SUNTSU

Ceramic SMT 4 Pad CMOS Oscillator

SXO21C Series

2.0mm x 1.6mm

Features

- ±20ppm (Frequency Stability) Available
- Ceramic Package
- CMOS
- Tape and Reel

Applications

- Mobile Communication
- Portable Electronics
- PDA

Part Numbering Guide

SXO 21 C 3 A 48 1 - 24.000M

- **SUNTSU OSC**
- **2.0mm x 1.6mm**
- **CMOS**
- **SUPPLY VOLTAGE**
  - 1 : 1.8V±5%
  - 2 : 2.5V±5%
  - 3 : 3.3V±5%
- **FREQUENCY STABILITY**
  - A : ±50ppm
  - B : ±30ppm
  - C : ±25ppm
  - *D : ±20ppm
- **OPERATING TEMPERATURE RANGE**
  - 07 : 0°C - +70°C
  - 16 : -10°C - +60°C
  - 17 : -10°C - +70°C
  - 27 : -20°C - +70°C
  - 38 : -30°C - +85°C
  - 48 : -40°C - +85°C
- **TRI-STATE (ENABLE/DISABLE)**
  - BLANK : No Connection
  - 1: Pin 1
- **FREQUENCY**
  - MHz

RoHS COMPLIANT

Cage Code : 4GUT4

To customize your parameters, contact a Suntsu representative.

* For Frequency stability option D, contact a Suntsu representative.

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Range	KHz	22.000	32.768	87.000	
Frequency Range	MHz	1		60	
Frequency Stability (Includes Initial Tolerance at 25°C, Frequency Stability over Operating Temperature, Output Load Change, Supply Voltage Change, and First Year Aging at 25°C.)	ppm	-20		+20	See part numbering guide for options
Operating Temperature	°C	-40		+85	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}) - 1.8V option	mA			10	240µA max. from 22.000kHz to 87.000kHz
Current (I_{DD}) - 2.5V option	mA			10	240µA max. from 22.000kHz to 87.000kHz
Current (I_{DD}) - 3.3V option	mA			15	240µA max. from 22.000kHz to 87.000kHz
Standby Current	µA			10	From 22.000kHz to 87.000kHz
Output Load (CMOS)	pF			15	
Output Logic Levels High (V_{OH})	V	0.9*V_{DD}			V_{DD} -0.4 min. from 22.000kHz to 87.000kHz
Output Logic Levels Low (V_{OL})	V			0.1*V_{DD}	0.4 max. from 22.000kHz to 87.000kHz
Rise (TR) and Fall (TF) Time	ns			10	200ns max. from 22.000kHz to 87.000kHz
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			10	5ms max. from 22.000kHz to 87.000kHz
Phase Jitter (12kHz ~ 20MHz)	ps			1	N/A from 22.000kHz to 87.000kHz

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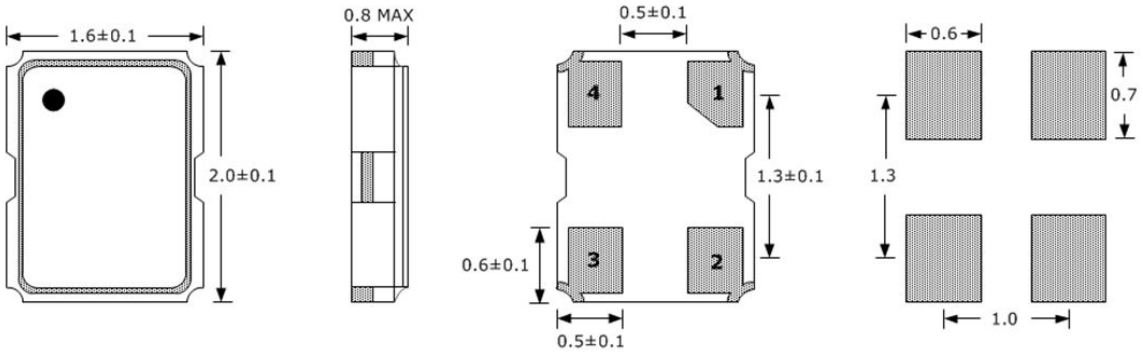
2.0mm x 1.6mm

