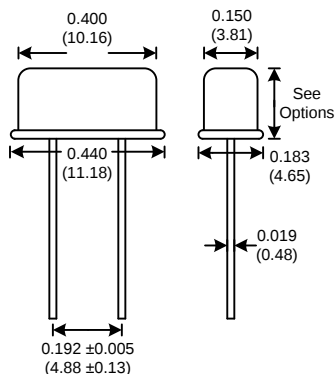




## CYSxx Model

### Low Profile HC49S Leaded Crystal



Dimensions inches (mm)

All dimensions are maximum unless otherwise specified

| Resistance at series resonance |         |
|--------------------------------|---------|
| Freq. (MHz)                    | Max ESR |
| 3.579545 - 4.0                 | 150     |
| 4.1 - 4.9                      | 120     |
| 5.0 - 5.9                      | 100     |
| 6.0 - 11.9                     | 90      |
| 12.0 - 14.9                    | 70      |
| 15.0 - 30.0                    | 50      |
| 30.1 - 86.0                    | 100     |

Table 1



| Part number | Freq. (MHz) | CL     | Max ESR |
|-------------|-------------|--------|---------|
| CY3DMS      | 3.579545    | 18pF   | 150     |
| CY3JS       | 3.686400    | series | 150     |
| CY3JMS      | 3.686400    | 18pF   | 150     |
| CY3JNS      | 3.686400    | 20pF   | 150     |
| CY3AS       | 4.000       | series | 150     |
| CY3APS      | 4.000       | 20pF   | 150     |
| CY4ES       | 4.194304    | 12pF   | 120     |
| CY4DS       | 4.915200    | series | 120     |
| CY7AS       | 5.000       | series | 100     |
| CY7APS      | 5.000       | 20pF   | 100     |
| CY5BS       | 5.0688      | series | 100     |
| CY6BS       | 6.000       | series | 90      |
| CY6BPS      | 6.000       | 20pF   | 90      |
| CY8GS       | 8.000       | series | 90      |
| CY8GPS      | 8.000       | 20pF   | 90      |
| CY9BS       | 9.830400    | series | 90      |
| CY12AS      | 10.000      | series | 90      |
| CY11BS      | 11.059200   | series | 90      |
| CY11BPS     | 11.059200   | 20pF   | 90      |
| CY12BS      | 12.000      | series | 70      |
| CY12BPS     | 12.000      | 20pF   | 70      |
| CY14AS      | 14.318180   | series | 70      |
| CY14ACS     | 14.318180   | 18pF   | 70      |
| CY14APS     | 14.318180   | 20pF   | 70      |
| CY14BS      | 14.745600   | series | 70      |
| CY14BPS     | 14.745600   | 20pF   | 70      |
| CY15AS      | 15.000      | series | 50      |
| CY16BS      | 16.000      | series | 50      |
| CY16BPS     | 16.000      | 20pF   | 50      |
| CY19AS      | 18.000      | series | 50      |
| CY19BS      | 18.432      | series | 50      |
| CY19BPS     | 18.432      | 20pF   | 50      |
| CY20AS      | 19.660800   | series | 50      |
| CY20APS     | 19.660800   | 20pF   | 50      |
| CY22AS      | 20.000      | series | 50      |
| CY22APS     | 20.000      | 20pF   | 50      |
| CY24AS      | 24.000      | series | 50      |
| CY24APS     | 24.000      | 20pF   | 50      |
| CY25AS      | 25.000      | series | 50      |

Frequency Range: 3.579545 MHz to 40 MHz (fund)  
27 MHz to 86 MHz (3<sup>rd</sup> O/T)

Calibration Tolerance:  $\pm 50$ ppm (Standard p/n)  
(Option)  $\pm 10$ ppm to  $\pm 100$ ppm

Frequency Stability:  $\pm 100$ ppm (Standard p/n)  
(Option)  $\pm 15$ ppm to  $\pm 100$ ppm

Operating Temp. range: 0 to 70°C (Standard p/n)  
(Option) -20 to 70°C  
(Option) -40°C to 85°C

Storage Temp. range: -45°C to 90°C

Shunt Capacitance: 7.0pF Max

Drive level: 100uW Typical

ESR: See table 1

Aging: <3ppm 1<sup>st</sup> year Max

Insulation Resistance: 500 Megaohms Min at 100Vdc

**\*\*Custom Designs Available\*\***

### Build Your Own P/N

CYS X X X X X - Freq

#### Frequency Tolerance at 25°C

- 1  $\pm 10$  ppm
- 2  $\pm 15$  ppm
- 3  $\pm 20$  ppm
- 4  $\pm 25$  ppm
- 5  $\pm 30$  ppm
- 6  $\pm 50$  ppm
- 7  $\pm 100$  ppm

#### Frequency Stability over Temp Range

|                 |               |                 |               |
|-----------------|---------------|-----------------|---------------|
| B $\pm 15$ ppm  | (0 to 70°C)   | J $\pm 30$ ppm  | (-20 to 70°C) |
| C $\pm 20$ ppm  | (0 to 70°C)   | K $\pm 50$ ppm  | (-20 to 70°C) |
| D $\pm 25$ ppm  | (0 to 70°C)   | L $\pm 100$ ppm | (-20 to 70°C) |
| E $\pm 30$ ppm  | (0 to 70°C)   | M $\pm 20$ ppm  | (-40 to 85°C) |
| F $\pm 50$ ppm  | (0 to 70°C)   | N $\pm 25$ ppm  | (-40 to 85°C) |
| G $\pm 100$ ppm | (0 to 70°C)   | O $\pm 30$ ppm  | (-40 to 85°C) |
| H $\pm 15$ ppm  | (-20 to 70°C) | P $\pm 50$ ppm  | (-40 to 85°C) |
| I $\pm 20$ ppm  | (-20 to 70°C) | Q $\pm 100$ ppm | (-40 to 85°C) |

#### Load Capacitance

- 1 Series
- 2 14 pF
- 3 16 pF
- 4 18 pF
- 5 20 pF
- 6 22 pF
- 7 25 pF
- 8 32 pF

#### Options

##### Can Height (Max)

- A 2.5mm
- AS 2.5mm w/ spacer
- B 4.0mm
- BS 4.0mm w/ spacer
- C 5.0mm
- CS 5.0mm w/ spacer

#### Mode

- 1 Fundamental 3.579545-40 MHz
- 3 3rd Overtone 27-86 MHz

Example:

CYS4F51CS-20.000 =  $\pm 25$ ppm at 25°C,  $\pm 50$ ppm 0 to 70°C, 20pF Load Cap, Fundamental, 5.0mm with Spacer, 20.000 MHz

Specifications subject to change without notice.

TD-021005 Rev. F

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[CY14AS](#) [CY7APS](#) [CY3APS](#) [CY20APS](#) [CY4DS](#) [CY7AS](#) [CY3JNS](#) [CY14BPS](#) [CY19AS](#) [CY15AS](#) [CY8GPS](#)  
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