

CRYSTAL OSCILLATOR UNIT WITH HCMOS OUTPUT IN CERAMIC SEAM SEAL SMD PACKAGE, SIZE 2.5 x 2.0MM.

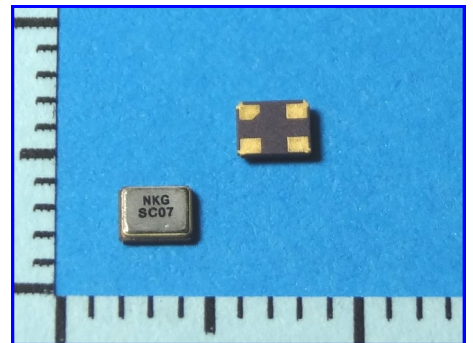
SCO7

PRODUCT FEATURES

- SMALL SMD PACKAGE SIZE 2.5 x 2.0 x 1.0MM WITH 4 PADS.
- HIGHLY RELIABLE SEAM SEAL PACKAGE AND LOW AGING.
- EXCELLENT HEAT AND SHOCK RESISTANCE.
- AUTOMOTIVE GRADE COMPLIANT TO AEC-Q200 IS AVAILABLE.

APPLICATIONS

- MOBIL COMMUNICATION
- LAN, WLAN, MODEMS
- PDA, SMARTPHONE
- USB AND HANDHELD DEVICES



PRODUCT SPECIFICATIONS

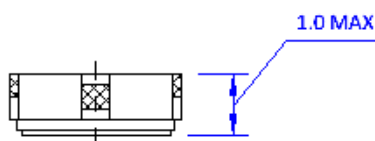
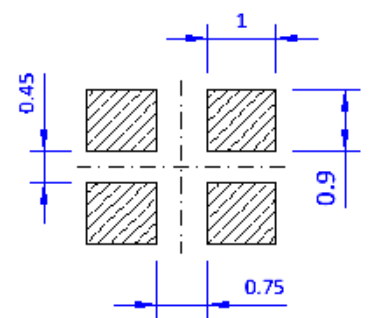
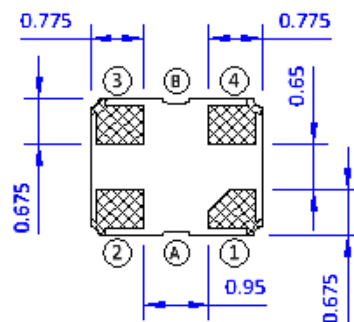
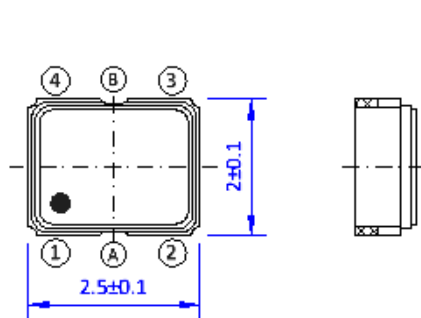
PARAMETER	SYMBOL	PARAMETER VALUES / LIMITS	CONDITIONS / REMARKS								
NOMINAL FREQUENCY	F_N	1.0 ~ 130MHz	FUNDAMENTAL OR 3RD OVERTONE DESIGN								
SUPPLY VOLTAGE RANGE	V_{DD}	1.8V / 2.5V / 3.3V	MORE AVAILABLE, PLEASE CONTACT US								
SUPPLY CURRENT CONSUMPTION	I_{DD}	<25mA	TYPICAL, SEE NOTE 1								
OVERALL FREQUENCY STABILITY	$\Delta f/F_N$	± 20 PPM, ± 25 PPM, ± 50 PPM	SEE NOTE 2, OTHERS AVAILABLE								
OPERATING TEMPERATURE RANGE	T_{OP}	-10°C ~ +70°C OR -40°C ~ +85°C	OTHER OPTIONS AVAILABLE								
AGING FIRST YEAR	$(\Delta f/F_N)y1$	± 3 PPM	@+25°C								
OUTPUT WAVEFORM / LOAD	— / C_L	HCMOS / 15PF	TYPICAL MOST COMMON, OTHERS AVAILABLE								
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>≤ 8ns</td> <td>below 16MHz</td> <td>≤ 4ns</td> <td>40~100MHz</td> </tr> <tr> <td>≤ 5ns</td> <td>16~40MHz</td> <td>≤ 2ns</td> <td>above 100MHz</td> </tr> </table>	≤ 8 ns	below 16MHz	≤ 4 ns	40~100MHz	≤ 5 ns	16~40MHz	≤ 2 ns	above 100MHz	@10%~90%~10% V_{DD} , $V_{DD}=3.3V$
≤ 8 ns	below 16MHz	≤ 4 ns	40~100MHz								
≤ 5 ns	16~40MHz	≤ 2 ns	above 100MHz								
OUTPUT SYMMETRY (DUTY CYCLE)	DC	40/60% OR 45/55%	@50% V_{DD}								
STANDBY FUNCTION (ENABLE/DISABLE ON 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 μ A	TYPICAL								

NOTE 1: CURRENT CONSUMPTION IS TYPICAL FOR 3.3V, AT LOWER SUPPLY VOLTAGES LESS CONSUMPTION.

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

RECOMMENDED LAND PATTERN



PAD	FUNCTION
1	ENABLE / DISABLE [E/D]
2	GROUND [GND]
3	RF OUTPUT [CLK]
4	SUPPLY VOLTAGE [Vdd]
A	SIDE PADS
B	shall not be connected!

