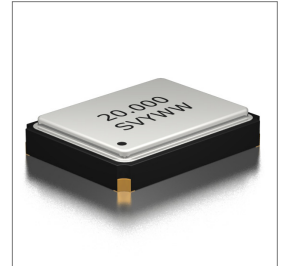


Features
• ± 30 ppm (Frequency Stability) Available
• Ceramic Package
• High Reliability for Automotive
• CMOS
• AEC-Q100 Compliant

Applications
• Automotive Electronics
• Infotainment System
• ADAS
• Car Navigation



Part Numbering Guide

SAO 21 C 3 A 4B 1 - 30.000M

SUNTSU AUTOMOTIVE OSCILLATOR

2.0mm x 1.6mm

CMOS

SUPPLY VOLTAGE

1: 1.8V \pm 5%
 2: 2.5V \pm 5%
 3: 3.3V \pm 5%

FREQUENCY STABILITY

Y: ± 100 ppm
 A: ± 50 ppm
 B: ± 30 ppm

OPERATING TEMPERATURE RANGE

4A: -40°C - +105°C
 *4B: -40°C - +125°C

FREQUENCY MHz

TRI-STATE (ENABLE/DISABLE)
 BLANK: No Connection
 1: Pin 1

RoHS COMPLIANT

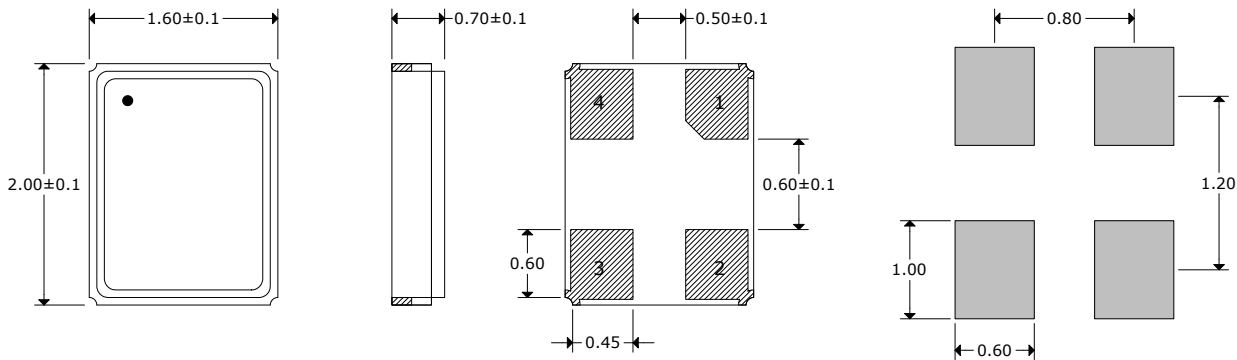
Cage Code : 4GUT4

To customize your parameters, contact a Suntsu representative.
 *For Operating Temperature option 4B, Frequency Stability must be ± 50 ppm or ± 100 ppm

