

FEATURES	APPLICATIONS
<ul style="list-style-type: none"> <li>- ±20ppm (Frequency Stability) Available</li> <li>- Ceramic Package</li> <li>- CMOS</li> <li>- RoHS Compliant</li> <li>- Tape and Reel</li> </ul>	<ul style="list-style-type: none"> <li>- Mobile Communication</li> <li>- Portable Electronics</li> <li>- PDA</li> </ul>

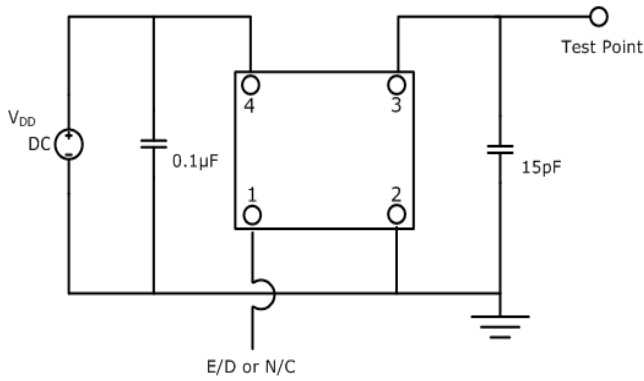


PART NUMBERING GUIDE	
<p><b>SUNTSU OSC</b> → <b>SXO 21 C 3 A 48 1 - 24.000M</b> ← <b>FREQUENCY (MHz)</b></p> <p><b>2.0mm x 1.6mm</b></p> <p><b>CMOS</b></p> <p><b>SUPPLY VOLTAGE</b>            1: 1.8V±5%            2: 2.5V±5%            3: 3.3V±5%</p> <p><b>FREQUENCY STABILITY</b>            A: ±50ppm            B: ±30ppm            C: ±25ppm            *D: ±20ppm</p>	<p><b>TRI-STATE (ENABLE/DISABLE)</b>            BLANK: NO CONNECTION            1: Pin 1</p> <p><b>OPERATING TEMPERATURE RANGE</b>            07: 0°C to + 70°C            16: -10°C to + 60°C            17: -10°C to + 70°C            27: -20°C to + 70°C            38: -30°C to + 85°C            48: -40°C to + 85°C</p>
<p>Cage Code: 4GUT4            To customize your parameters contact a Suntsu representative.            * For frequency stability option D contact a Suntsu representative.</p>	

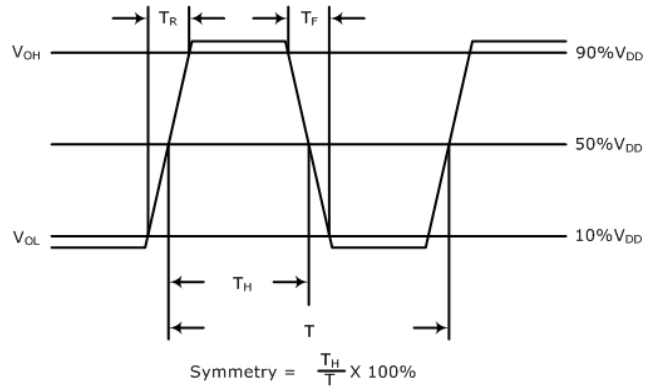
ELECTRICAL PARAMETERS	UNITS	MIN.	TYP.	MAX.	REMARKS
Frequency Range	MHz	1		60	
Frequency Stability (Includes Initial Tolerance at 25°C, Frequency Stability over Operating Temperature, Output Load Change, Supply Voltage Change, and First Year Aging at 25°C.)	ppm	-20		+20	See part numbering guide for options.
Operating Temperature	°C	-40		+85	See part numbering guide for options.
Storage Temperature		-55		+125	
Supply Voltage (V <sub>DD</sub> )	1.8V Option	1.710	1.8	1.890	
	2.5V Option	2.375	2.5	2.625	
	3.3V Option	3.135	3.3	3.465	
Current (I <sub>DD</sub> )	1.8V Option			10	
	2.5V Option			10	
	3.3V Option			15	
Output Load (CMOS)	pF			15	
Output Logic Levels	Output Logic High (V <sub>OH</sub> )	0.9* V <sub>DD</sub>			
	Output Logic Low (V <sub>OL</sub> )			0.1* V <sub>DD</sub>	
Rise (T <sub>R</sub> ) and Fall (T <sub>F</sub> ) Time	ns			10	
Symmetry (Duty Cycle)	%	45	50	55	
Tri-State Input Voltage	Enable	0.7* V <sub>DD</sub>			No Connection.
	Disable			0.3* V <sub>DD</sub>	
Start-Up Time	ms			10	
Phase Jitter (12kHz ~ 20MHz)	ps			1	

