

HC-46X QUARTZ CRYSTAL

The HC-46X is the miniature low profile resistance weld type Thru Hole quartz crystal. Reduces footprint of HC-49USX by 50%.

[Request a Sample](#)

HC-46X QUARTZ CRYSTAL

- Cost Effective
- Low Profile
- Pb Free/RoHS Compliant

DIMENSIONS (mm)

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| PARAMETERS | CONDITIONS | HC-46X | | | UNITS |
|------------------------|----------------|--------|-----|--------|-------|
| | | MIN | TYP | MAX | |
| Frequency | Fo | 12.000 | | 40.000 | MHz |
| Mode of Oscillation | Fundamental | | | | |
| Frequency Tolerance* | @ +25°C | | | ± 30 | ppm |
| Frequency Stability* | -10 ~ +70°C | | | ± 50 | ppm |
| Shunt Capacitance | Co | | | 7 | pF |
| Load Capacitance | Specify in P/N | 10 | 20 | Series | pF |
| Drive Level | DL | | | 100 | μW |
| Operating Temperature* | Topr | -10 | | +70 | °C |
| Storage Temperature | Tstg | -40 | | +85 | °C |
| Aging (First Year) | @ +25°C ±3°C | | | ±5 | ppm |

| Frequency (MHz) | ESR Ω Max. |
|-----------------|------------|
| 12.000 ~ 15.999 | 60 |
| 16.000 ~ 29.999 | 50 |
| 30.000 ~ 40.000 | 40 |

Figure 1) Side, Bottom, and End

PART NUMBERING GUIDE: Example ECS-200-20-46X

| ECS - FREQUENCY ABBREVIATION | LOAD CAPACITANCE | PACKAGE | AVAILABLE OPTIONS | | | PACKAGING | |
|------------------------------|-----------------------------------|--------------------------|-------------------|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------|
| | | | Tolerance | Stability | Temp Range | | |
| ECS | 200 = 20.000 MHz See P/N Guide | 20 = 20 pF S = Series | 46X = HC-46X | Blank = Std A = ± 25 ppm J = ± 20 ppm R = ± 15 ppm C = ± 10 ppm | Blank = Std D = ± 100 ppm E = ± 50 ppm G = ± 30 ppm H = ± 25 ppm T = ± 20 ppm † W = ± 15 ppm † K = ± 10 ppm † | Blank = Std L = -10 ~ +70°C M = -20 ~ +70°C Y = -30 ~ +85°C N = -40 ~ +85°C P = -40 ~ +105°C S = -40 ~ +125°C U = -55 ~ +125°C | Bulk |

* Specify available options in P/N.

† Contact ECS for availability over extended temp range.

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

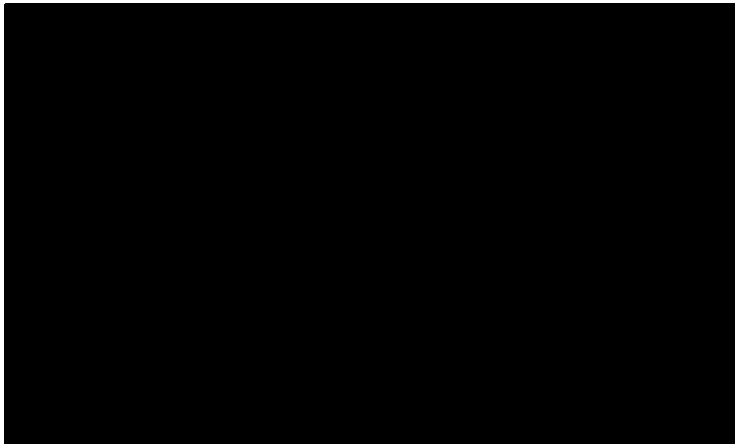


Figure 1) Suggested Solder Profile

| DEVELOPED FREQUENCIES | |
|-----------------------|-----------------|
| Abbreviation | Frequency (MHZ) |
| 120 | 12.000 |
| 122.8 | 12.288 |
| 130 | 13.000 |
| 135.6 | 13.560 |
| 143 | 14.31818 |
| 147.4 | 14.7456 |
| 160 | 16.000 |
| 184 | 18.432 |
| 196.6 | 19.6608 |
| 200 | 20.000 |
| 245.7 | 24.576 |
| 250 | 25.000 |
| 270 | 27.000 |
| 286.3 | 28.63636 |
| 300 | 30.000 |
| 330 | 33.000 |
| 400 | 40.000 |