

**RoHS Compliant  
Pb - Lead Free**

Ltr	Revisions	Date	Appr

**Electrical Specifications:**

Frequency Range	32.768				KHz
Frequency Stability	±20 ~ ±100				ppm
Aging per Year	±3				ppm Max.
Operating Temperature Range	Standard	-10 ~ +70			°C
	Extended	-40 ~ +85			
Storage Temperature Range	-55 ~ +125				
Supply Voltage	1.8 ± 5%	2.5 ± 5%	3.3 ± 10%	1.62 ~ 3.63	VDD
Input Current	1.5	2.5	3.5	3.5	mA Max.
Output Voltage	Logic High (Voh)	90%			VDD Min.
	Logic Low (Vol)	10%			VDD Max.
Output Symmetry (Duty Cycle)	Standard	40 ~ 60 ( at 50% VDD)			%
	Tight	45 ~ 55 ( at 50% VDD)			
Output Load	15				pF Max.
Rise and Fall Time	200				ns Max.
Enable-Disable Function	Tri-State				

Temperature stability is Inclusive of all conditions:

Calibration Tolerance at +25°C, frequency stability over the operating temperature range, supply voltage change, output load change, shock, vibration, and 1st year aging at +25°C.



Accurate Kinetic Energy

No.11-3 Jianguo Rd., T.E.P.Z. 42760 Taiwan

All dimensions are millimeters.

CAD: TCR

Review: EG

Appr: JL

Page: 1/4 Date: July 1,2020

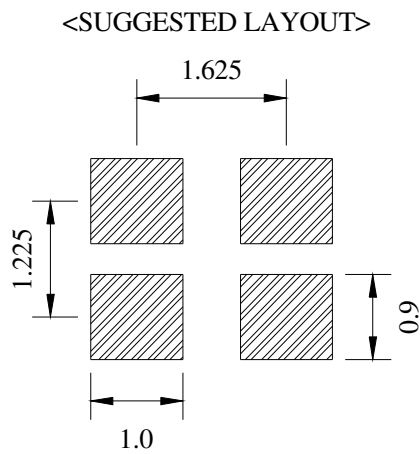
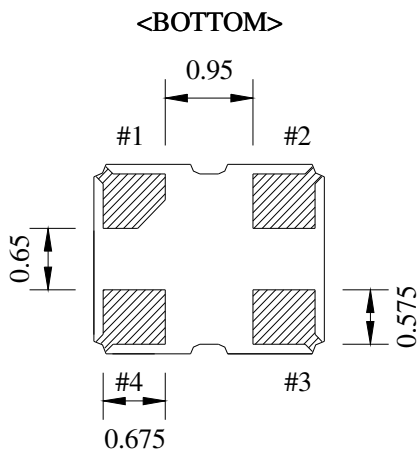
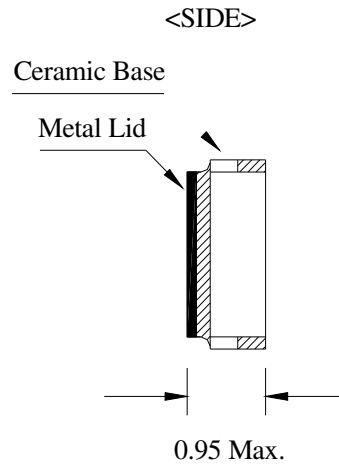
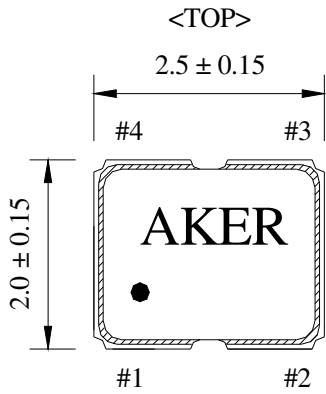
Specification Title:

**HCMOS Output Clock Oscillator  
Time of Day - 32.768KHz  
2.0 x 2.5 millimeter Surface Mount  
General Product Specification**

Part Number:

**S2-32.768 KHz Series**

## Mechanical Outline and Solder Pad Layout:



Pin Connection	
PIN No.	Connection
#1	Enable/Disable
#2	GND
#3	Output
#4	VDD

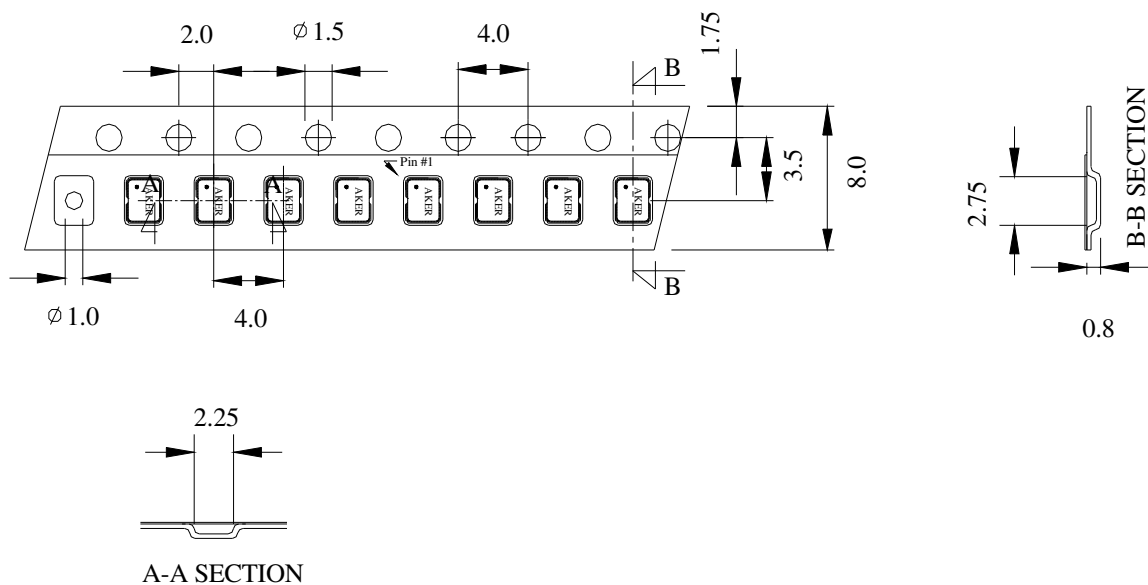
Enable/Disable Function	
PIN #1	PIN #3
HIGH or OPEN	Operating
LOW	High Impedance

Package is Seam Sealed Ceramic-Metal.

Terminator Pads are Ni/Au.

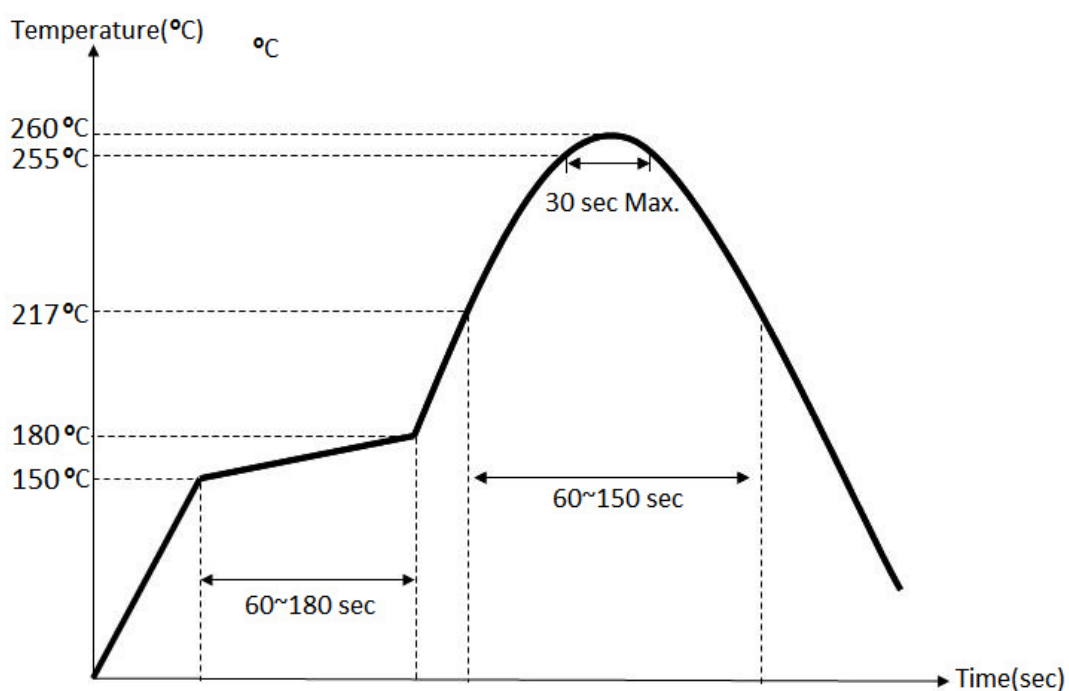
Dimensions are millimeters.

## Carrier Tape Dimensions:



Dimensions are millimeters.

## Solder Reflow Characteristics:



## How to build a Part Number:

Series	S	Parameter
Package	2	2.0 x 2.5 mm
Supply Voltage	33	+3.3 VDD ± 10%
	25	+2.5 VDD ± 5%
	18	+1.8 VDD ± 5%
	M	+1.62 ~ +3.63 VDD
Temperature Stability	10	±100 ppm
	05	±50 ppm
	025	±25 ppm
	020	±20 ppm
Duty Cycle	See Notes	40%~60%
	T	45%~55%
Frequency	32.768K	Hz
Temperature Range	See Notes	-10 ~ +70 °C
	X	-40 ~ +85 °C
Output Load	15	pF Max
Packaging	M	250pcs Reel
	R	1000pcs Reel
	R3	3000pcs Reel

### Part Number Example:

S23310-32.768K-X-15-R

S2: 2.0 x 2.5 mm SMD Package

33: +3.3±10% VDD Supply Voltage

10: ±100 ppm Temperature Stability

32.768 KHz Nominal Frequency

X: -40 ~ + 85°C Extended Temperature Range

15: 15 pF Max Output Load

R: Tape and Reel Packaging - 1000pcs Reel

### Notes:

- 1- Standard Duty Cycle and Temperature Range do not need to be included in Part Number description.
- 2- Product is shipped in Tape and Reel configuration.
- 3- Quantities less than 250pcs are shipped in tape only.
- 4- Specification subject to change without notice.