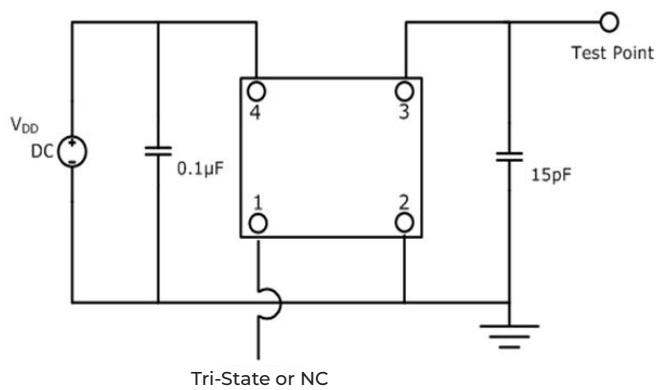
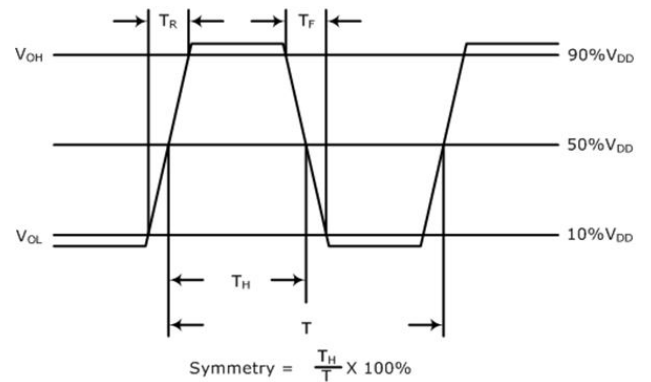
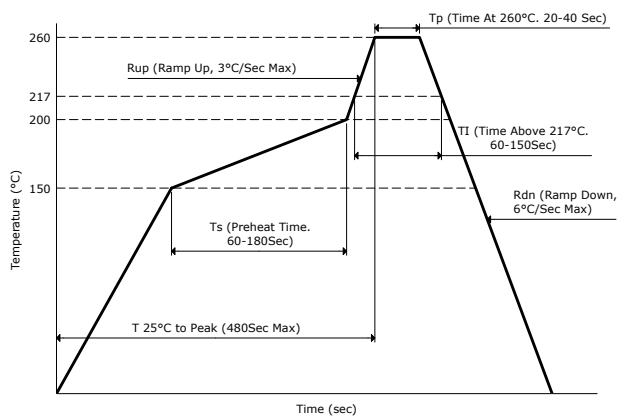
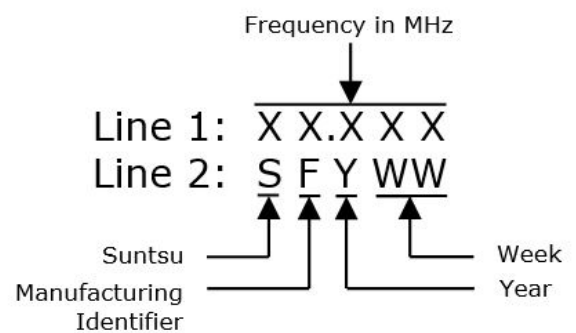
Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Range	KHz	32.768			
Frequency Range	MHz	0.250		125.0	
Frequency Stability (Includes Initial Tolerance at 25°C, Frequency Stability over Operating Temperature, Output Load Change, Supply Voltage Change)	ppm	-25		25	See part numbering guide for options
Aging First Year	ppm	-3		3	
Operating Temperature	°C	-40		125	See part numbering guide for options
Storage Temperature	°C	-55		125	
Supply Voltage (V _{DD}) - 1.8V option	V	1.710	1.8	1.890	
Supply Voltage (V _{DD}) - 2.5V option	V	2.375	2.5	2.625	
Supply Voltage (V _{DD}) - 3.3V option	V	3.135	3.3	3.465	
Current (I _{DD})	Frequency Range	1.8V	2.5V	3.3V	
	32.768KHz	0.20	0.25	0.30	Maximum Value
	0.250MHz - 24.999MHz	4	6	10	Maximum Value
	25.000MHz - 39.999MHz	6	8	15	Maximum Value
	40.000MHz - 59.999MHz	10	12	20	Maximum Value
60.000MHz - 125.000MHz	25	30	40	Maximum Value	
Output Load (CMOS)	pF			15	See part numbering guide for options
Output Logic Levels High (V _{OH})	V	0.9*V _{DD}			
Output Logic Levels Low (V _{OL})	V			0.1*V _{DD}	
Rise (TR) and Fall (TF) Time	ns			30	
	ns			10	
Symmetry (Duty Cycle)	%	45	50	55	
Tri-State Input Voltage - Enable	V	0.7*V _{DD}			No Connection
Tri-State Input Voltage - Disable	V			0.3*V _{DD}	
Start-Up Time	ms			5	
Phase Jitter (12kHz ~ 20MHz)	ps			1	
Period Jitter (pk-pk)	ps			25	

Outline Drawing & Land Pattern

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



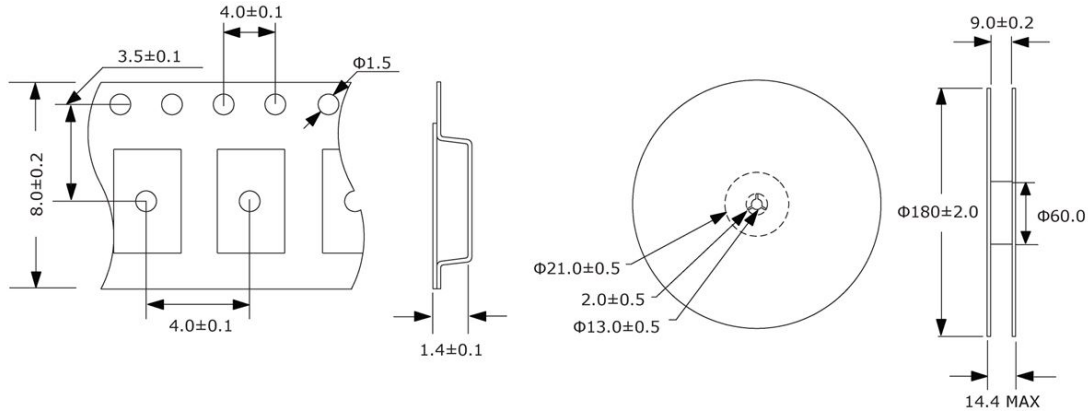
PIN	FUNCTION
1	TRI-STATE or NC
2	GND
3	OUTPUT
4	V _{DD}

Test Circuit (CMOS)

Waveform (CMOS)

Reflow Profile

Part Marking


Tape And Reel Dimensions

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

3,000pcs/Reel



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	Moisture Resistance	MIL-STD-883, Method 1004
Solderability	MIL-STD-883, Method 2003	Resistance to Solvents	MIL-STD-202, Method 215
Moisture Sensitivity	J-STD-020, MSL 1	Resistance to Soldering Heat	MIL-STD-202, Method 210, Condition K