

FEATURES	APPLICATIONS
<ul style="list-style-type: none"> - $\pm 10\text{ppm}/\pm 10\text{ppm}$ (Tolerance/Stability) Available - RoHS Compliant - RESISTANCE WELD - AT-Cut or BT-Cut - Tape and Reel 	<ul style="list-style-type: none"> - Microprocessors - Computers - Modems - Wireless Applications



PART NUMBERING GUIDE

SUNTSU CRYSTAL → **SXT HM 2 18 A A 48 4 T - 4.000M** ← **FREQUENCY (MHz)**

HC-49/US SMT (points to SXT)

2 PAD (points to HM)

LOAD CAPACITANCE (points to 2)

FREQUENCY TOLERANCE (points to 18)

FREQUENCY STABILITY (points to A A)

MODE OF OPERATION (points to T)

THE HEIGHT OF PACKAGE (points to 48)

OPERATING TEMPERATURE RANGE** (points to 4)

4.000M (points to M)

LEGEND:
 S: SERIES
 7 - 30: 7pF - 30pF
 A: $\pm 50\text{ppm}$
 B: $\pm 30\text{ppm}$
 C: $\pm 25\text{ppm}$
 D: $\pm 20\text{ppm}$
 E: $\pm 15\text{ppm}$
 F: $\pm 10\text{ppm}$

MODE OF OPERATION:
 BLANK: FUNDAMENTAL
 B: BT-CUT FUNDAMENTAL
 T: THIRD OVERTONE

THE HEIGHT OF PACKAGE:
 4: 4.5mm MAX
 3: 3.2mm MAX

OPERATING TEMPERATURE RANGE:**
 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

Cage Code: 4GUT4
 To customize your parameters contact a Suntsu representative.
 * For frequency stability option F contact a Suntsu representative.
 ** For operating temperatures up to -55~125°C contact a Suntsu representative.

ELECTRICAL PARAMETERS	UNITS	MIN.	TYP.	MAX.	REMARKS
Frequency Range	MHz	3		40	AT-Cut Fundamental.
		20		50	BT-Cut Fundamental.
		24		90	3 rd Overtone.
Frequency Tolerance at +25°C	ppm	-10		+10	See part numbering guide for options.
Frequency Stability vs. Operating Temperature (Ref. 25°C)	ppm	-10		+10	See part numbering guide for options.
vs. Aging	ppm	-3		+3	First year @ +25°C.
Operating Temperature	°C	-40		+85	See part numbering guide for options.
Storage Temperature	°C	-40		+125	
Load Capacitance	pF	7		30	See part numbering guide for options.
Shunt Capacitance	pF			7	
Drive Level	μW		100	500	
Insulation Resistance	MΩ	500			@ 100V _{DC} ± 15V.
Equivalent Series Resistance	3.000MHz ~ 3.799MHz			180	AT-Cut Fundamental.
	3.800MHz ~ 4.499MHz			150	AT-Cut Fundamental.
	4.500MHz ~ 5.999MHz			120	AT-Cut Fundamental.
	6.000MHz ~ 7.999MHz			100	AT-Cut Fundamental.
	8.000MHz ~ 9.999MHz			80	AT-Cut Fundamental.
	10.000MHz ~ 12.999MHz			60	AT-Cut Fundamental.
	13.000MHz ~ 19.999MHz			50	AT-Cut Fundamental.
	20.000MHz ~ 40.000MHz			30	AT-Cut Fundamental.
	20.000MHz ~ 50.000MHz			40	BT-Cut Fundamental.
24.000MHz ~ 39.999MHz			100	3 rd Overtone.	
40.000MHz ~ 90.000MHz			80	3 rd Overtone.	

