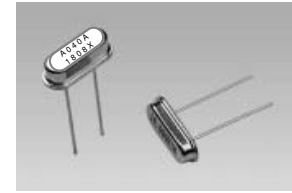


**CRYSTAL UNITS (Rohs Compliant / Lead Free)**  
**HC- 49S Crystal (APS Series)**



**- SPECIFICATIONS**

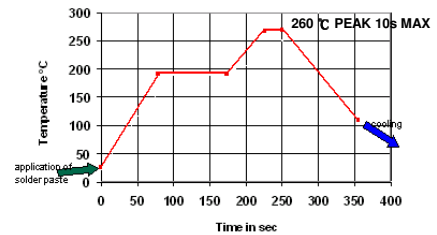
<b>FREQUENCY RANGE</b>		3.20MHz TO 66.000 MHz
<b>MODE OF OSCILLATION</b>	<b>FUNDAMENTAL</b>	3.20MHz TO 40.0MHz
	<b>THIRD OVERTONE</b>	30.0MHz TO 66.0MHz
<b>FREQUENCY TOLERANCE AT 25°C</b>		±30PPM STANDARD
		<±30PPM ARE AVAILABLE
<b>FREQUENCY STABILITY OVER TEMPERATURE RANGE</b>		±30PPM STANDARD
		<±30PPM ARE AVAILABLE
<b>OPERATING TEMPERATURE RANGE</b>		-20°C TO +70°C STANDARD
		-40°C TO +85°C EXTENDED
<b>STORAGE TEMPERATURE RANGE</b>		-55°C TO +125°C
<b>SHUNT CAPACITANCE</b>		7pF MAXIMUM
<b>LOAD CAPACITANCE</b>		10pF TO SERIES OR SPECIFIED
<b>EQUIVALENT SERIES RESISTANCE (ESR)</b>		SEE TABLE
<b>DRIVE LEVEL</b>		100 TO 500µW
<b>AGING PER YEAR</b>		±5PPM MAXIMUM STANDARD
		<±5PPM ON REQUEST



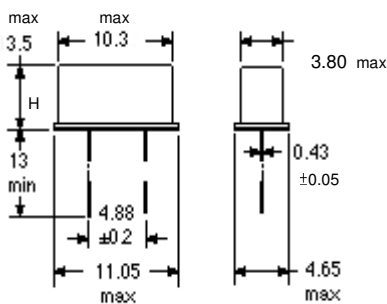
**- Equivalent Series Resistance (ESR) and Mode Of Vibration (Mode)**

Frequency Range (MHz)	ESR max.	Mode	Frequency Range (MHz)	ESR max.	Mode
3.200 to 4.499	150	Fundamental/AT	9.000 to 9.999	60	Fundamental/AT
4.500 to 5.999	120	Fundamental/AT	10.000 to 12.999	50	Fundamental/AT
6.000 to 6.999	100	Fundamental/AT	13.000 to 30.000	40	Fundamental/AT
7.000 to 7.999	90	Fundamental/AT	27.000 to 40.000	40	Fundamental/BT
8.000 to 8.999	80	Fundamental/AT	30.000 to 66.000	80	Third Overtone

**- SOLDER REFLOW PROFILE**



**- OUTLINE DIMENSIONS**



Packaging: 1,000 pcs/box

HEIGHT "H" (MAXIMUM)	
STANDARD	3.5MM
L25	2.5MM

Unit: mm

ORDERING CODE SYSTEM (VERSION 1.1 UPDATED MAY 2008)					EXAMPLE:
SERIES	FREQUENCY	LOAD CAPACITANCE	TEMPERATURE RANGE	TOLERANCE/ STABILITY	APS-4-20X-2020
APS	IN MHZ	10pF TO SERIES OR SPECIFIED	X: EXT.TEMP.-40 TO +85°C BLANK: STANDARD	2020: PPM/PPM BLANK: STANDARD	

NON STANDARD FREQUENCIES AND SPECIFICATIONS ARE AVAILABLE ON REQUEST

ActPro Ltd. (APX-Crystal) HONG KONG Email: [sales@apx-crystal.com](mailto:sales@apx-crystal.com) Internet: [www.apx-crystal.com](http://www.apx-crystal.com) Tel: 852-3625 2368 Fax: 852-2633 8503  
 PROREP FRANCE Email: [sales@prorep.fr](mailto:sales@prorep.fr) Internet: [www.prorep.fr](http://www.prorep.fr) Tel: 33-1-4812 1736 Fax: 33-1-4812 1739  
 EDGE Meditronics PTE Ltd. SINGAPORE Email: [sales@edgemeditronics.com.sg](mailto:sales@edgemeditronics.com.sg) Internet: [www.edgemeditronics.com.sg](http://www.edgemeditronics.com.sg) Tel: 65-6455 0521 Fax: 65-6455 0857

*Specifications are subject to change without notice*