

# ATSM-49-R Surface Mount Crystals



## Order by:

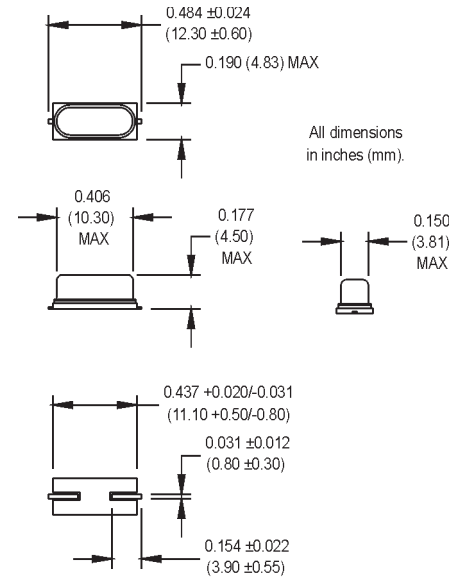
\*ATSM-49-R 00.0000 MHz (Frequency)  
-R signifies RoHS compliant part

## For Custom P/N:

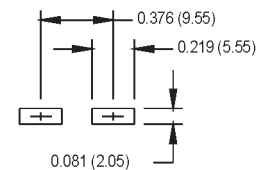
M1001Sxxx - Contact factory for datasheet

### Equivalent Series Resistance (ESR), Max.

Fundamental (AT-cut)	
3.579 to 3.999 MHz	200 $\Omega$
4.000 to 4.999 MHz	150 $\Omega$
5.000 to 5.999 MHz	120 $\Omega$
6.000 to 9.999 MHz	100 $\Omega$
10.000 to 13.999 MHz	80 $\Omega$
14.000 to 40.000 MHz	50 $\Omega$
Fundamental (BT-cut)	
24.000 to 50.000 MHz	Note 1
Third Overtones (AT-cut)	
25.000 to 39.999 MHz	100 $\Omega$
40.000 to 72.000 MHz	80 $\Omega$



### SUGGESTED SOLDER PAD LAYOUT



MtronPTI ATSM-49 Options	
Order by part number listed followed by the desired frequency.	
Part No.	Description
520-010-R	Fundamental frequencies, -20°C to +70°C operating temperature
520-230-R	Fundamental frequencies, 20pF load capacitance
520-260-R	Fundamental frequencies, 32pF load capacitance
520-910-R	3 <sup>rd</sup> overtone frequencies, 18 pF load capacitance
520-930-R	3 <sup>rd</sup> overtone frequencies, 20pF load capacitance
520-960-R	3 <sup>rd</sup> overtone frequencies, 32pF load capacitance
522-210-R	Fundamental frequencies, -40°C to +85°C operating temperature
522-215-R	3 <sup>rd</sup> overtone frequencies, -40°C to +85°C operating temperature
Balance of specifications same as shown in "Electrical Specifications"	
Contact the factory for options not listed above.	

Electrical Specification	PARAMETER	Symbol	Min.	Typ.	Max.	Units	Condition/Notes
	Frequency Range	F	3.579545		72	MHz	
	Frequency Tolerance	F/F			$\pm$ 30	ppm	
	Frequency Stability	$\Delta$ F/F			$\pm$ 50	ppm	
	Operating Temperature	T <sub>A</sub>	-10		+70	°C	
	Storage Temperature	T <sub>S</sub>	-55		+125	°C	
	Aging 1 <sup>st</sup> Year Thereafter (per year)				+3 +5	ppm ppm	Up to 3 <sup>rd</sup> year
	Load Capacitance	C <sub>L</sub>		18		pF	See Note 2
	Shunt Capacitance	C <sub>O</sub>			7	pF	
	ESR		See ESR Table				
	Drive Level	D <sub>L</sub>	25	100	500	$\mu$ W	
	Insulation Resistance	I <sub>R</sub>	500			M $\Omega$	
Environmental	Aging	Internal Specification, 168 hrs. at +55°C					
	Physical Dimensions	MIL-STD-883, Method 2016					
	Shock	MIL-STD-202, Method 213 Condition C, 100 g					
	Vibration	MIL-STD-202, Methods 201 & 204, 10 g from 10-2000 Hz					
	Thermal Cycle	MIL-STD-883, Method 1010, Condition B, -55°C to +125°C					
	Gross Leak	MIL-STD-202, Method 112, 30 sec. Immersion					
	Fine Leak	MIL-STD-202, Method 112, 1 x 10 <sup>-8</sup> atmcc/sec. min.					
	Resistance to Solvents	MIL-STD-883, Method 2015, Three 1 minute soaks					
	Max Soldering Conditions	See solder profile					

