

The HC-49USSX is the low profile (2.26 mm Max.) resistance weld type Thru Hole quartz crystal.

# HC-49USSX QUARTZ CRYSTAL

[Request a Sample](#)

## HC-49USSX QUARTZ CRYSTAL



- Cost Effective
- Low Profile
- PB Free/RoHS Compliant
- MSL 1

## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| PARAMETERS             | CONDITIONS     | HC-49USSX |     |        | UNITS |
|------------------------|----------------|-----------|-----|--------|-------|
|                        |                | MIN       | TYP | MAX    |       |
| Frequency              | Fo             | 3.570     |     | 50.000 | MHz   |
| Frequency Tolerance*   | @ +25°C        |           |     | ± 30   | ppm   |
| Frequency Stability*   | -10 ~ +70°C    |           |     | ± 50   | ppm   |
| Shunt Capacitance      | Co             |           |     | 5      | pF    |
| Load Capacitance       | Specify in P/N | 10        | 20  | Series | pF    |
| Drive Level            | DL             |           |     | 500    | μW    |
| Operating Temperature* | Topr           | -10       |     | +70    | °C    |
| Storage Temperature    | Tstg           | -55       |     | +125   | °C    |
| Aging (First Year)     | @ +25°C ±3°C   |           |     | ±5     | ppm   |

## DIMENSIONS (mm)

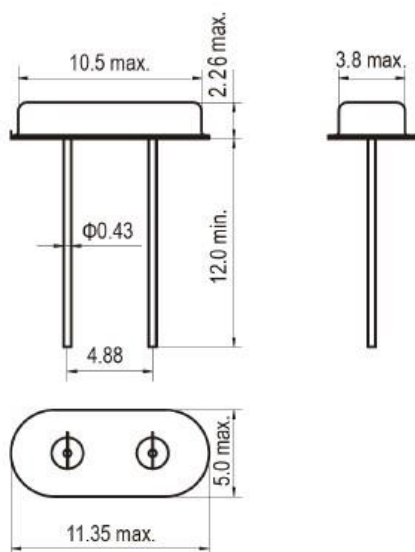


Figure 1) Side, End and Bottom

| Frequency (MHz) | ESR Ω Max. | Mode of Osc.             |
|-----------------|------------|--------------------------|
| 3.570 ~ 4.999   | 150        | Fundamental              |
| 5.000 ~ 5.999   | 120        | Fundamental              |
| 6.000 ~ 6.999   | 100        | Fundamental              |
| 7.000 ~ 8.999   | 80         | Fundamental              |
| 9.000 ~ 12.999  | 60         | Fundamental              |
| 13.000 ~ 19.999 | 50         | Fundamental              |
| 20.000 ~ 30.000 | 40         | Fundamental              |
| 26.999 ~ 39.999 | 100        | 3 <sup>rd</sup> Overtone |
| 40.000 ~ 50.000 | 80         | 3 <sup>rd</sup> Overtone |

## PART NUMBERING GUIDE: Example ECS-200-20-4VX

| ECS - FREQUENCY ABBREVIATION |                                   | LOAD CAPACITANCE         | PACKAGE      | AVAILABLE OPTIONS                                                           |                                                                                                                                |                                                                                                                                                    | PACKAGING |
|------------------------------|-----------------------------------|--------------------------|--------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
|                              |                                   |                          |              | Tolerance                                                                   | Stability                                                                                                                      | Temp Range                                                                                                                                         |           |
| ECS                          | 200 = 20.000 MHz<br>See P/N Guide | 20 = 20 pF<br>S = Series | 4VX = 2.1 mm | Blank = Std<br>A = ± 25 ppm<br>J = ± 20 ppm<br>R = ± 15 ppm<br>C = ± 10 ppm | Blank= Std<br>D= ±100 ppm<br>E = ± 50 ppm<br>G = ± 30 ppm<br>H = ± 25 ppm<br>T = ± 20 ppm †<br>W = ±15 ppm †<br>K = ± 10 ppm † | Blank= Std<br>L = -10 ~ +70°C<br>M = -20 ~ +70°C<br>Y = -30 ~ +85°C<br>N = -40 ~ +85°C<br>P = -40 ~ +105°C<br>S = -40 ~ +125°C<br>U = -55 ~ +125°C | Bulk      |

\* Specify available options in P/N.

† Contact ECS for availability over extended temp range.

Rev.2022

\* Specify available options in P/N.

† Contact ECS for availability over extended temp range.

Rev.2022

| SOLDER PROFILE                          |
|-----------------------------------------|
| Peak solder Temp +260°C Max 10 sec Max. |
| 2 Cycles Max.                           |
| MSL 1, Lead Finish Sn/Cu Matte          |

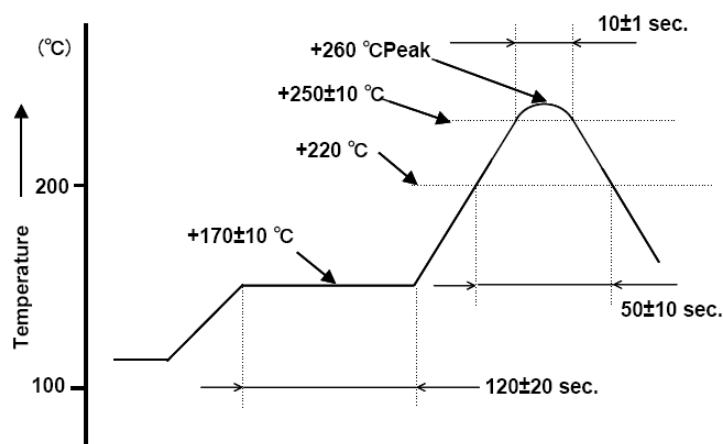


Figure 1) Suggested Solder Profile

| DEVELOPED FREQUENCIES |                 |
|-----------------------|-----------------|
| Abbreviation          | Frequency (MHZ) |
| 035                   | 3.579545        |
| 036                   | 3.6864          |
| 040                   | 4.000           |
| 060                   | 6.000           |
| 080                   | 8.000           |
| 098.3                 | 9.8304          |
| 100                   | 10.000          |
| 110.5                 | 11.0592         |
| 120                   | 12.000          |
| 122.8                 | 12.288          |
| 143                   | 14.31818        |
| 147.4                 | 14.7456         |
| 160                   | 16.000          |
| 184                   | 18.432          |
| 200                   | 20.000          |
| 240                   | 24.000          |
| 245.7                 | 24.576          |
| 250                   | 25.000          |
| 270                   | 27.000          |

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

## ECS:

[ECS-245.7-20-4V](#) [ECS-120-32-4V](#) [ECS-35-18-4V](#) [ECS-143-20-4V](#) [ECS-184-20-4V](#) [ECS-100-20-4V](#) [ECS-160-20-4V](#) [ECS-270-20-4V](#) [ECS-250-20-4V](#) [ECS-200-20-4V](#) [ECS-240-20-4V](#) [ECS-120-18-4V](#) [ECS-110.5-20-4V](#) [ECS-60-20-4V](#) [ECS-40-20-4V](#) [ECS-80-20-4V](#) [ECS-147.4-20-4V](#) [ECS-122.8-20-4V](#) [ECS-98.3-20-4V](#)