



# ATS-49-R Crystals

## FEATURES

Resistance Weld (HC-49S)  
 AT-Cut Fundamental and Overtone Modes  
 Swept Quartz Options Available  
 Rugged Design to support harsh environments

## APPLICATIONS

Avionics and Aerospace  
 Communication and Navigation  
 Military Radios  
 Instrumentation and Industrial  
 Test and Measurement Equipment

## ORDERING INFORMATION

	<b>ATS-49</b>	<b>-R</b>	<b>00.0000 MHz</b>
<p><b>Product</b></p> <p><b>ATS-49:</b> Fundamental (AT-cut)</p> <p><b>397-030:</b> Fundamental (AT-Cut), 20pF load Capacitance, ±30 ppm tolerance, ±50 ppm stability, -10°C to +70°C operating temperature</p> <p><b>397-040:</b> Fundamental (AT-Cut), series resonant, -10°C to +70°C operating temperature</p> <p><b>397-310:</b> Fundamental (AT-Cut), 18pF load, -40°C to +85°C operating temperature</p> <p><b>482-010:</b> Third Overtone (AT-Cut), base insulator</p> <p><b>482-040:</b> Third Overtone (AT-Cut), series resonant, base insulator</p> <p><b>482-740:</b> Third Overtone (AT-Cut), series resonant, -40°C to +85°C operating temperature</p> <p><b>483-240:</b> Fundamental (AT-Cut), series resonant, ±30 ppm tolerance, ±50 ppm stability, -40°C to +85°C operating temperature</p> <p><b>493-040:</b> Third Overtone (AT-Cut), series resonant</p>			
<p><b>RoHS Compliance</b></p> <p><b>-R:</b> RoHS Compliant</p> <p><b>-V:</b> non-RoHS</p>			

Example of parallel resonant part Number: ATS-49-R 16 .0000 MHz  
 Example of series resonant part Number: SRATS-49-R 16 .0000 MHz

Notes	
Note 1	Series resonant designated "SR" prefix (i.e., SRATS-49-R)
Note 2	24.000 to 40.000 MHz have a tolerance of $\pm 50$ ppm and 100 ppm stability

## ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Frequency Range	F <sub>0</sub>	3.579545		72	MHz	
Frequency Tolerance	F/F	-30		+30	ppm	@ +25°C, see ordering information.
Frequency Stability	$\Delta F/F$	-50		+50	ppm	Over the operating temperature range
Aging		-3		+3	ppm	1 <sup>st</sup> year
		-5		+5	ppm	Thereafter per year (up to 3 <sup>rd</sup> year)
Load Capacitance			18		pF	See Note 1
Shunt Capacitance				7	pF	
ESR		See ESR Table				
Drive Level	DL	25	100	500	$\mu$ W	
Insulation Resistance	IR	500			M $\Omega$	

Temperature						
Operating Temperature	T <sub>A</sub>	-10		+70	°C	
Storage Temperature	T <sub>S</sub>	-55		+125	°C	

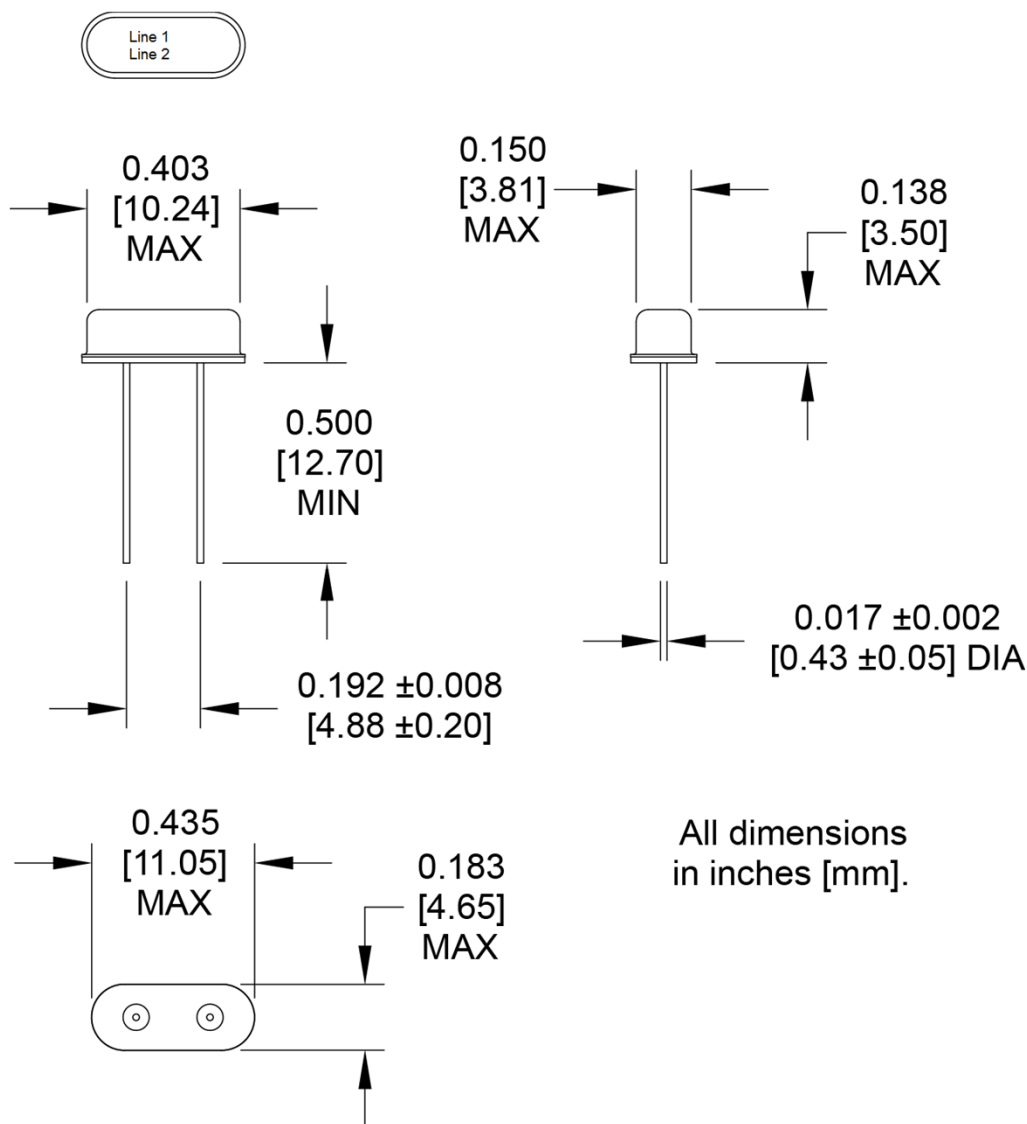
## ESR Table

Frequency Range	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) – Note 2	
24.000 to 50.000 MHz	100 $\Omega$
Third Overtone (AT-cut)	
25.000 to 39.999 MHz	100 $\Omega$
40.000 to 72.000 MHz	80 $\Omega$

## ENVIRONMENTAL CONDITIONS

Mechanical 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
Hermeticity	MIL-STD-202, Method 112 (must meet $1 \times 10^{-8}$ )
Solderability	Per EIAJ-STD-002 Environmental
Max Soldering Conditions	Conditions +260°C for 10 secs. Max

## MECHANICAL AND PIN OUT INFORMATION



MtronPTI reserves the right to make changes to the product(s) and service(s) described herein without notice.  
No liability is assumed as a result of their use or application.