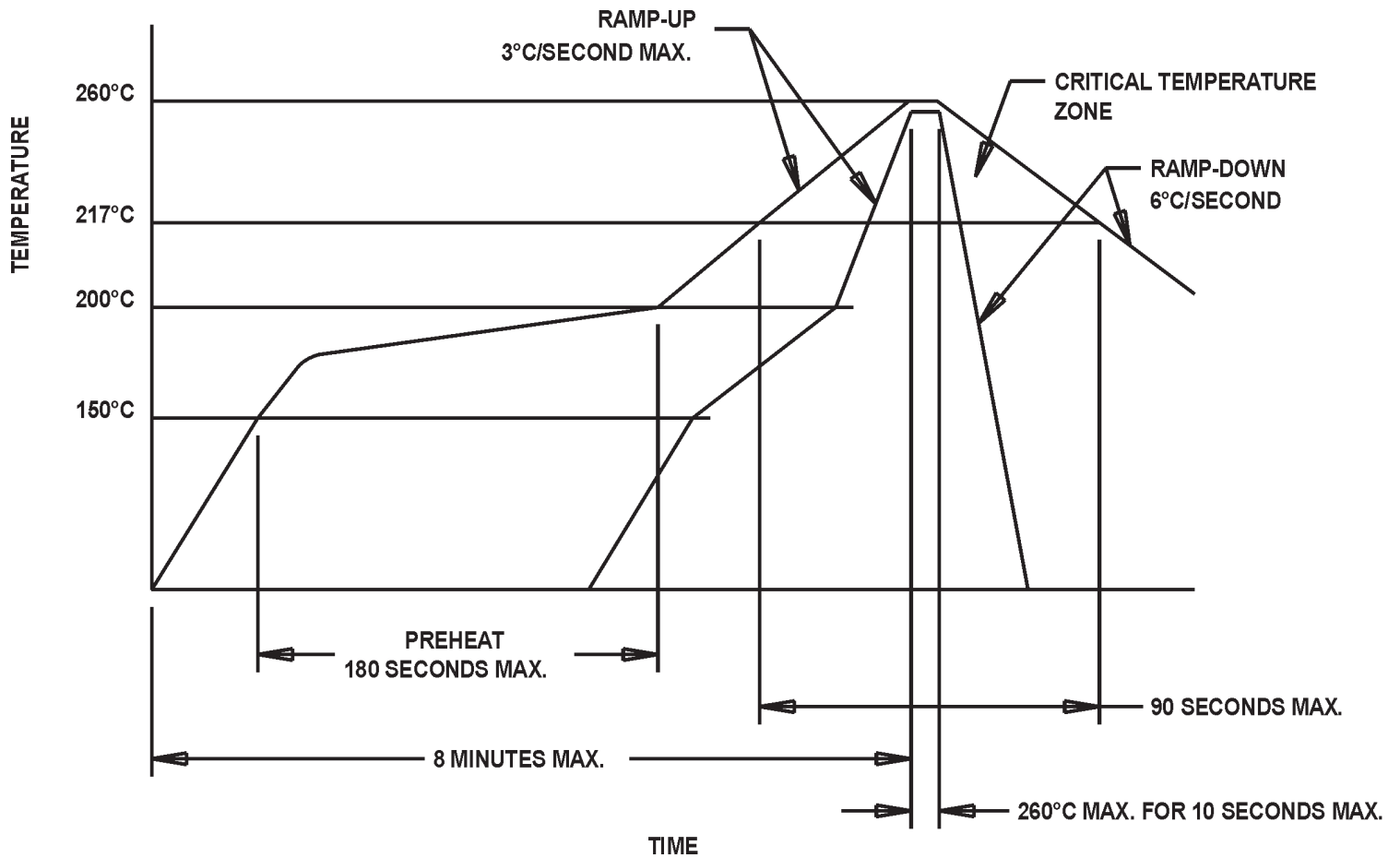
Note 1: BT Cut fundamentals from 24.000 to 40.000 MHz have a tolerance of  $\pm$ 50 ppm and 100 ppm stability. Order by P/N 471-010-R-Frequency.

Note 2: Series resonant designated by "SR" prefix (ie., SRATSM-49-R).

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Please see [www.mtronpti.com](http://www.mtronpti.com) for our complete offering and detailed datasheets. Contact us for your application specific requirements: MtronPTI 1-800-762-8800.

## MtronPTI Lead Free Solder Profile



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