

**32.768kHz CRYSTAL OSCILLATOR UNIT WITH HCMOS OUTPUT  
IN CERAMIC SEAM SEAL SMD PACKAGE, SIZE 2.0 x 1.6MM.**

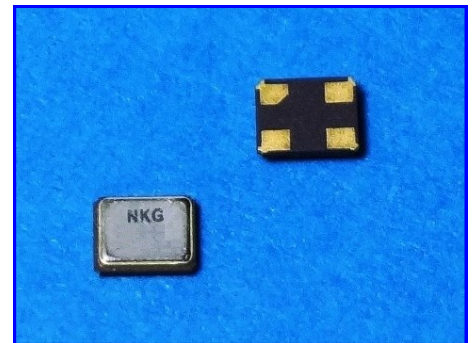
**SCO8W\_32k768**

**PRODUCT FEATURES**

- SMD PACKAGE SIZE 2.0 x 1.6 x 0.8MM WITH 4 PADS.
- WIDE SUPPLY VOLTAGE RANGE FROM 1.8 TO 3.3V—IDEAL FOR BATTERY USE.
- LOW CURRENT CONSUMPTION <100µA — IDEAL FOR PORTABLE DEVICES.
- AUTOMOTIVE GRADE COMPLIANT TO AEC-Q200 IS AVAILABLE.

**APPLICATIONS**

- RTC SOURCE APPLICATIONS
- PORTABLE DEVICES.
- TIMER AND CONTROLLERS.
- MOBIL COMMUNICATION.



**PRODUCT SPECIFICATIONS**

PARAMETER	SYMBOL	PARAMETER VALUES / LIMITS		CONDITIONS / REMARKS	
NOMINAL FREQUENCY	$F_N$	<b>32.768kHz</b>		FUNDAMENTAL DESIGN	
SUPPLY VOLTAGE RANGE	$V_{DD}$	1.8 ~ 3.3V		DEVIATION OF ±10% AT BOTH ENDS ALLOWED	
SUPPLY CURRENT CONSUMPTION	$I_{DD}$	<100µA		DEPENDENT ON SUPPLY VOLTAGE	
FREQUENCY STABILITY BEST STANDARD	$\Delta f/f$	±20PPM	±25PPM	±30PPM	±50PPM
		±30PPM	±50PPM	±50PPM	±100PPM
OPERATING TEMPERATURE RANGE	$T_{OP}$	-30°C~+85°C	-40°C~+85°C	-40°C~+105°C	-40°C~+125°C
AGING FIRST YEAR	$(\Delta f/f)/y_1$	±3PPM		@+25°C	
OUTPUT WAVEFORM / LOAD	— / $C_L$	HCMOS / 15PF MAX		—	
OUTPUT VOLTAGE LEVELS	$V_{OH}/V_{OL}$	≥90% $V_{DD}$ / ≤10% $V_{DD}$		—	
RISE AND FALL TIMES	$t_R, t_F$	≤30ns		10%~90%~10% $V_{DD}$	
OUTPUT SYMMETRY (DUTY CYCLE)	DC	45/55%		@50% $V_{DD}$	
STANDBY FUNCTION (ENABLE/DISABLE ON PIN 1)	E/D	PIN 1 = HIGH OR OPEN -> OUTPUT PIN 3 ACTIVE PIN 1 = LOW -> OUTPUT PIN 3 HIGH IMPEDANCE		OUTPUT HIGH IMPEDANCE = TRI-STATE	
STANDBY CURRENT CONSUMPTION	$I_{STB}$	<10µA		—	

NOTE: OVERALL FREQUENCY STABILITY INCLUDES TOLERANCE @+25°C, DEVIATIONS OVER OPERATING TEMPERATURE RANGE, OTHER OPTIONS OF STABILITY AND OPERATING TEMPERATURE ARE AVAILABLE AS WELL.

**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 2.0x1.6mm with 4 pads  
**CXO21M** 2015-11 B  
 No scale Unit: mm

