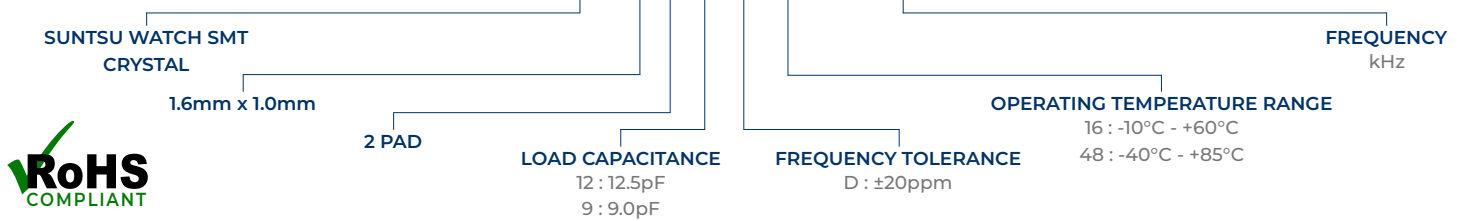


**Features**

- $\pm 20$ ppm (Tolerance) Available
- Ultra-Miniature Package
- Tape and Reel

**Applications**

- Real Time Clock
- Measurement instruments
- Wireless Applications


**Part Numbering Guide**
**SWS 11 2 12 D 48 - 32.768K**


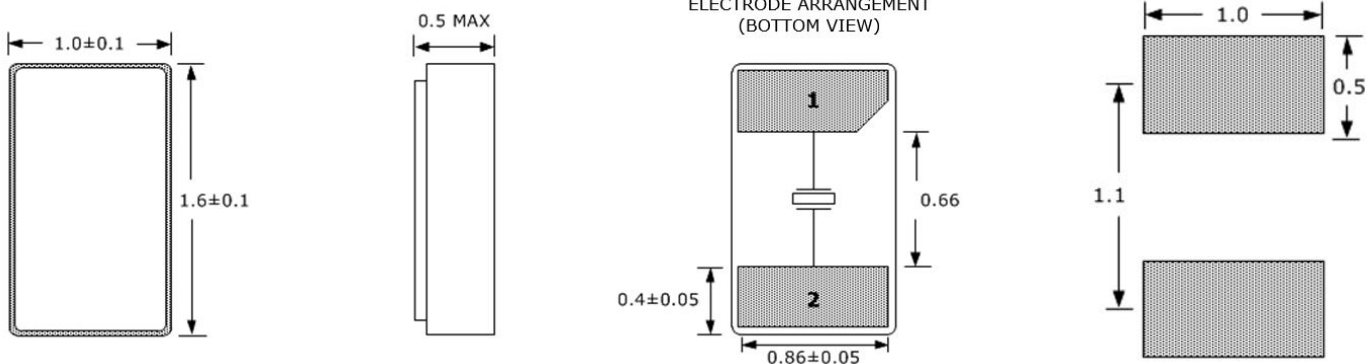
Cage Code: 4GUT4

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	-3		+3	First year @ +25°C.
Frequency Coefficient ( $\beta$ )	ppm/T <sup>2</sup>	-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			12.5	See part numbering guide for options.
Shunt Capacitance	pF		1.4		
Drive Level	$\mu$ W			0.5	
Insulation Resistance	M $\Omega$	500			@ 100VDC $\pm$ 15V.
Equivalent Series Resistance	k $\Omega$			90	

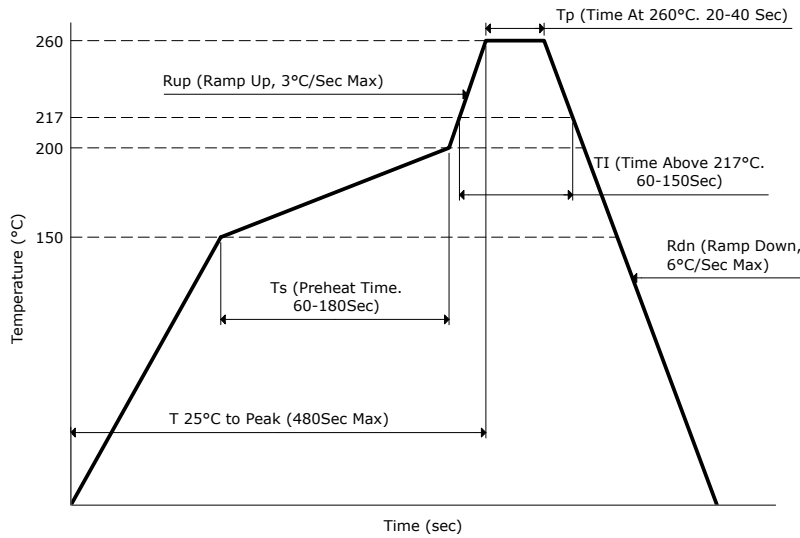
**Outline Drawing & Recommended Land Pattern**

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: XXXXX  
 ↑  
 Lot Code

**Tape And Reel Dimensions**

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

3,000pcs / Reel

