



| FEATURES | APPLICATIONS |
|--|--|
| <ul style="list-style-type: none"> - $\pm 10\text{ppm}/\pm 10\text{ppm}$ (Tolerance/Stability) Available - Ultra-Miniature Package - AT-Cut Fundamental - RoHS Compliant - Tape and Reel | <ul style="list-style-type: none"> - High Density Applications - PCMCIA - Wireless Applications - Computers and Modems |

PART NUMBERING GUIDE

SUNTSU CRYSTAL → **SXT 32 4 18 A A 48 T- 24.000M** ← **FREQUENCY (MHz)**

3.2mm x 2.5mm

4 PAD

LOAD CAPACITANCE
S: SERIES
7 - 32: 7pF - 32pF

FREQUENCY TOLERANCE
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: $\pm 10\text{ppm}$

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 $-55\sim 125^\circ\text{C}$ contact a Suntsu representative.

MODE OF OPERATION
BLANK: FUNDAMENTAL
T: THIRD OVERTONE

OPERATING TEMPERATURE RANGE**
07: 0°C to $+70^\circ\text{C}$
16: -10°C to $+60^\circ\text{C}$
17: -10°C to $+70^\circ\text{C}$
27: -20°C to $+70^\circ\text{C}$
38: -30°C to $+85^\circ\text{C}$
48: -40°C to $+85^\circ\text{C}$

FREQUENCY STABILITY
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: $\pm 10\text{ppm}$ *

| ELECTRICAL PARAMETERS | UNITS | MIN. | TYP. | MAX. | REMARKS |
|--|-----------------------|------|------|------|--|
| Frequency Range | MHz | 12 | | 70 | AT-Cut Fundamental. |
| | | 60 | | 170 | 3 rd Overtone. |
| Frequency Tolerance at $+25^\circ\text{C}$ | 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 | | -2 | | +2 | First year @ $+25^\circ\text{C}$. |
| Operating Temperature | $^\circ\text{C}$ | -40 | | +85 | See part numbering guide for options. |
| Storage Temperature | $^\circ\text{C}$ | -40 | | +125 | |
| Load Capacitance | pF | 7 | | 32 | See part numbering guide for options. |
| Shunt Capacitance | pF | | | 5 | |
| Drive Level | μW | | 10 | 100 | |
| Insulation Resistance | M Ω | 500 | | | @ $100\text{V}_{\text{DC}} \pm 15\text{V}$. |
| Equivalent Series Resistance | 12.000MHz ~ 15.999MHz | | | 100 | AT-Cut Fundamental. |
| | 16.000MHz ~ 19.999MHz | | | 70 | AT-Cut Fundamental. |
| | 20.000MHz ~ 29.999MHz | | | 50 | AT-Cut Fundamental. |
| | 30.000MHz ~ 49.999MHz | | | 40 | AT-Cut Fundamental. |
| | 50.000MHz ~ 70.000MHz | | | 35 | AT-Cut Fundamental. |
| | 60.000MHz ~ 170.00MHz | | | 80 | 3 rd Overtone. |

OUTLINE DRAWING

ELECTRODE ARRANGEMENT (BOTTOM VIEW)

Notch Position

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 |

