

CRYSTAL PRODUCTS GROUP

DIVISION OF CONNOR-WINFIELD



ROUND MESA

STRIP MESA

PRECISION

MICROPROCESSOR

PRODUCT GUIDE

At Connor-Winfield we take exceptional pride in providing solutions to your frequency control design problems. Our ongoing goal is to always supply you with the right product for *your* product.

With this ever-prevailing philosophy, we will work with your design team to assure complete compatibility with your final product design. Even if that product does not currently exist. By participating at the front end of your design cycle, we will recommend the exact product you need...or co-develop to match your exact and precise design requirements.

This Crystal Products Guide is intended to give you an overview of the full line of Connor-Winfield crystal products.

Crystal Products

Total vertical integration allows Connor-Winfield to internally source all of our own quartz crystal requirements, ranging from low frequency to high frequency fundamentals and overtones, round blanks and strip crystals, base plated or finished, and in particular, inverted mesa configurations.

Because we incorporate these crystals in our own timing products, we know what specifications are required in order to meet critical demands for both short and long term performance. In fact, Connor-Winfield has set new standards of performance by producing these products for our own product and system needs as well as yours.

Utilizing high quality, pure Z growth, lumbered bar quartz, we process it to stringent specifications. Our state-of-the-art x-ray equipment assures tight angle control, while our design and processing experience provides unmatched curve purity performance. Combined with superior aging rates, your product will maintain long term stability, even at elevated temperature conditions. Controlling the manufacturing process every step of the way, all of your performance requirements will be met and often exceeded.

Round – Flat & Inverted Mesa Crystals

Both the Flat and Inverted Round Mesa Crystals are manufactured in our Shawnee, Oklahoma and Aurora, Illinois locations, with manufacturing capacities reaching up to 100,000 weekly.

Flat Crystals

- Frequency Range:
Fundamental Mode – 8.0 to 40 MHz
3rd Overtone – 24.0 to 120 MHz
- Packaging:
HC-45 VM-1 Slimline
HC-49 SD-1
- Stability: To ± 15 ppm from -40 to 85°C
- Aging: < ± 1 ppm/year

Inverted Mesa Crystals

- Frequency Range:
Fundamental Mode – 35.0 to 400 MHz
3rd Overtone – 120.0 to 700 MHz
- Packaging:
HC-45 VM-1 Slimline
HC-49 SD-1
- Stability: To ± 15 ppm from -40 to 85°C
- Aging: < ± 3 ppm/year

Filter Crystals

Built to customer specs

- Frequency Range:
Fundamental Mode – 35.0 to 210 MHz
- Packaging: HC45
- Stability: Per Customers Specifications
- Aging: Per Customers Specifications

For specific product data, performance specifications, dimensions and ordering information, please refer to our website at www.xtal.conwin.com

Strip – Flat & Inverted Mesa Crystals

Designs and manufacturers AT cut miniaturized crystals as small as 3.5 x 6.0 mm in ceramic packages. These designs cover the entire frequency range and are manufacturing friendly. These Strip crystals are true SMD devices, which require a minimal amount of real estate, thus allowing for high component population. The use of these crystals allow for higher reliability than an unpackaged crystal, as they can be completely tested and pre-aged prior to use. They are not subjected to further outgassing or other changes that may occur inside of a typical oscillator package. The rigid mounting structure also allows for immunity to microphonics or changes in the output frequency due to shock or vibration.

Both the Flat and Inverted Strip Mesa Crystals are manufactured in our Aurora, Illinois, Diehl location, and Shawnee, Oklahoma location, with manufacturing capacities reaching up to 20,000 weekly.

Flat Crystals

- Frequency Range:
Fundamental Mode –19.0 to 35 MHz
- Packaging:
Raw Blank/Base Plated 3.0 x 5.0 mm
Ceramic 5.0 x 7.0 mm
Ceramic 3.5 x 6.0 mm
- Stability: To ± 20 ppm from -40 to 85°C
- Aging: < ± 3 ppm/year

Inverted Mesa Crystals

- Frequency Range:
Fundamental Mode –35.0 to 210 MHz
- Packaging:
Ceramic 5.0 x 7.0 mm
Ceramic 3.5 x 6.0 mm
- Stability: To ± 20 ppm from -40 to 85°C
- Aging: < ± 3 ppm/year

Precision Crystals

Precision Crystals are high-end, tight tolerance crystals at both AT and SC type cuts. Used in applications where short and long term stability is critical. Manufacturing takes place in a class 100 clean room environment.

Precision Crystals are manufactured in our Aurora, Illinois, Farnsworth location, with manufacturing capacities reaching up to 5,000 weekly.

Precision Crystals

- Cuts: AT and SC
- Frequency Range:
Fundamental Mode –12.0 to 77.76 MHz
3rd Overtone – 10.0 to 77.76 MHz
- Packaging:
SD1 TO-5 RW TO-5 Coldweld
TO-8 RW TO-8 Coldweld HC45/U Coldweld
- Stability: Per Customer Specifications
- Aging:
AT Parts In - 9/Day
SC Parts In - 10/Day

Microprocessor/ASIC Grade Crystals

Connor-Winfield offers low cost/high quality crystals in a variety of footprints. These products are used to drive ASIC's where the oscillator circuit is internal to the design.

Microprocessor/ ASIC Grade Series

- Frequency Range:
Fundamental Mode –8.0 to 52 MHz
3rd Overtone – 40 to 115 MHz
- Packaging:
HC49 - Through Hole/SMD
HC45 - Through Hole/SMD
Ceramic SMT
5 x 7 mm 5 x 7.5 mm 3.5 x 6 mm
6.2 x 3.7 mm 5.15 x 3.35 mm
- Stability: Per Customers Specifications
- Aging: Per Customers Specifications

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Manufacturing Facility

ISO 9001 Certification

Connor-Winfield has been ISO 9001 certified since 1995, to ensure superior quality and repeatability in the manufacturing process.

We believe that quality begins well before our product is ever assembled. By maintaining our ISO 9001 Quality System certification, continuous improvement to our processes is a commitment we make to constantly go beyond the expectations of our customers.

For us, quality is not just a technique or system. It is an all-encompassing and uncompromising philosophy to produce products that not only precisely meet our customers' quality requirements, but also surpass them in every way.

Our Partnership Philosophy

Connor-Winfield talks about partnerships, but how do we follow through?

From design to delivery, we are committed to providing the right product when you need it to get your product to market. But the process is circular. We also track emerging developments in our customers' markets to ensure that we have the tools and data required to support your next product development effort