SaRonix™
A PERICOM® COMPANY

HC-49/S Series

Miniature Quartz Crystal
HC-49, Low Profile

Actual Size

Product Description

The 49S Series is a miniature, AT or BT cut strip resonator crystal, housed in low profile 3.5mm high packaging. The Series meets the standard 0.200" board spacing.

Product Features

- Low profile 3.5mm high
- AT or BT cut performance
- Resistance weld seal
- Lead (Pb)-free RoHS Compliant Version Available

Typical Applications

- Fibre Channel
- Ethernet
- Modems
- ADSL
- ISDN
- Microcontrollers
- Remote Control Devices
- Network Processors

Frequency Range:

- 3.2 to 29.999 MHz, AT Fundamental
- 26.8 to 50.000 MHz, BT Fundamental
- 30.0 to 80.000 MHz, AT 3rd OT

Temperature Range:

- Operating: –20 to +70°C Standard (see options below)
- Storage: –55 to +125°C

Frequency Stability Tolerance:

- ±30ppm, –20 to +70°C
- ±50ppm, –40 to +85°C, or
- ±100ppm, –40 to +85°C
- 0 to –100ppm for BT
- Others available

Characteristics at 25°C ±2°C:

- Frequency Calibration Tolerance: ±30ppm, ±50ppm (others avail)
- Load Capacitance: 12 to 32pF or Series Resonance
- Effective Series Resistance: 30 to 200-ohm (frequency dependent)
- Drive Level: 100μW correlation, 500μW Max operating
- Shunt Capacitance: 7pF Max.

Mechanical:

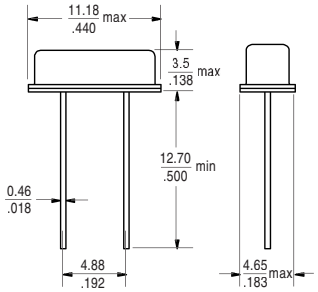
- Shock: MIL-STD-883, Method 2002, Condition B
- Solderability: MIL-STD-883, Method 2003
- Solderability (lead free): JESD22-B102-D Method 2 (Preconditioning E)
- Terminal Strength: MIL-STD-202, Method 211, Conditions A and C
- Vibration: MIL-STD-883, Method 2007, Condition A
- Solvent Resistance: MIL-STD-202, Method 215
- Resistance to Soldering Heat: MIL-STD-202, Method 210, Condition B
- Resistance to Soldering Heat (lead free): JESD22-B106-C

Environmental:

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

Downloaded from Arrow.com.

Packaging Information: 49S



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

Package Marking Information

Frequency, calibration, stability, temp:

Line 1: S = SaRonix Designator
xxx = Calib/Stability/Temp Code
YYWWX = Date Code

Line 2: Frequency (up to 7 digits, including decimal point)
BT-cut = B or
AT-cut Parallel = –(dash) or
AT-cut Series = leave Blank
xx = Load Capacitance (leave Blank if Series)

SxxxYYWWX
24.5760-xx

Ordering Information

49S XXX – XX XXX X

Type

Frequency (MHz)
Frequency (in MHz) = 0x.xxxx, xx.xxxx
(a zero is used in front of frequencies under 10 MHz)

B = BT-cut, 26.8 to 50 MHz
– (dash) = AT-cut Parallel Resonance
Blank = AT-cut Series Resonance

Load Capacitance
xx = Parallel Resonance (specify load)
Blank = Series Resonance

Calibration / Stability / Temp Range
GGC = ±30ppm / ±30ppm / -20 to +70°C
GHE = ±30ppm / ±50ppm / -40 to +85°C
HJE = ±50ppm / ±100ppm / -40 to +85°C
* others available

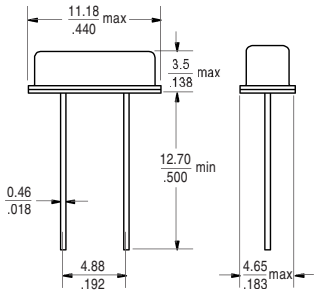
–E (dash E) = Lead (Pb)-free RoHS Compliant Version
Blank = Standard version

Part Number Example:
Spec: Freq 5.1234MHz, ±30ppm calib, ±30ppm stab, -20 to +70°C, 16pF = 49S05.1234-16GGC
= 49S05.1234-16GGC–E (for lead-free)

Downloaded from Arrow.com.

