

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

VCT1



PRODUCT FEATURES

- VCTCXO IN DIP-14 PACKAGE SIZE 20 x 13 x 7.5MM 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}	12 ~ 50mA	SEE NOTE 1 AND OPTIONS TABLE ON PAGE 2								
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								
CONTROL VOLTAGE RANGE	V_C	0.5V _{DC} TO 2.5V _{DC}	—								
FREQUENCY PULLING RANGE	$\Delta f/V_C$	$\pm 5.0\text{PPM}$ MIN	DEPENDING ON SUPPLY VOLTAGE & FREQUENCY								
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 & FREQUENCY								
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>$\leq 6\text{ns}$</td> <td>$V_{DD}=2.5\text{V}$</td> <td>$\leq 8\text{ns}$</td> <td>$V_{DD}=3.3\text{V}$</td> </tr> <tr> <td>$\leq 7\text{ns}$</td> <td>$V_{DD}=2.8\text{V}$</td> <td>$\leq 10\text{ns}$</td> <td>$V_{DD}=5.0\text{V}$</td> </tr> </table>	$\leq 6\text{ns}$	$V_{DD}=2.5\text{V}$	$\leq 8\text{ns}$	$V_{DD}=3.3\text{V}$	$\leq 7\text{ns}$	$V_{DD}=2.8\text{V}$	$\leq 10\text{ns}$	$V_{DD}=5.0\text{V}$	@20%~80%~20% V_{DD}
$\leq 6\text{ns}$	$V_{DD}=2.5\text{V}$	$\leq 8\text{ns}$	$V_{DD}=3.3\text{V}$								
$\leq 7\text{ns}$	$V_{DD}=2.8\text{V}$	$\leq 10\text{ns}$	$V_{DD}=5.0\text{V}$								
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	<ul style="list-style-type: none"> • 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	CONTROL VOLTAGE [Vc]
7	GROUND [GND]
8	RF OUTPUT [CLK]
14	SUPPLY VOLTAGE [Vdd]

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 VCTCXO package
20x13mm with 4 pins
DIP14VT-P4 2017-09 C
No scale Unit: mm

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

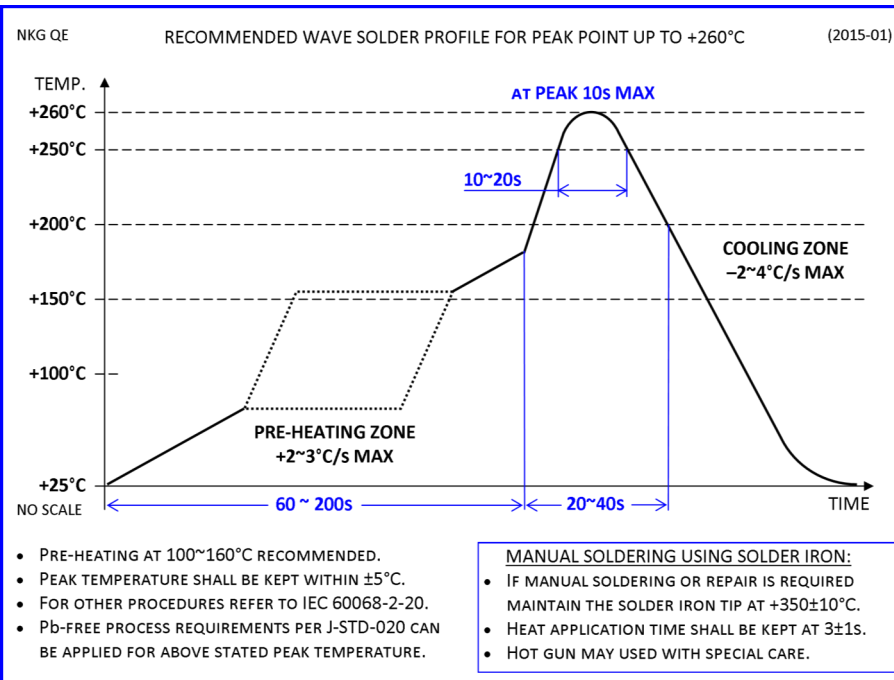
VCT1

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.

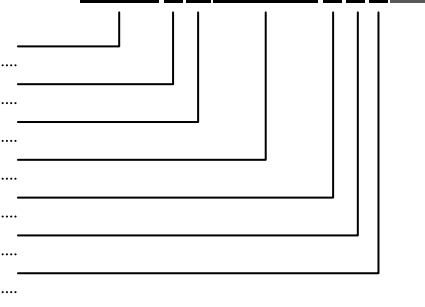
AVAILABLE OPTIONS

PARAMETER	SYMBOL	VCT12		VCT15		VCT18		VCT19	
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}	<30mA	<50mA	<20mA	<35mA	<15mA	<30mA	<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%)
- MINIMUM FREQUENCY PULL (VALUE IN PPM I.E. 5= ±5PPM, 8= ±8PPM, 10= ±10PPM)
- PART NUMBER EXTENSION (ONLY FOR NON-STANDARD OR CUSTOMIZED PARTS)

VCT15U25.000ET5-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.

HONG KONG:
NAKAGAWA ELECTRONICS LIMITED
+852 2389 9201 sales@nkg.com.hk
+852 2341 0001 www.nkg.com.hk

China Shenzhen office:
深圳中川晶体电子有限公司
+86(0)755 2598 2648 sales_sz@nkg.cn
+86(0)755 2598 2390 www.nkg.com.hk

China Suzhou office:
苏州纳美电子有限公司
+86(0)512 8818 7890 sales_nm@nkg.cn
+86(0)512 8818 7889 www.nkg.com.hk