OUTLINE DRAWING

ELECTRODE ARRANGEMENT (BOTTOM VIEW)

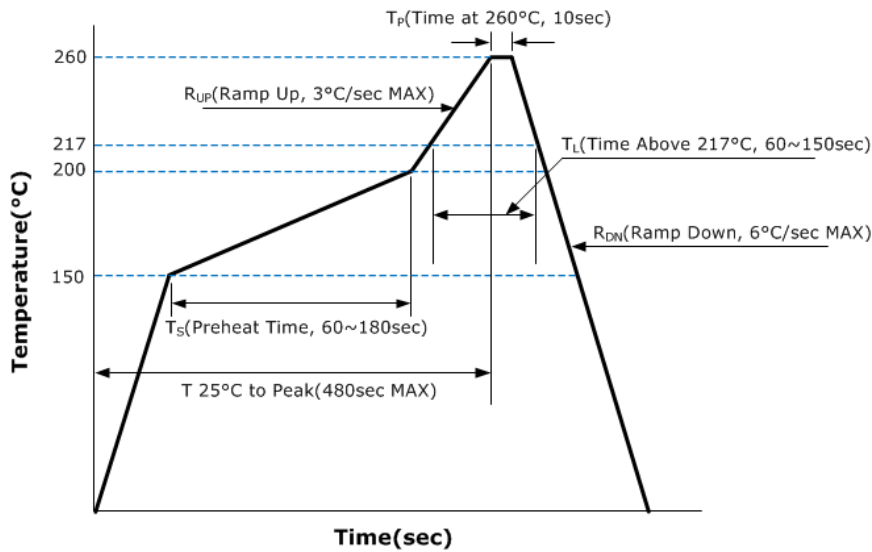
RECOMMENDED LAND PATTERN

NOTE: Dimensions in millimeters (mm).

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

Line 1: XX.XXX S F Y WW

Frequency in MHz ↑ ↑ ↑ ↑

Suntsu ↑ ↑ ↑ ↑

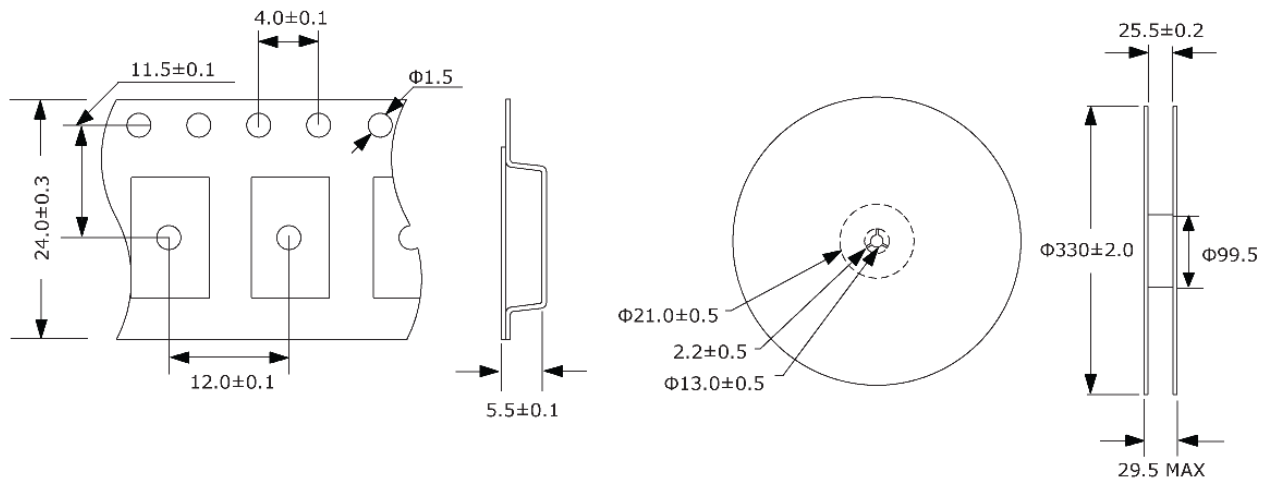
Manufacturing Identifier ↑ ↑ ↑ ↑

Year ↑ ↑ ↑ ↑

Week

TAPE AND REEL DIMENSIONS

1,000pcs/reel



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