Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

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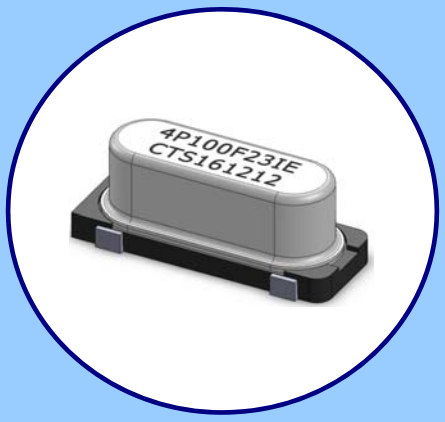
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

ATSSM4P Series

Quartz Crystal w/ Four Leads

FEATURES

- **Four Leaded Package [HC-49/ US-SM Type]**
- **Fundamental and 3rd Overtone Crystals**
- **Alternative for Common Plastic Molded Designs**
- Stable Frequency Over Temperature and Drive Level
- Frequency Range 3.2 – 64MHz
- Frequency Tolerance, Options from ±10ppm to ±30ppm
- Frequency Stability, Options from ± 10ppm to ±50ppm
- Operating Temperature, –20°C to +70°C & -40°C to +85°C Standard
- Tape & Reel Packaging Standard
- **RoHS/ Green Compliant [6/ 6]**



APPLICATIONS

The ATSSM4P [4 Pad] crystal series offers excellent long-term stability and reliability in a proven resistance-weld metal package. The excellent shock performance makes it suitable for microprocessor, telecommunication, industrial, consumer electronics and networking applications.

ORDERING INFORMATION

4 P □ □ □ □ □ □ □ □ □

CRYSTAL CONFIGURATION

P - Crystal Connection, Pin 1 to 4

FREQUENCY

Product Frequency Code [3 digits]

Refer to document 016-1454-0.

MODE OF OSCILLATION

F = Fundamental
T = 3rd Overtone

FREQUENCY TOLERANCE @+ 25°C

1 = ±10ppm [1]	Y = ±25ppm
X = ±15ppm	3 = ±30ppm
2 = ±20ppm	

TEMPERATURE STABILITY

1 = ±10ppm [1]	Y = ±25ppm
X = ±15ppm	3 = ±30ppm
2 = ±20ppm	5 = ±50ppm

PACKAGING

T = Tape and Reel

LOAD CAPACITANCE

K = 8pF	D = 18pF
J = 9pF	E = 20pF
A = 10pF	F = 24pF
L = 12pF	G = 30pF
B = 13pF	H = 32pF
C = 16pF	S = Series

TEMPERATURE RANGE

C = -20°C to +70°C
I = -40°C to +85°C [1]

1. Check factory availability for "1ll" Tolerance/Stability/Temperature combination.

Not all performance combinations and frequencies may be available.
Contact your local CTS Representative or CTS Inside Sales Representative for availability.

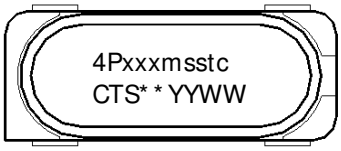
ELECTRICAL CHARACTERISTICS

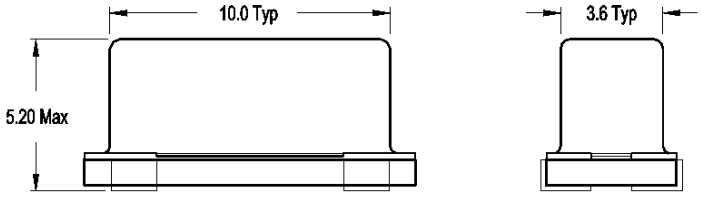
	PARAMETER	VALUE	
ELECTRICAL PARAMETERS	Frequency Range	3.2MHz to 40MHz	24MHz to 64MHz
	Operating Mode	Fundamental	3rd Overtone
	Crystal Cut	AT-Cut	
	Frequency Tolerance @ +25°C *	±10, ±15, ±20, ±25, ±30ppm	
	Frequency Stability Tolerance * [Operating Temperature Range, Referenced to +25°C Reading]	±10, ±15, ±20, ±25, ±30, ±50ppm	
	Operating Temperature Ranges	-20°C to +70°C	
		-40°C to +85°C	
	Equivalent Series Resistance - Fundamental Mode [Maximum]	3.20MHz - <4.00MHz	150 Ohms
		4.00MHz - <5.00MHz	120 Ohms
		5.00MHz - <8.00MHz	80 Ohms
		8.00MHz - <12.00MHz	60 Ohms
		12.00MHz - <20.00MHz	40 Ohms
		20.00MHz - 40.00MHz	30 Ohms
	Equivalent Series Resistance - 3rd Overtone Mode [Maximum]	24.00MHz - <48.00MHz	80 Ohms
		48.00MHz - 64.00MHz	60 Ohms
	Load Capacitance	See Ordering Information	
	Shunt Capacitance [C_0]	7.0pF Maximum	
	Drive Level	100µW Typ., 1000µW Max.	
	Aging @ +25°C	±3ppm/yr Typical, ±5ppm/yr Maximum	
	Insulation Resistance	500M Ohms @ DC 100V	
	Storage Temperature Range	-40°C to +100°C	

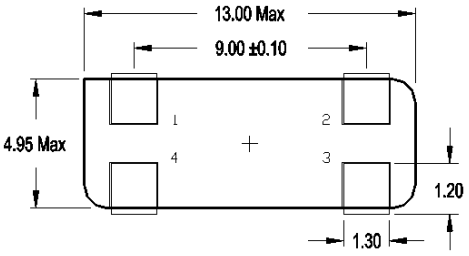
* See Ordering Information.

MECHANICAL SPECIFICATIONS

PACKAGE DRAWING







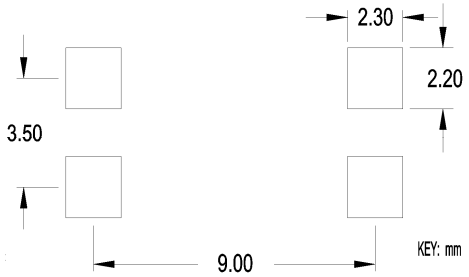
MARKING INFORMATION

1. 4Pxxxmsstc – Truncated CTS Part Number.
   [Packaging code is not required in the marking.]
   a) 4P – ATSSM4P platform.
   b) xxx – 3-digit Frequency Code. [Reference document 016-1454-0]
   c) m – Operating Mode; F = fundamental, T = 3rd Overtone.
   d) sstc – Tolerance, Stability, Temperature and Load Capacitance codes. Reference Ordering Information.
2. ** - Manufacturing Site Code.
3. YYWW – Date Code, YY – year, WW – week.
4. Complete CTS part number, frequency value and date code information must appear on bag and box labels.

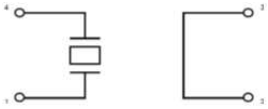
NOTES

1. JEDEC termination code (e1). Lead finish is SnAgCu.
2. Reflow conditions per JEDEC J-STD-020; 260°C maximum, 10 seconds.

SUGGESTED SOLDER PAD GEOMETRY



SCHEMATIC



PACKAGING INFORMATION [For Reference]

Tape and Reel