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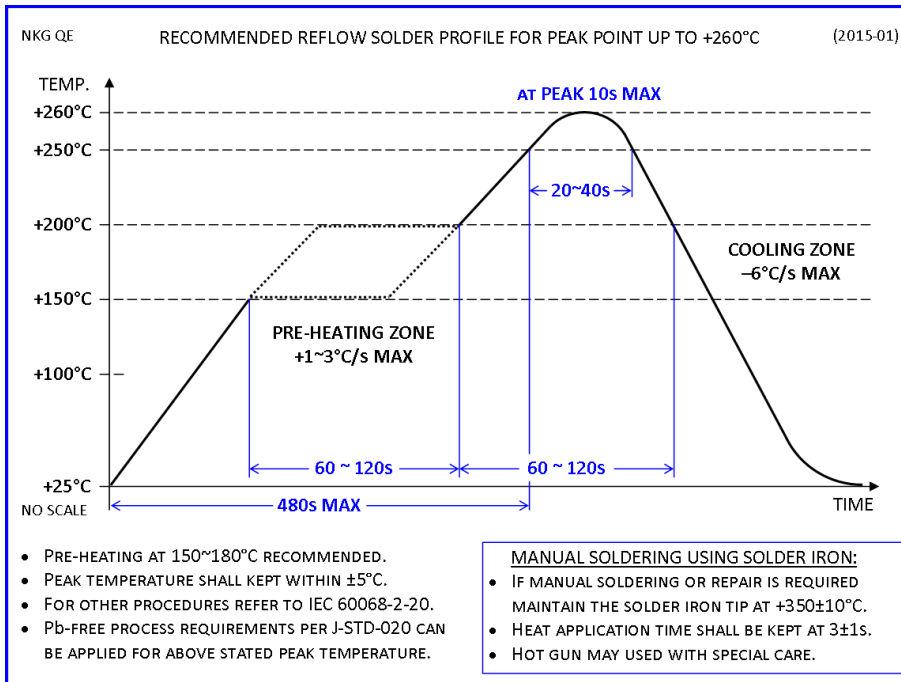
SCO8W\_32k768

ENVIRONMENTAL COMPLIANCE INFORMATION

- ROHS 6/6 COMPLIANT (DIRECTIVE 2011/65/EC) AND LEAD-FREE.
- COMPLIANT TO ROHS 2/3 (DIRECTIVE 2015/863) (ALSO CALLED ROHS 10).
- 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.
- MOISTURE SENSITIVITY LEVEL (MSL) 1 PER J-STD-020C.

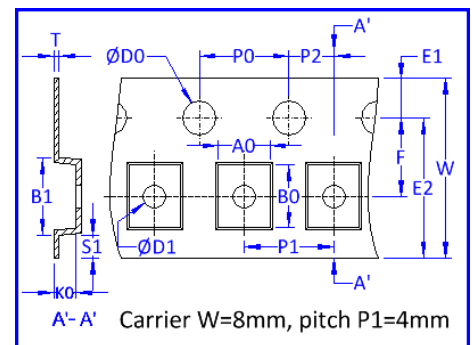


SOLDERING RECOMMENDATIONS



PACKAGING INFORMATION

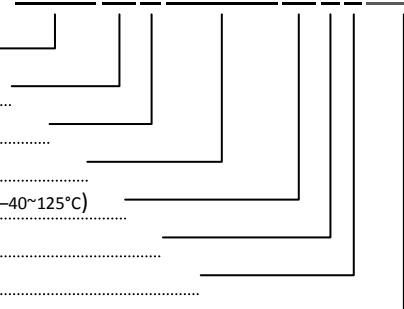
- PACKAGING IN TAPE & REEL IN COMPLIANCE TO EIA-481.
- QTY PER REEL: 3,000PCS
- REEL DIA A=180MM.
- EMBOSSED CARRIER TAPE WIDTH W = 8MM.
- COMPONENT PITCH P1 = 4MM.



PART NUMBER SYNTAX

- PART NUMBER FAMILY (REPRESENTS PRODUCT MODEL W/ CMOS OUTPUT AND PACKAGE SIZE)
- SUPPLY VOLTAGE NOMINATOR (W= WIDE SUPPLY VOLTAGE RANGE, SEE SPECIFICATIONS)
- FREQUENCY STABILITY CODE (I.E. A= ±25PPM, B= ±50PPM, C= ±100PPM, D= ±30PPM), G= ±20PPM)
- NOMINAL FREQUENCY (IN KHZ WITH THREE DIGITS AFTER DECIMAL POINT)
- OPERATING TEMPERATURE RANGE CODE (I.E. M=-10~70°C, V=-30~85°C, W=-40~85°C, Y=-40~105°C, Z=-40~125°C)
- OUTPUT SYMMETRY INDICATOR (N= 40/60%, T= 45/55%)
- OUTPUT LOAD DESIGNATOR (I.E. A= 10PF, S= STANDARD 15PF, C= 20PF, D= 25PF, E= 30PF)
- PART NUMBER EXTENSION (USED ONLY FOR NON-STANDARD OR CUSTOMIZED SPECIFICATIONS)

SCO8 W B 32k768 W T S -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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