WAVEFORM / LOAD	— / C_L	HCMOS / 15~50PF	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	<table border="1"> <tr> <td>≤ 6ns</td> <td>$V_{DD}=1.8\text{V}$</td> <td>≤ 8ns</td> <td>$V_{DD}=3.3\text{V}$</td> </tr> <tr> <td>≤ 7ns</td> <td>$V_{DD}=2.5\text{V}$</td> <td>≤ 10ns</td> <td>$V_{DD}=5.0\text{V}$</td> </tr> </table>	≤ 6 ns	$V_{DD}=1.8\text{V}$	≤ 8 ns	$V_{DD}=3.3\text{V}$	≤ 7 ns	$V_{DD}=2.5\text{V}$	≤ 10 ns	$V_{DD}=5.0\text{V}$	@20%~80%~20% V_{DD}
≤ 6 ns	$V_{DD}=1.8\text{V}$	≤ 8 ns	$V_{DD}=3.3\text{V}$								
≤ 7 ns	$V_{DD}=2.5\text{V}$	≤ 10 ns	$V_{DD}=5.0\text{V}$								
OUTPUT SYMMETRY (DUTY CYCLE)	DC	40/60% OR 45/55%	@50% V_{DD}								
TRISTATE FUNCTION (SEE OPTIONS) ENABLE/DISABLE FUNCTION PIN 1	E/D	PIN1 = HIGH OR OPEN -> OUTPUT PIN3 ACTIVE PIN1 = LOW -> OUTPUT PIN3 HIGH IMPEDANCE	<ul style="list-style-type: none"> • OUTPUT HIGH IMPEDANCE = TRI-STATE • PIN1 CAN BE LEFT OPEN = FLOATING 								
STANDBY CURRENT CONSUMPTION	I_{STB}	10 μA	TYPICAL								

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

NOTE 2: OVERALL FREQUENCY STABILITY INCLUDES TOLERANCE @+25°C, DEVIATIONS OVER OPERATING TEMPERATURE RANGE, DEVIATIONS DUE TO OUTPUT LOAD VARIATIONS AND SUPPLY VOLTAGE FLUCTUATIONS.

MECHANICAL DIMENSIONS



PIN	FUNCTION
1	ENABLE / DISABLE [E/D] * or N.C.
7	GROUND [GND]
8	RF OUTPUT [CLK]
14	SUPPLY VOLTAGE [Vdd]

* Check for part numbers to determine one that has this function is available.

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 oscillator package
20x13mm with 4 pins

DIP14CO-P4

2017-09 C

No scale Unit: mm

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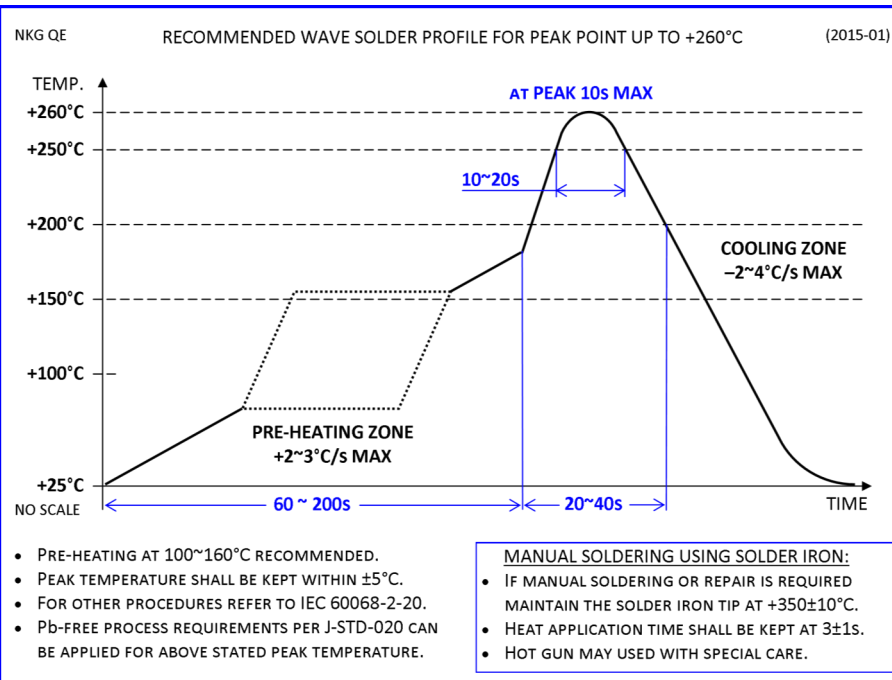
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ENVIRONMENTAL COMPLIANCE INFORMATION

- ROHS 6/6 COMPLIANT (DIRECTIVE 2011/65/EC) AND LEAD-FREE.
- 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.

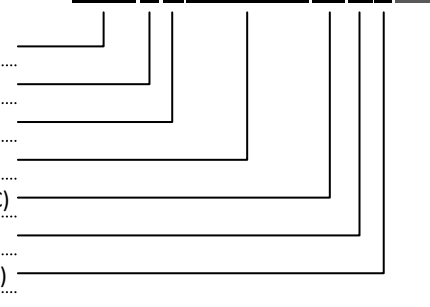
AVAILABLE OPTIONS

PARAMETER	SYMBOL	CO12	CO13	CO14	CO15	CO16	CO17	CO18	CO19
SUPPLY VOLTAGE	V _{DD}	5.0V	5.0V	1.8V	3.3V	3.3V	1.8V	2.5V	2.5V
SUPPLY CURRENT (MAX)	I _{DD}	<50mA	<50mA	<20mA	<35mA	<35mA	<20mA	<30mA	<30mA
STANDBY FUNCTION (TRISTATE)	E/D	NONE	YES	NONE	NONE	YES	YES	NONE	YES

PART NUMBER SYNTAX

- PART NUMBER FAMILY (REPRESENTS MODEL WITH HCMOS OUTPUT AND PACKAGE SIZE)
- SUPPLY VOLTAGE NOMINATOR (I.E. 2=5V, 5= 3.3V, 7= 1.8V, 8= 2.5V, SEE OPTIONS TABLE)
- FREQUENCY STABILITY CODE (I.E. A= ±25PPM, B= ±50PPM, C= ±100PPM, D= ±30PPM)
- NOMINAL FREQUENCY (IN MHZ WITH AT LEAST FOUR DIGITS AFTER DECIMAL POINT)
- OPERATING TEMPERATURE RANGE CODE (I.E. E= -20~70°C, M= -10~70°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, G= 50PF)
- PART NUMBER EXTENSION (ONLY FOR NON-STANDARD OR CUSTOMIZED PARTS)

CO15 B25.0000 MNS-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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