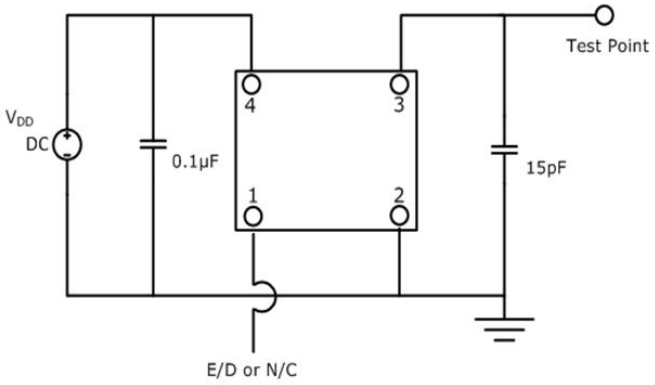
Outline Drawing & Land Pattern

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

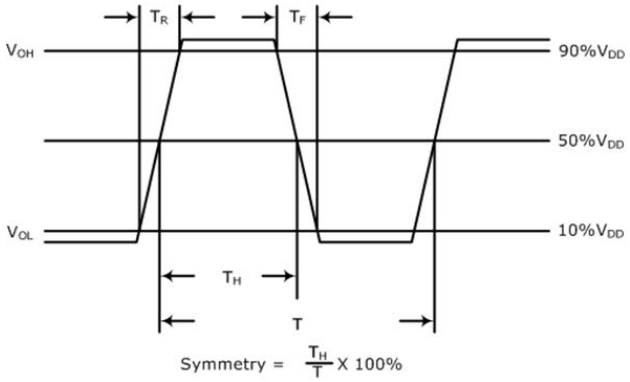


PIN	FUNCTION
1	TRI-STATE or NC
2	GND
3	OUTPUT
4	V_{DD}

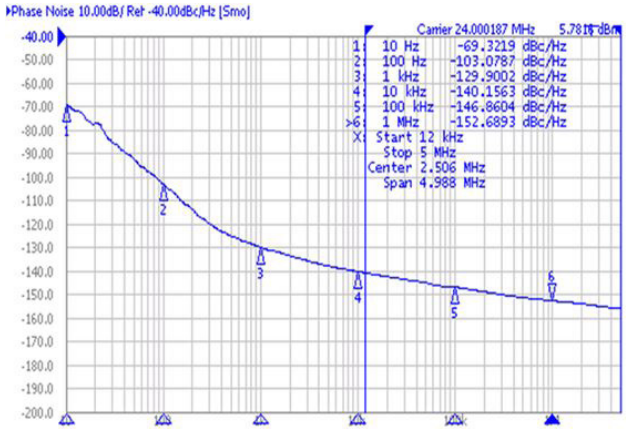
Test Circuit (CMOS)



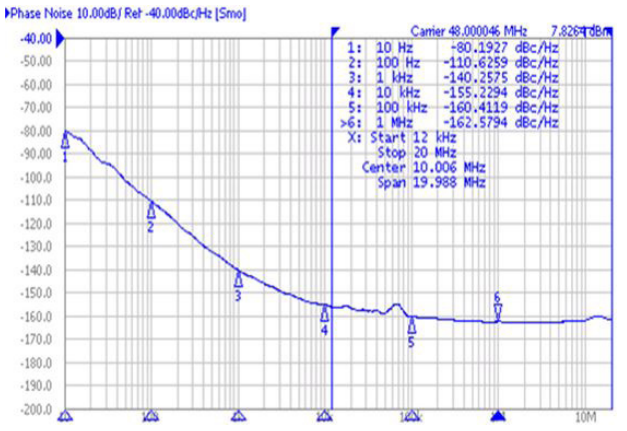
Waveform (CMOS)



Typical Phase Noise Performance (Measured By Agilent E5052A)



Frequency - 24.000MHz



Frequency - 48.000MHz

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Specifications are subject to change without notice.

