

### OVEN CONTROLLED CRYSTAL OSCILLATOR UNIT IN PCB BASED SMD PACKAGE, SIZE 14 X 9MM.

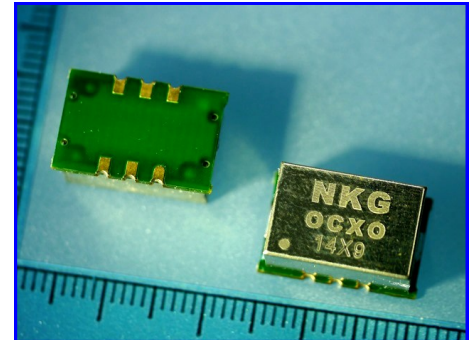
## SOC014

#### PRODUCT FEATURES

- SMALL SMD PACKAGE SIZE 14 X 9 X 6.5MM WITH 6 PADS.
- LOW COST VERSION USING AT-CUT CRYSTAL
- OPTIONAL CONTROL VOLTAGE AND REFERENCE VOLTAGE FUNCTIONS.

#### APPLICATIONS

- TEST EQUIPMENT
- SYNTHESIZERS
- MEASUREMENT DEVICES
- HANDHELD DEVICES



#### PRODUCT SPECIFICATIONS

PARAMETER	SYMBOL	PARAMETER VALUES / LIMITS	CONDITIONS / REMARKS
NOMINAL FREQUENCY	$F_N$	<b>10 ~ 100MHZ</b>	SEE NOTE 1
SUPPLY VOLTAGES	$V_{DD}$	3.3V OR 5.0V	±5%, PLEASE CHOOSE
POWER CONSUMPTION WARM-UP AT STEADY STATE	$P_{WUP}$	<2.5W	—
	$P_{OP}$	<1.0W	@+25°C
WARM UP TIME	$t_{WUP}$	<180S	TO 5PPB FOR SC-CUT, TO 50PPB FOR AT-CUT
OPERATING TEMPERATURE RANGE	$T_{OP}$	-20~+70°C / -30~+75°C / -40~85°C	OTHER OPTIONS POSSIBLE
OUTPUT WAVEFORM LVTTLL	$V_{OH}/V_{OL}$	≥2.4V <sub>DC</sub> / ≤0.4V <sub>DC</sub>	@ OUTPUT LOAD 5 TTL INPUTS
OUTPUT WAVEFORM HCMOS	$V_{OH}/V_{OL}$	≥90%V <sub>DD</sub> / ≤10%V <sub>DD</sub>	@ OUTPUT LOAD CL = 15PF
OUTPUT WAVEFORM SINEWAVE	$V_{P-P}$	6dBm MIN / 10dBm MAX	@ OUTPUT LOAD RL = 50Ω

NOTE 1: TYPICAL AVAILABLE FREQUENCIES ARE: 10MHZ, 12.8MHZ, 13.0MHZ 15.36MHZ, 16.384MHZ, 19.2MHZ, 19.44MHZ, 20MHZ, 25MHZ, 26MHZ, 50MHZ,

#### FREQUENCY CHARACTERISTICS

PARAMETER	SYMBOL	AT-CUT CRYSTAL	CONDITIONS / REMARKS
FREQ. STABILITY OVER $T_{OP}$ (NOTE 1)	$\Delta f/F_N$	±50PPB / ±100PPB / ±200PPB	FOR >40MHZ ONLY ±200PPB OR GREATER
SHORT TERM STABILITY	$(\Delta f/F_N)/s$	±1.0PPB/S	—
AGING RATE	DAILY	$(\Delta f/F_N)/d$	±5ppb / ±10ppb / ±50ppb
	ANNUALLY	$(\Delta f/F_N)/y$	±50ppb / ±100ppb / ±500ppb
VOLTAGE STABILITY ( $V_{DD}±5\%$ )	$(\Delta f/F_N)/V$	±0.5PPB	@+25°C
FREQUENCY ADJUSTMENT (NOTE 2)	$(\Delta f/F_N)/V_C$	±5 ~ 10PPM	OVER VOLTAGE CONTROL VC RANGE
PHASE NOISE @10HZ	$j_{RMS}$	-110DBC/HZ	
TYPICAL EXAMPLE FOR @100HZ		-133DBC/HZ	
20MHZ UNIT @1KHZ		-148DBC/HZ	
@10KHZ		-150DBC/HZ	

NOTE 1: FREQUENCY STABILITY IS THE DEVIATIONS OVER OPERATING TEMPERATURE RANGE  $T_{OP}$  IN REFERENCE TO FREQUENCY READING @+25°C.

NOTE 2: FREQUENCY ADJUSTMENT CAPABILITY APPLIES FOR UNITS WITH THE OPTION OF CONTROL VOLTAGE  $V_C$  FUNCTION (REFER TO BELOW TABLE).

