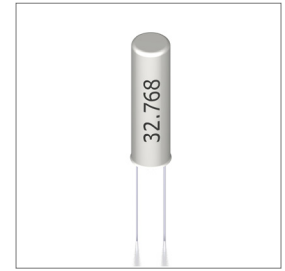


Features
<ul style="list-style-type: none"> <li>±20ppm/±30ppm (Tolerance/Stability) Available</li> <li>Wide Frequency Range</li> <li>AT-Cut</li> <li>Bulk Packing</li> </ul>

Applications
<ul style="list-style-type: none"> <li>Computer Peripherals</li> <li>Microprocessor</li> <li>Test Equipment</li> </ul>



**Part Numbering Guide**

**SCM 13 2 18 A A 48 T - 48.000M**

SUNTSU CYLINDRICAL MHz CRYSTAL

10.5mm x 3.2mm

2 LEAD

**RoHS COMPLIANT**

**LOAD CAPACITANCE**  
S : Series  
7 - 30 : 7pF - 30pF

**FREQUENCY TOLERANCE**  
A : ±50ppm  
B : ±30ppm  
C : ±25ppm  
D : ±20ppm

**FREQUENCY STABILITY**  
A : ±50ppm  
B : ±30ppm

**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

**FREQUENCY MHz**

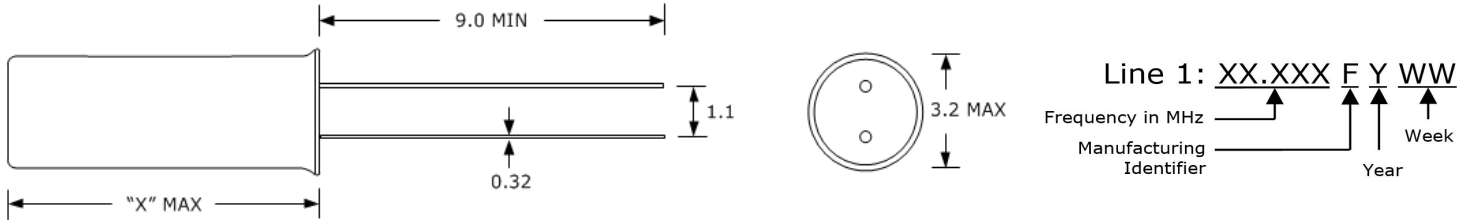
**MODE OF OPERATION**  
BLANK : Fundamental  
T : Third Overtone

Cage Code: 4GUT4  
To customize your parameters contact a Suntsu representative.

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Range	MHz	3.579545		29.999	AT-Cut Fundamental
Frequency Range	MHz	30		90	3 <sup>rd</sup> Overtone
Frequency Tolerance at +25°C	ppm	-20		+20	See part numbering guide for options.
Frequency Stability vs. Op Temp	ppm	-30		+30	See part numbering guide for options.
Frequency Stability vs. Aging	ppm	-5		+5	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			5	
Drive Level	µW			100	
Insulation Resistance	MΩ	500			@ 100VDC ± 15V.
3.579MHz ~ 3.999MHz	Ω			200	AT-Cut Fundamental
4.000MHz ~ 5.999MHz	Ω			150	AT-Cut Fundamental
6.000MHz ~ 6.999MHz	Ω			100	AT-Cut Fundamental
7.000MHz ~ 8.999MHz	Ω			80	AT-Cut Fundamental
ESR - 9.000MHz ~ 12.999MHz	Ω			60	AT-Cut Fundamental
13.000MHz ~ 19.999MHz	Ω			50	AT-Cut Fundamental
20.000MHz ~ 29.999MHz	Ω			30	AT-Cut Fundamental
30.000MHz ~ 69.999MHz	Ω			100	3 <sup>rd</sup> Overtone
70.000MHz ~ 90.000MHz	Ω			80	3 <sup>rd</sup> Overtone

**Outline Drawing & Part Marking**

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



X	Frequency Range
10.2	3.579MHz ~ 3.999MHz
9.2	4.000MHz ~ 5.999MHz
8.2	6.000MHz ~ 90.00MHz

**Environmental 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
Moisture Resistance	MIL-STD-883, Method 1004
Moisture Sensitivity	J-STD-020, MSL 1

**Mechanical Specifications**

Mechanical Shock	MIL-STD-202, Method 213, Condition C
Vibration	MIL-STD-883, Method 2007, Condition A
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