

Features
<ul style="list-style-type: none"> ±20ppm (Tolerance) Available Ultra-Miniature Package Tape and Reel

Applications
<ul style="list-style-type: none"> Real Time Clock Measurement instruments Wireless Applications


Part Numbering Guide
SWS 31 2 12 D 48 - 32.768K

 SUNTSU WATCH SMT
 CRYSTAL

3.2mm x 1.5mm

2 PAD

LOAD CAPACITANCE

 12 : 12.5pF
 9 : 9.0pF
 7 : 7.0pF
 6 : 6.0pF

FREQUENCY TOLERANCE

 D : ±20ppm
 F : ±10ppm

OPERATING TEMPERATURE RANGE

 16 : -10°C - +60°C
 48 : -40°C - +85°C

FREQUENCY
 kHz

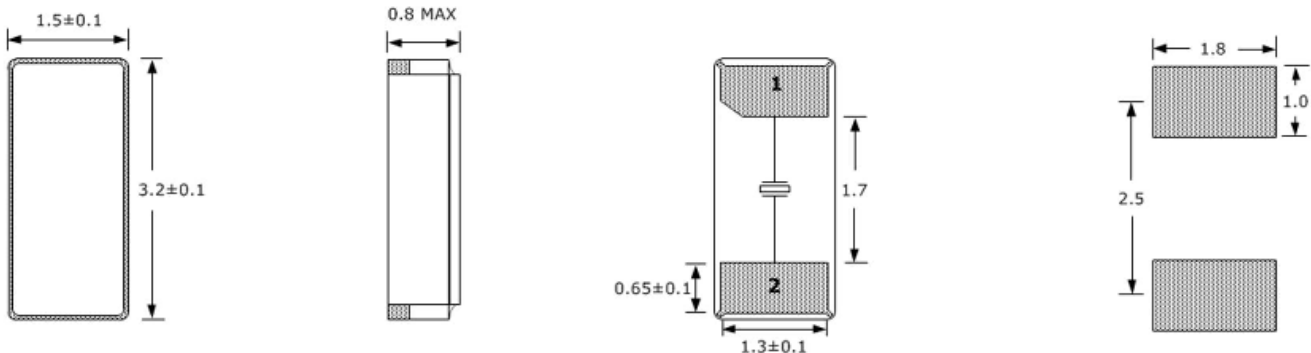

Cage Code: 4GUT4

To customize your parameters contact a Suntsu representative.

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Range	kHz		32.768		
Frequency Tolerance at +25°C	ppm	-20		+20	See part numbering guide for options.
Frequency Stability vs. Aging	ppm	-3		+3	First year @ +25°C.
Frequency Coefficient (β)	ppm/T ²	-0.040	-0.030	-0.020	
Operating Temperature	°C	-40		+85	See part numbering guide for options.
Turnover Temperature	°C	+20	+25	+30	
Storage Temperature	°C	-55		+125	
Load Capacitance	pF	6		12.5	See part numbering guide for options.
Shunt Capacitance	pF		1.4		
Drive Level	μW			1	
Insulation Resistance	MΩ	500			@ 100VDC ± 15V.
Equivalent Series Resistance	kΩ			70	

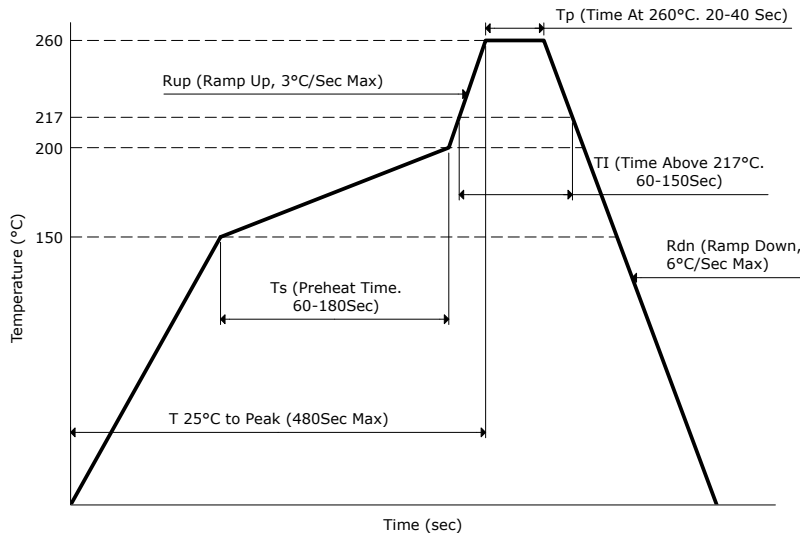
Outline Drawing & Recommended Land Pattern

All dimensions are in millimeters (mm) unless otherwise noted. Drawings are not to scale.

**ELECTRODE ARRANGEMENT
 (BOTTOM VIEW)**


Environmental Specifications		Mechanical Specifications	
Temperature Cycling	MIL-STD-883, Method 1010, Condition B	Mechanical Shock	MIL-STD-202, Method 213, Condition B
Fine Leak Test	MIL-STD-883, Method 1014, Condition A	Vibration	MIL-STD-883, Method 2007, Condition A
Gross Leak Test	MIL-STD-883, Method 1014, Condition C	Resistance to Soldering Heat	MIL-STD-202, Method 210, Condition K
Moisture Resistance	MIL-STD-883, Method 1004	Resistance to Solvents	MIL-STD-202, Method 215
Moisture Sensitivity	J-STD-020, MSL 1	Solderability	MIL-STD-883, Method 2003

Reflow Profile & Part Marking



Frequency in kHz
 Line 1: $\frac{327}{Y} \frac{WW}{}$
 ↑ ↑
 Year Week

Tape And Reel Dimensions

All dimensions are in millimeters (mm) unless otherwise noted. Drawings are not to scale.

3,000pcs / Reel