THIS PAGE NOT RECOMMENDED FOR NEW DESIGNS, SEE PAGES 1-2

Packaging Information: 49S



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

Package Marking Information

Products with custom frequency, calibration, stability, temp:

Line 1: S = SaRonix Designator
–(dash) = separator
xxx = Calib/Stability/Temp Code
YYWW = Date Code

Line 2: Frequency (up to 7 digits, including decimal point)
BT-cut = B or
AT-cut Parallel = –(dash) or
AT-cut Series = leave Blank
xx = Load Capacitance (leave Blank if Series)

S–xxxYYWW
24.5760-xx

Products with common frequency and standard specifications:

Line 1: S = SaRonix Designator
YYWW = Date Code

Line 2: Frequency (up to 7 digits, including decimal point)
BT-cut = B or
AT-cut Parallel = –(dash) or
AT-cut Series = leave Blank
xx = Load Capacitance (leave Blank if Series)

SYYWW
24.5760-xx

Ordering Information

49S XXX – XX XXX

Type

Frequency (MHz)
Common Frequency Code, select code from list on page 2 (applies only to ±50ppm Calibration, ±50ppm Stability, -20 to +70°C).
If code not listed on page 2:
then
Custom Frequency (in MHz) = 0x.xxxx, xx.xxxx
(a zero is used in front of frequencies under 10 MHz)

B = BT-cut, 26.8 to 50 MHz
– (dash) = AT-cut Parallel Resonance
Blank = AT-cut Series Resonance

Load Capacitance
xx=ParallelResonance(specifyload)
Blank = Series Resonance

Calibration / Stability / Temp Range
EEA = ±20ppm / ±20ppm / 0 to +50°C
GGC = ±30ppm / ±30ppm / -20 to +70°C
GHC = ±30ppm / ±50ppm / -20 to +70°C
*Blank = ±50ppm / ±50ppm / -20 to +70°C
GHE = ±30ppm / ±50ppm / -40 to +90°C
HJE = ±50ppm / ±100ppm / -40 to +90°C

Part Number Example:
Spec: Freq 5.1234MHz, ±30ppm calib, ±30ppm stab, -20 to +70°C, 16pF = 49S05.1234-16GGC

*no code used, as these specs designate standard configuration for this series

Part Number Examples:
Common Freq 20MHz, ±50ppm calib, ±50ppm stability, -20 to +70°C, 12pF = 49S200-12
Common Freq 20MHz, ±50ppm calib, ±50ppm stability, -20 to +70°C, Series = 49S200
Spec: Custom Freq 5.1234MHz, ±30ppm calib, ±30ppm stab, -20 to +70°C, 16pF = 49S05.1234-16GGC

THIS PAGE NOT RECOMMENDED FOR NEW DESIGNS, SEE PAGES 1-2

Downloaded from Arrow.com.

THIS PAGE NOT RECOMMENDED FOR NEW DESIGNS, SEE PAGES 1-2

Legacy Part Number Format

Freq. MHz	Freq. Code	Maximum ESR (Fundamental)	Maximum ESR (3rd OT)
3.579545	035	200	
3.686400	037	160	
4.000000	040	150	
4.915200	049	150	
5.068800	051	120	
6.000000	060	100	
7.372800	073	80	
8.000000	080	80	
10.000000	100	60	
11.059200	111	60	
12.000000	120	60	
12.288000	122	60	
14.318180	143	30	
15.000000	150	30	
16.000000	160	30	
18.000000	180	30	
18.432000	184	30	
19.660800	196	30	
20.000000	200	30	
24.000000	240	30	
24.576000	245	30	
25.000000	250	30	
26.800000	268	30	
28.000000	280	30	
29.491200	294	30	
30.000000	300	30	80
32.000000	320	30	80
32.256000	322	30	80
33.000000	330	30	
33.333000	333	30	
33.868000	338	30	
35.251200	352	30	80
36.000000	360	30	80
40.000000	400	30	80
40.320000	403	30	80
40.960000	409		80
42.000000	420	30	80
42.500000	425		80
45.000000	450	30	80
46.000000	460	30	80
48.000000	480		80
50.000000	500	30	30
52.416000	524		80
56.448000	564		80
60.000000	600		80
66.666667	666		80

THIS PAGE NOT RECOMMENDED FOR NEW DESIGNS, SEE PAGES 1-2

Downloaded from Arrow.com.