Ceramic seam seal oscillator package 2.5x2.0mm with 4 pads

CXO22M 2015-10 B

No scale Unit: mm

CRYSTAL OSCILLATOR UNIT WITH HCMOS OUTPUT IN CERAMIC SEAM SEAL SMD PACKAGE, SIZE 2.5 X 2.0MM.

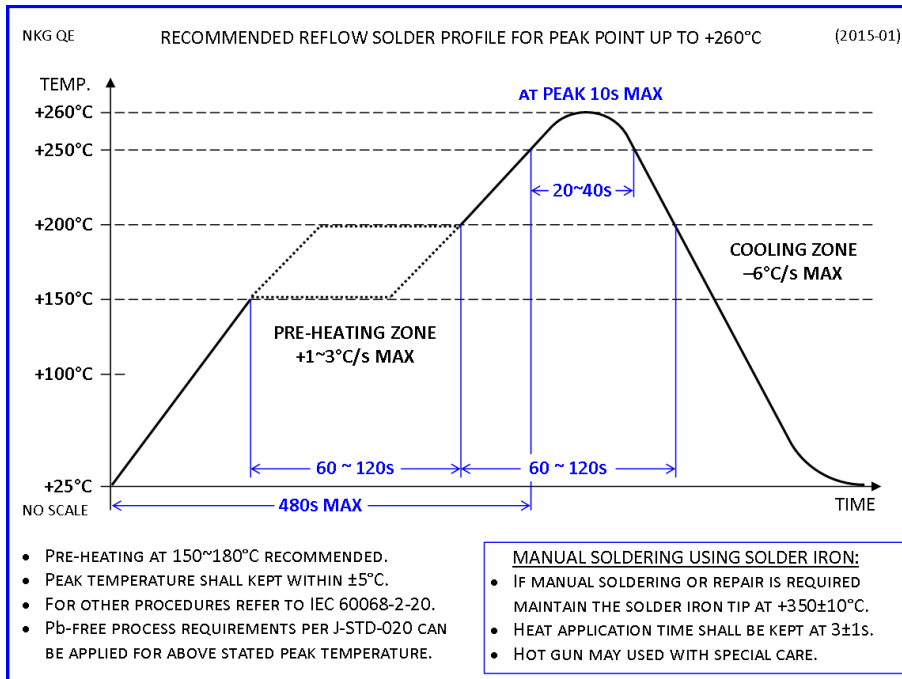
SCO7

ENVIRONMENTAL COMPLIANCE INFORMATION

- ROHS 6/6 COMPLIANT (DIRECTIVE 2011/65/EC) AND LEAD-FREE.
- COMPLIANT TO ROHS 2 (DIRECTIVE 2018/863) (ALSO CALLED ROHS10).
- HALOGEN-FREE PER DEFINITION OF IEC 61249-2-21 2033.
- NONE-USE OF SVHCS PER REACH IS CURRENTLY GIVEN, CONTINUOUSLY MONITORED AND UPDATED AS THE COMMISSION ISSUES NEW RELEASES.
- 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.
- NONE-USE OF CONFLICT MINERALS PER THE DODD-FRANK WALL STREET REFORM AND CONSUMER PROTECTION ACT (WALL STREET REFORM ACT).

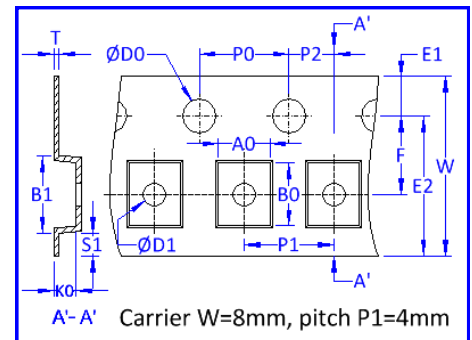


SOLDERING RECOMMENDATIONS



PACKAGING INFORMATION

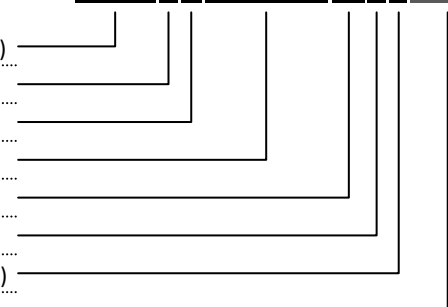
- PACKAGING IN TAPE & REEL IN COMPLIANCE TO EIA-481.
- QTY PER REEL: 3,000PCS
- REEL DIA A=180MM.
- EMBOSSED CARRIER TAPE WIDTH W = 8MM.
- COMPONENT PITCH P1 = 4MM.



PART NUMBER SYNTAX

- PART NUMBER FAMILY (REPRESENTS PRODUCT MODEL W/ CMOS OUTPUT AND PACKAGE SIZE)
- SUPPLY VOLTAGE NOMINATOR (I.E. 6= 3.3V, 7= 1.8V, 8= 2.8V, 9= 2.5V)
- FREQUENCY STABILITY CODE (I.E. A= $\pm 25\text{PPM}$, B= $\pm 50\text{PPM}$, C= $\pm 100\text{PPM}$, D= $\pm 30\text{PPM}$)
- NOMINAL FREQUENCY (IN MHZ WITH AT LEAST FOUR DIGITS AFTER DECIMAL POINT)
- OPERATING TEMPERATURE RANGE CODE (I.E. M= $-10 \sim 70^\circ\text{C}$, W= $-40 \sim 85^\circ\text{C}$)
- 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)

SCO7 6 B 25.0000 MTS-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