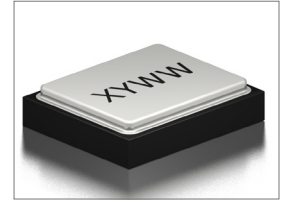


Features
<ul style="list-style-type: none"> ±20ppm (Tolerance) Available Ultra-Miniature Package Tape and Reel

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



Part Numbering Guide

SWS 10 2 12 D 48 - 32.768K

SUNTSU WATCH SMT
CRYSTAL

1.2mm x 1.0mm

2 PAD

LOAD CAPACITANCE

12 : 12.5pF

9 : 9.0pF

7 : 7.0pF

6 : 6.0pF

FREQUENCY TOLERANCE

D : ±20ppm

FREQUENCY
kHz

OPERATING TEMPERATURE RANGE

16 : -10°C - +60°C

48 : -40°C - +85°C



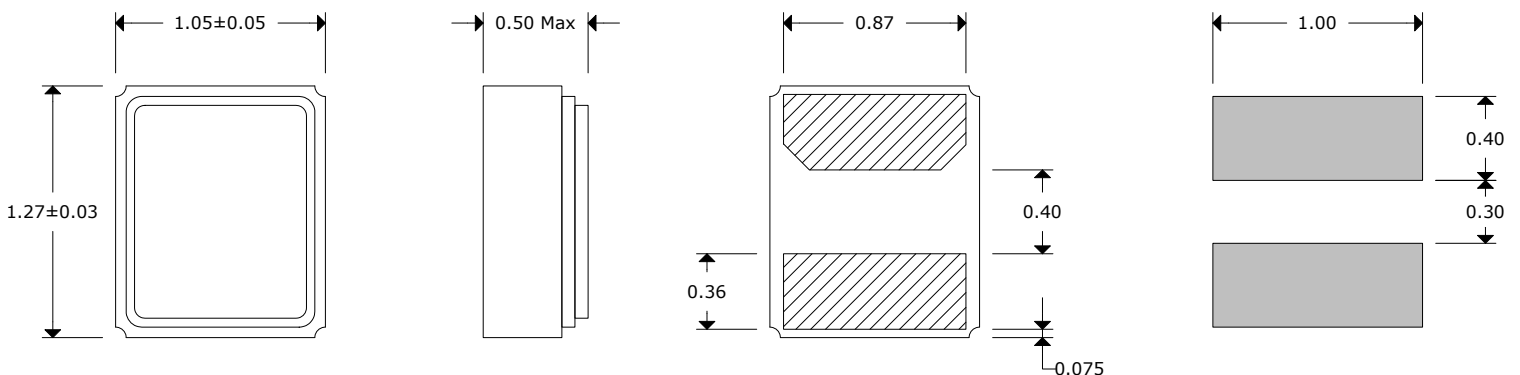
Cage Code: 4GUT4

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	
Frequency Stability vs. Aging	ppm	-5		5	First year @ +25°C.
Frequency Coefficient (β)	ppm/T ²	-0.0324	-0.036	-0.0396	
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			12.5	See part numbering guide for options.
Shunt Capacitance	pF		1.4		
Drive Level	μW		0.1	0.3	
Insulation Resistance	MΩ	500			@ 100VDC ± 15V.
Equivalent Series Resistance	kΩ			90	

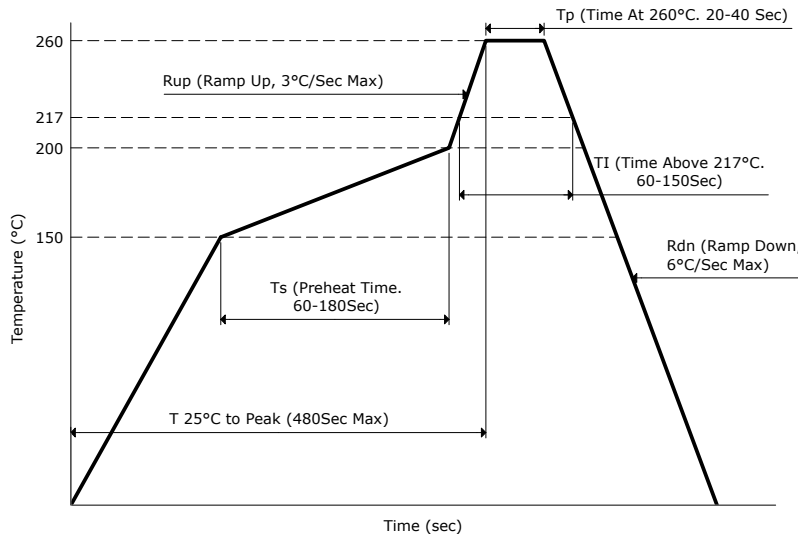
Outline Drawing & Recommended Land Pattern

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



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



Line 1 : **X Y W W**

Load Capacitance

A : 6pF ↑ ↑ ↑

B : 7pF ↑ ↑ ↑

J : 9pF ↑ ↑ ↑

F : 12.5pF ↑ ↑ ↑

Week

Year

Tape And Reel Dimensions

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

5,000pcs / Reel