OUTLINE DRAWING											
	<p>RECOMMENDED LAND PATTERN</p> <table border="1"> <thead> <tr> <th>PIN</th> <th>FUNCTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>TRI-STATE or NC</td> </tr> <tr> <td>2</td> <td>GND</td> </tr> <tr> <td>3</td> <td>OUTPUT</td> </tr> <tr> <td>4</td> <td>V<sub>DD</sub></td> </tr> </tbody> </table>	PIN	FUNCTION	1	TRI-STATE or NC	2	GND	3	OUTPUT	4	V <sub>DD</sub>
PIN	FUNCTION										
1	TRI-STATE or NC										
2	GND										
3	OUTPUT										
4	V <sub>DD</sub>										
<p>NOTE: Dimensions in millimeters (mm).</p>											

### TEST CIRCUIT (CMOS)

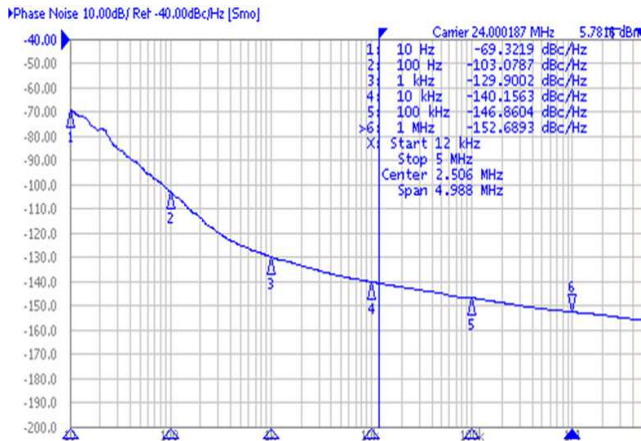


### WAVEFORM (CMOS)

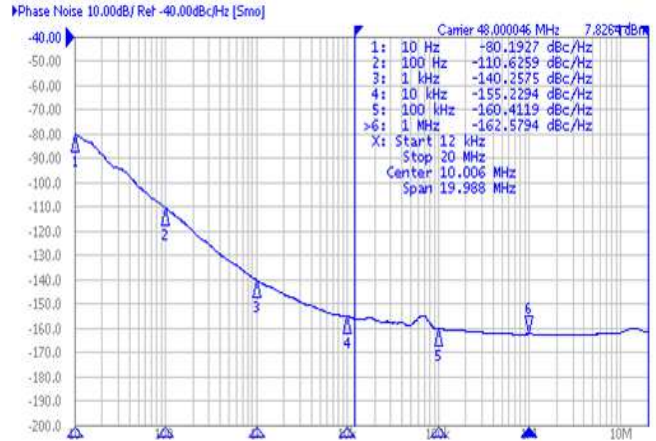


### TYPICAL PHASE NOISE PERFORMANCE (MEASURED BY AGILENT E5052A)

#### Frequency 24.000MHz

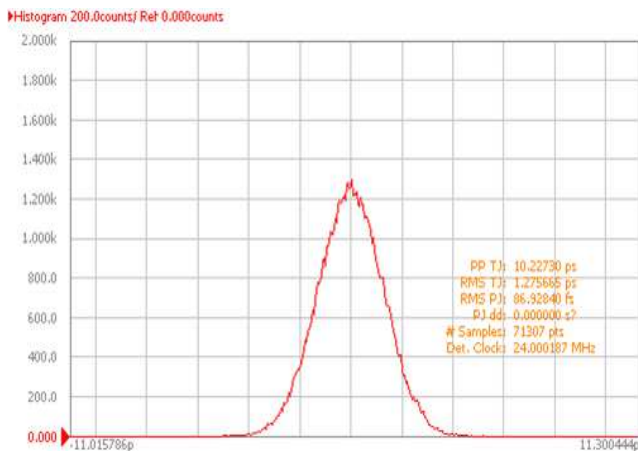


#### Frequency 48.000MHz

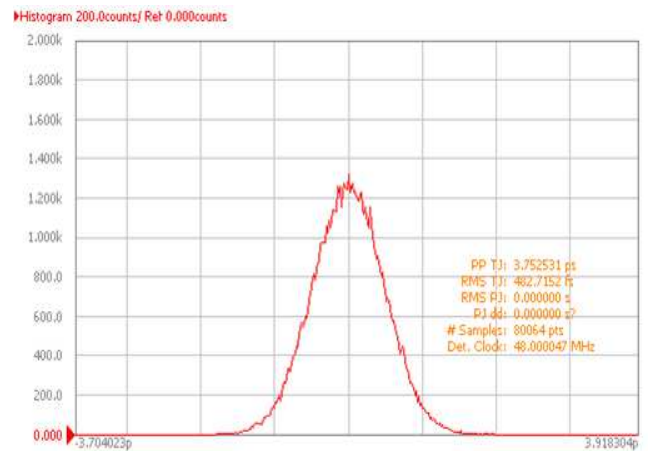


