



# Quartz Crystal - HC-49S - H2.2 - TR

**Pin Type Crystal - 11.0 x 4.65 x 2.2mm / L20.0 (Pin Length)**

## • Features

- Low cost & wide applications
- Tight tolerance and Stability
- RoHS compliant

## • General Specification

Type	HC-49S - H2.2 / L20.0
Frequency Range	3.200MHz to 90.000MHz
Frequency Tolerance at 25°C	± 30ppm *
Frequency Stability	± 50ppm *
Operating Temperature	-10°C to +60°C *
Load Capacitance	6pF to 32pF / Series
Shunt Capacitance	7pF max *
Storage Temperature	-40°C to +85°C *
Drive Level	100μW *
Aging	± 5ppm max first year *

\* Can be changed according to Customer's requirement.

## • Drive Level Codes (μW)

A = 100	B = 200	D = 50	E = 300	G = 500	I = 10
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## • Load Capacitance Codes

12pF = A	12.5pF = B	14pF = C	16pF = D	17pF = E	18pF = F
20pF = G	25pF = H	30pF = I	32pF = J	33pF = K	Series = L
13pF = M	27pF = N	50pF = O	10pF = P	15pF = Q	22pF = R
15.8pF = S	8.5pF = T	8.2pF = U	40pF = V	9pF = W	11pF = X
13.8pF = Y	19.6pF = Z	6pF = a	7pF = d	8pF = e	19pF = f

## • Operating Temperature Codes (°C)

A = -10 to +60	B = -20 to +70	C = -10 to +70	I = -40 to +85	X = -30 to +80	W = -10 to +50
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## • Frequency Tolerance & Frequency Stability Codes (ppm)

P = ±10	S = ±20	T = ±30	U = ±50	V = ±100	W = ±5
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Pls contact us for the parameters you could not find in these tables.

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## • Frequency Stability vs. Operating Temperature

	$\pm 10\text{ppm}$	$\pm 20\text{ppm}$	$\pm 30\text{ppm}$	$\pm 50\text{ppm}$	$\pm 100\text{ppm}$
-10°C - +60°C	⊙	⊙	●	⊙	⊙
-10°C - +70°C	⊙	⊙	●	⊙	⊙
-20°C - +70°C	⊙	⊙	●	●	⊙
-40°C - +85°C			⊙	●	⊙

⊙ Available      ● Standard

## • ESR (Series Resistance Rs) vs Standard Frequency, Vibration Mode & Codes

Frequency Range (MHz)	ESR Max ( $\Omega$ )	Code	Vibration Mode	Code
3.200 - 3.579	250	a	AT Fund	A
3.580 - 4.000	150	1	AT Fund	A
4.001 - 5.000	120	2	AT Fund	A
5.001 - 6.000	100	0	AT Fund	A
6.001 - 7.000	80	2	AT Fund	A
7.001 - 8.000	60	4	AT Fund	A
8.001 - 9.999	60	1	AT Fund	A
10.000 - 13.999	50	2	AT Fund	A
14.000 - 35.328	40	4	AT Fund	A
24.000 - 34.999	100	b	3rd OT	a3
35.000 - 90.000	80	0	3rd OT	a3

## • Marking

**Frequency + N (Company brand: Newxtal) + Date code ( Year Code + Month Code )**

Year Code:

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1	2	3	4	5	6	7	8	9	10	11	12

Month Code:

Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
A	B	C	D	E	F	G	H	I	J	K	L

**For Example:      8.000N6I**

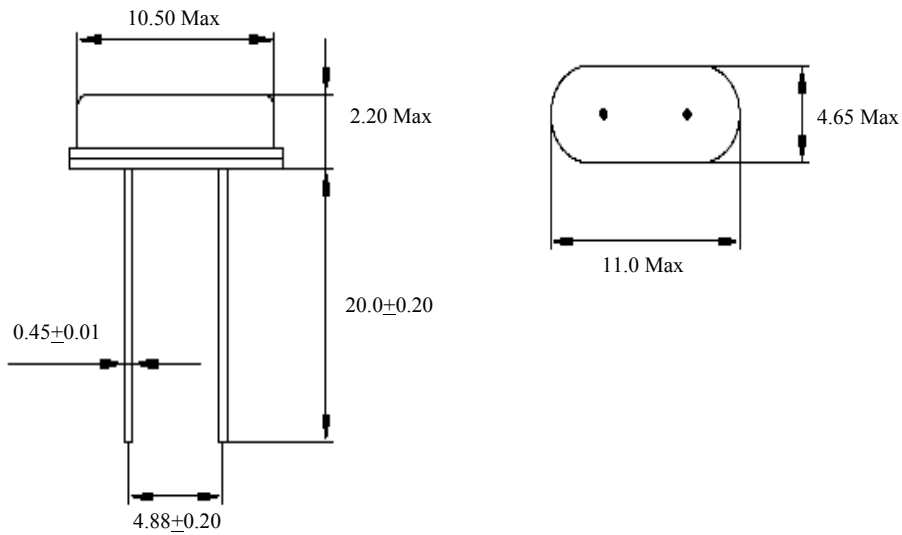
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## Ordering Information

Drive Level	Load Capacitance	Operating Temperature	Frequency Tolerance	Frequency Stability	ESR	Type	Vibration Mode	Frequency	Lead-free	Packing
( $\mu$ W)	(pF)	( $^{\circ}$ C)	(ppm)	(ppm)	( $\Omega$ )			(MHz)		
See Tables						E = HC-49S, H2.2	See Table	xx.xxxM	LF	TR
100	20	-10 to +60	$\pm 30$	$\pm 30$	60		AT Fund		Lead-free	Tape & reel
<b>A</b>	<b>G</b>	<b>A</b>	<b>T</b>	<b>T</b>	<b>4</b>	<b>E</b>	<b>A</b>		<b>LF</b>	<b>TR</b>

For Example: **AGATT4EA-8.000MLF/TR**

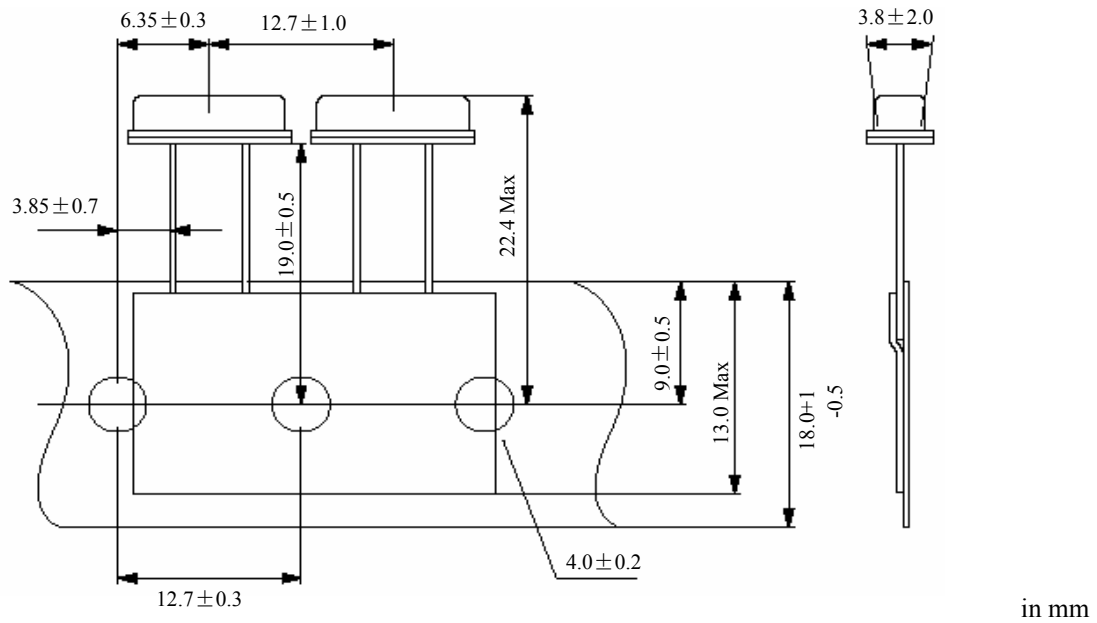
## Dimensions



in mm

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## • Taping Specification



\* Reel Quantity: 1,000pcs

## • Wave Soldering Profile