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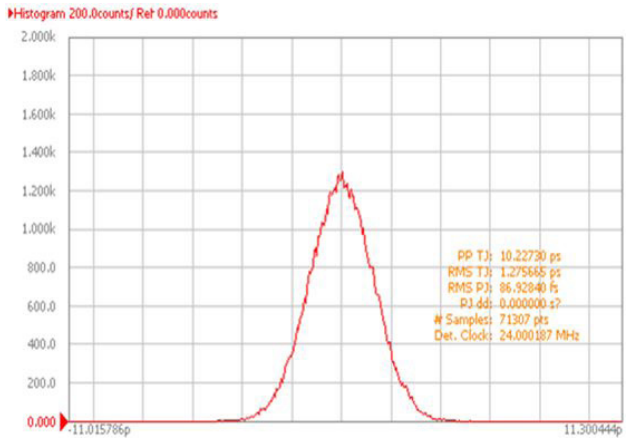
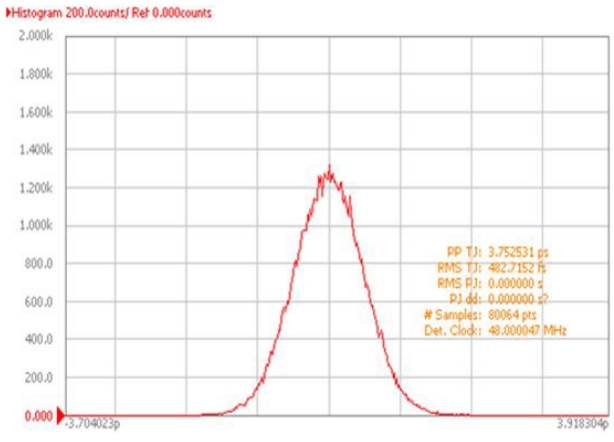
Typical Jitter Performance (Measured By Agilent E5052A)

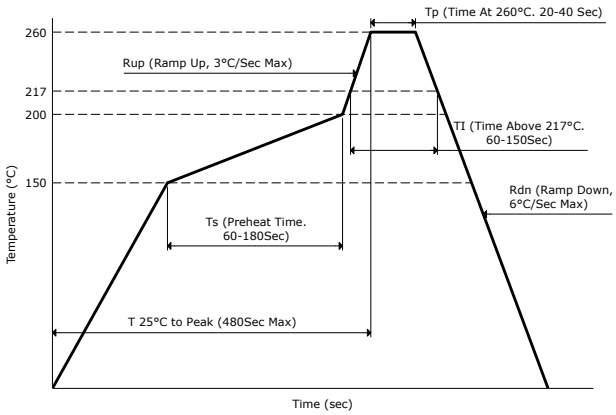


Frequency - 24.000MHz

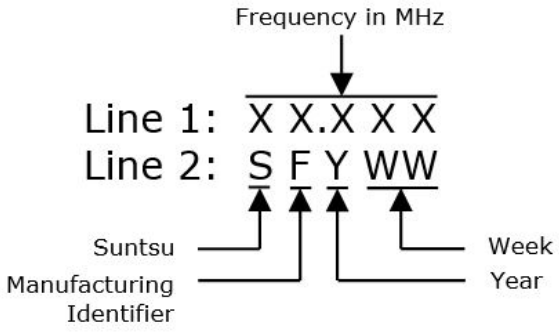


Frequency - 48.000MHz

Reflow Profile



Part Marking



Tape And Reel Dimensions

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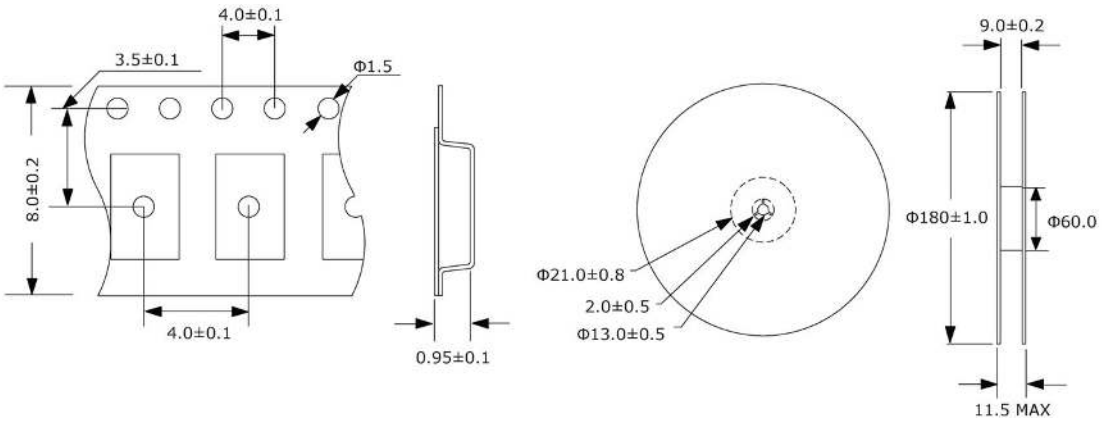
3,000pcs/Reel



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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

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