### TYPICAL JITTER PERFORMANCE (MEASURED BY AGILENT E5052A)

#### Frequency 24.000MHz



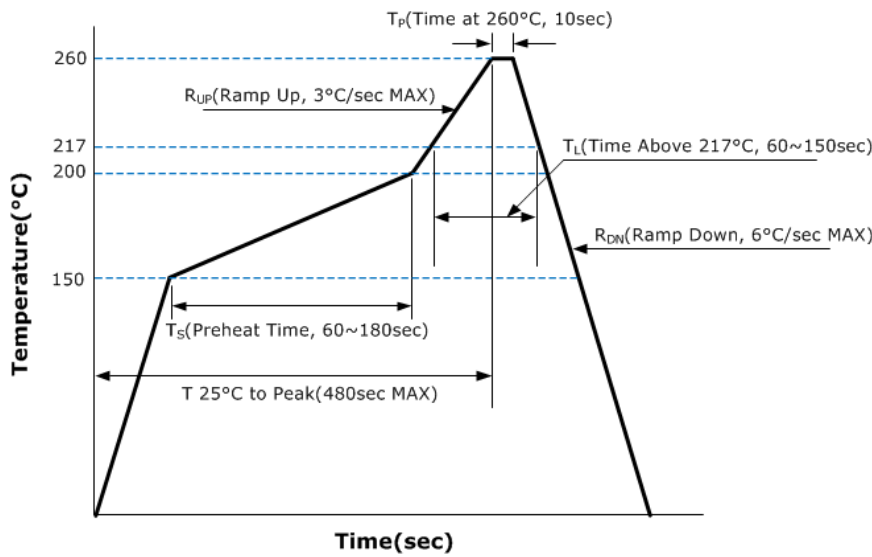
#### Frequency 48.000MHz



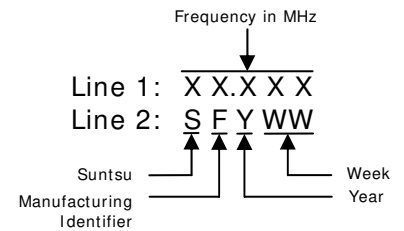
### ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

Temperature Cycling	MIL-STD-883, Method 1010, Condition B
Fine Leak Test	MIL-STD-883, Method 1014, Condition A
Gross Leak Test	MIL-STD-883, Method 1014, Condition C
Mechanical Shock	MIL-STD-883, Method 2002, Condition B
Vibration	MIL-STD-883, Method 2007, Condition A
Moisture Resistance	MIL-STD-883, Method 1004
Moisture Sensitivity	J-STD-020, MSL 1
Resistance to Soldering Heat	MIL-STD-202, Method 210, Condition K
Resistance to Solvents	MIL-STD-202, Method 215
Solderability	MIL-STD-883, Method 2003

### REFLOW PROFILE

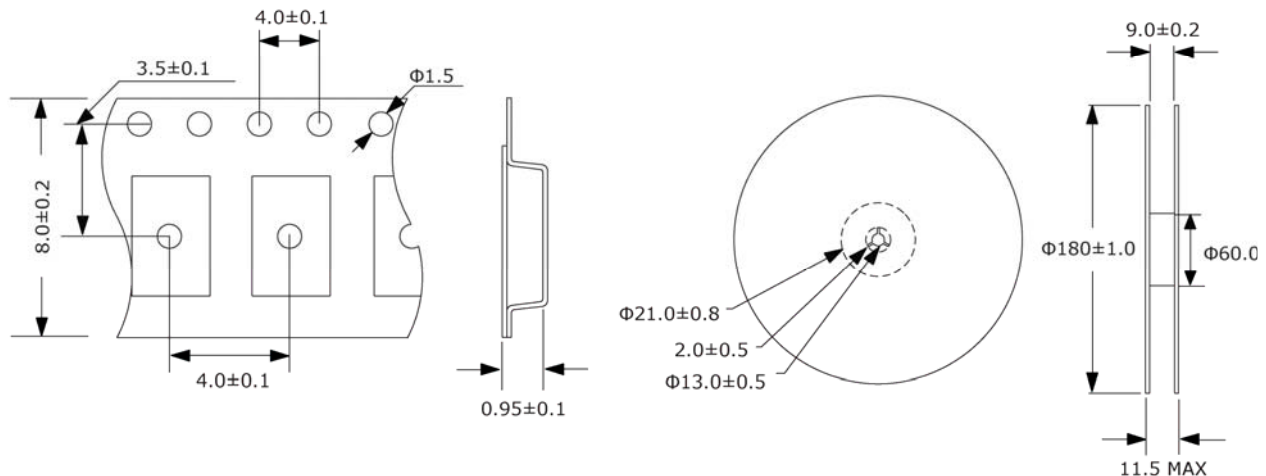


### MARKING



### TAPE AND REEL DIMENSIONS

3,000pcs/reel



NOTE: Dimensions in millimeters (mm); drawing is not to scale.