NOTE 3: FOR THE PARAMETERS IN ABOVE TABLE IS THE BEST PERFORMANCE SHOWN, OTHER OPTIONS ARE AVAILABLE, SOME DESIGNS MAY REQUIRE WIDER TOLERANCES.

#### OPTIONS FOR 3.3V AND 5.0V SUPPLY VOLTAGES

PARAMETER	SYMBOL	FOR 3.3V		FOR 5.0V	
CONTROL VOLTAGE RANGE	$V_C$	0 ~ 2.8V <sub>DC</sub>	0 ~ 3.3V <sub>DC</sub>	0 ~ 4.0V <sub>DC</sub>	0 ~ 5.0V <sub>DC</sub>
CONTROL CENTER VOLTAGE	$V_{CEN}$	1.4V <sub>DC</sub>	1.65V <sub>DC</sub>	2.0V <sub>DC</sub>	2.5V <sub>DC</sub>
REFERENCE VOLTAGE OUTPUT	$V_{REF}$	2.8V <sub>DC</sub>	N/A	4.0V <sub>DC</sub>	N/A

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SOCO14

MECHANICAL DIMENSIONS

PIN	FUNCTION
1	CONTROL VOLTAGE [Vc] * or N.C.
2	OUTPUT ENABLE [E/D] * or N.C.
3	GROUND [GND] **
4	RF OUTPUT [CLK]
5	REFERENCE VOLTAGE [Vref] * or N.C.
6	SUPPLY VOLTAGE [Vdd]

\* Check specification sheet if the option is available.  
\*\* The metal lid is connected to ground (GND).

PCB based SMD oscillator package  
14x9mm with 6 pads (metal lid)  
OCS1409-P6 2017-09 C  
No scale Unit: mm

ENVIRONMENTAL COMPLIANCE INFORMATION

- ROHS COMPLIANT PER (DIRECTIVE 2011/65/EC).
- COMPLIANT TO ROHS 2 (DIRECTIVE 2015/863) (ALSO CALLED ROHS 10).
- NONE-USE OF SVHCS PER REACH IS CURRENTLY GIVEN, CONTINUOUSLY MONITORED AND UPDATED AS THE COMMISSION ISSUES NEW RELEASES.
- PRODUCT DOES NOT CONTAIN PVC (POLYVINYL CHLORIDE).
- PRODUCT DOES NOT CONTAIN PFOS/PFOA NOR BEING SAME USED TO MANUFACTURE THE COMPONENTS OF THIS PRODUCT.
- NONE-USE OF CONFLICT MINERALS PER THE DODD-FRANK WALL STREET REFORM AND CONSUMER PROTECTION ACT (WALL STREET REFORM ACT).
- MOISTURE SENSITIVITY LEVEL (MSL) 1 PER J-STD-020C.

PACKAGING INFORMATION

- PACKAGING IN TAPE & REEL IN COMPLIANCE TO EIA-481.
- QTY PER REEL: 500PCS
- REEL DIA A=330MM.
- EMBOSSED CARRIER TAPE WIDTH W = 24MM.
- COMPONENT PITCH P1 = 16MM.
- ALTERNATE PACKAGING IN ESD CONFORM FOAM TRAYS IS AVAILABLE.

PART NUMBER SYNTAX

PART NUMBER FAMILY (REPRESENTS PRODUCT MODEL AND PACKAGE SIZE)

SUPPLY VOLTAGE NOMINATOR (I.E. 50= 5.0V, 33= 3.3V)

FREQUENCY STABILITY CODE (I.E. B=±50PPB, C=±100PPB, D=±30PPB)

NOMINAL FREQUENCY (IN MHZ WITH AT LEAST THREE DIGITS AFTER DECIMAL POINT)

OPERATING TEMPERATURE RANGE (I.E. E= -20~70°C, L= -30~75°C, W= -40~85°C)

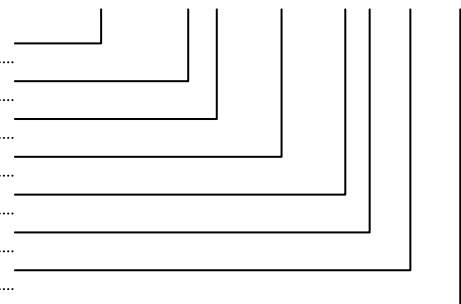
OUTPUT WAVE FORM INDICATOR (H= HCMOS, S= TRUE SINE WAVE, T= TTL OUTPUT)

FREQUENCY MINIMUM PULLABILITY (OPTIONAL VC FUNCTION) (1.0= 1.0PPM MIN)

REFERENCE VOLTAGE OUTPUT INDICATOR (OPTIONAL, EXTENSION ADDED IF AVAILABLE)

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

SOCO14 33 B10.000 E H1.0-RV



FOR MORE INFORMATION PLEASE CONTACT US.

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