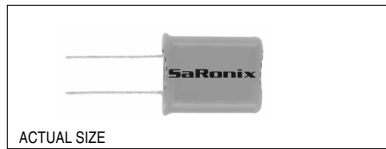


### Technical Data

HC-49/U Series



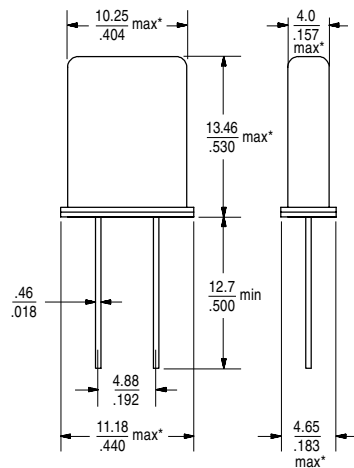
#### Description

The HC-49/U Series is an industry standard AT cut crystal housed in a Mil standard HC-49/U package.

#### Applications & Features

- Industry standard package
- AT cut performance
- Resistance weld seal

#### Package Details



\*Maximum dimensions include vinyl sleeve

Scale: None (Dimensions in  $\frac{\text{mm}}{\text{inches}}$ )

**Frequency Range:** 1.8432 MHz to 200 MHz

#### Temperature Range:

Operating: -20 to +70°C (-40 to +85°C available)  
Storage: -55 to +125°C

#### Temperature

**Stability Tolerance:** ±50 ppm from -20 to +70°C

#### Characteristics at 25°C ±2°C:

Frequency Calibration Tolerance: ±30 ppm (tighter tolerances available)  
Load Capacitance: 18 pF to 32 pF or series resonance  
Effective Series Resistance: 700 to 20 ohms (frequency dependent)  
Drive Level: 0.5mW correlation, 2.0mW maximum operating  
Shunt Capacitance: 7pF maximum

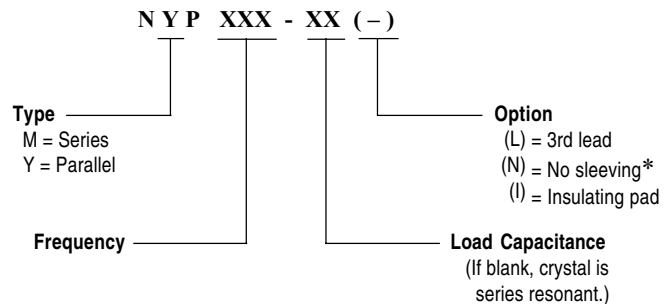
#### Mechanical:

Shock: MIL-STD-883, Method 2002, Condition B  
Solderability: MIL-STD-883, Method 2003  
Terminal Strength: MIL-STD-202, Method 211, Conditions A and C  
Vibration: MIL-STD-883, Method 2007, Condition A  
Solvent Resistance: MIL-STD-202, Method 215  
Resistance to Soldering Heat: MIL-STD-202, Method 210, Condition B

#### Environmental:

Gross Leak Test: MIL-STD-883, Method 1014, Condition C  
Fine Leak Test: MIL-STD-883, Method 1014, Condition A  
Thermal Shock: MIL-STD-883, Method 1011, Condition A  
Moisture Resistance: MIL-STD-883, Method 1004

#### Part Numbering Guide



\*Standard parts are covered with vinyl shrink sleeve unless ordered without and designated (N).

### Technical Data

### HC-49/U Series

**Common Frequencies:** The following selection chart lists common HC-49/U series crystals. Special frequencies and load calibrations are available upon request.

Frequency MHz	Saronix Part Number	Maximum ESR (Fundamental)	Frequency MHz	Saronix Part Number	Maximum ESR (Fundamental)	Maximum ESR (3rd Overtone)
1.843200	NYP018A-13	700	8.192000	NYP081-30	35	
1.843200	NMP018A	700	9.216000	NMP092	35	
2.000000	NYP020A-20	500	9.830400	NYP098-20	35	
2.000000	NMP020A	500	9.830400	NMP098	35	
2.097425	NYP021A-20	500	10.000000	NYP100-20	30	
2.457600	NYP024A-20	300	10.000000	NYP100-18	30	
2.457600	NMP024A-32	300	10.000000	NMP100	30	
2.457600	NMP024A	300	10.738635	NYP107-32	30	
3.000000	NYP030A-30	200	11.000000	NMP110	30	
3.000000	NMP030A	200	11.059200	NYP111-20	30	
3.276800	NYP032A-15	150	11.059200	NMP111	30	
3.276800	NMP032A	150	12.000000	NYP120-20	30	
3.579545	NYP035A-18	150	12.000000	NMP120	30	
3.579545	NMP035A	150	12.288000	NYP122-20	30	
3.600000	NYP036-30	150	12.288000	NMP122	30	
3.686400	NYP037-20	120	14.318180	NYP143-32	25	
3.686400	NMP037	120	14.318180	NMP143	25	
3.932160	NYP039-12	120	14.745600	NYP147-20	25	
3.932160	NMP039	120	14.745600	NMP147	25	
4.000000	NYP040-20	100	15.000000	NMP150	25	
4.000000	NMP040	100	16.000000	NYP160-20	25	
4.096000	NYP0409-20	100	16.000000	NMP160	25	
4.194304	NYP041	100	16.384000	NMP163	25	
4.194304	NYP041-12	100	18.000000	NMP180	20	
4.433619	NYP044-20	80	18.432000	NYP184-20	20	
4.915200	NMP049	55	18.432000	NMP184	20	
4.915200	NYP049-20	55	19.660800	NYP196-20	20	
5.000000	NYP050-20	50	19.660800	NMP196	20	
5.068800	NMP051	50	20.000000	NYP200-20	20	
5.185000	NYP052-20	50	20.000000	NMP200	20	
5.714300	NMP057	50	22.118400	NMP221	20	
6.000000	NMP060	50	24.000000	NYP240-20	20	
6.144000	NYP061-30	40	24.000000	NMP240	20	
6.553600	NMP065	40	24.576000	NYP245-18		40
7.000000	NMP070	40	25.000000	NMP250		40
7.159090	NYP071-20	40	27.000000	NMP270		40
7.372800	NYP073-20	40	28.636360	NYP286-32		40
7.372800	NMP073	40	30.000000	NYP300-20		40
8.000000	NYP080-20	35	30.000000	NMP300	25	
8.000000	NYP080-18	35	32.000000	NMP320		40
8.000000	NMP080	35	36.000000	NMP360		40
8.192000	NYP081	35	40.000000	NMP400		40
8.192000	NYP081-20	35	48.000000	NMP480		40

All specifications are subject to change without notice.

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