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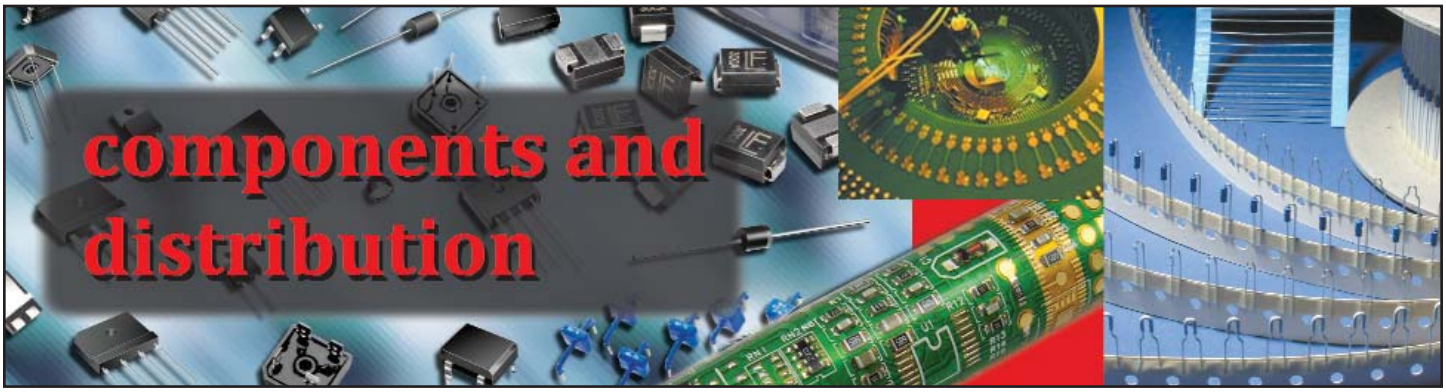

Being Active with Passives

**By Denis Kohlhagen, Director of Sales, Gowanda Electronics, Gowanda, NY,
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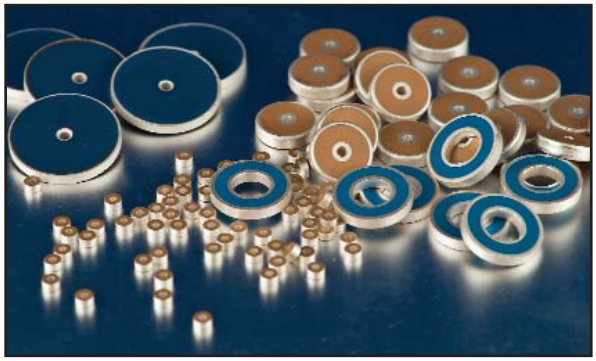
It looks like a sleepy little town in Western New York State's Allegeny Mountains, but it's home to an electronics manufacturing company whose products are in great demand worldwide — even shipping components to China (see *U.S. Tech* Oct. 2010: "Not a Foreign Concept, Gowanda Exports to China").

Gowanda Electronics has been designing and manufacturing high performance electronic components in Upstate New York for nearly 50 years. Located about an hour's drive south of Buffalo, in Western New York's ski country, the company's focus has been on creating inductor solutions for RF and power applications, and its products are in demand around the world.

With a focus on inductor solutions, Gowanda does more than supply standard products. The company designs solutions to satisfy customer needs, working closely with customers' engineers, so much so that it is often considered a member of the customer's product development team — helping to design and build application-specific inductors to address particular technical, dimensional and cost parameters. As a testament to the company's focus and success, many of these customers have been buying inductors from Gowanda for decades.



Multilayer ceramic discoidal capacitors are used exclusively in all Instec products; they are more robust than tubular capacitors and provide optimum filtering performance.

Inductor Solutions

The precision magnetic components provided by the company — and all the expertise and service that come with them — offer OEMs a unique opportunity to address their power supply management and RF signal challenges using long term, interactive, partnering relationships with Gowanda. Such relationships are especially important when off-the-shelf, mass-produced components do not address the quality and performance requirements of demanding applications.

As a result of its efforts over the years, the range of inductor solutions offered by Gowanda is extensive as is the range of markets and applications it serves. Initially offering just thru-hole inductors and tunable coils for the industrial market in the mid 1960's, the company's inductor product line has expanded and now includes surface mount products, ruggedized products, air coils and conicals, to name a few. Designs are offered to meet high temperature, high frequency, non-magnetic, lead and lead-free/RoHS, implantable, micro/ ultra-miniature and shielded requirements.

Applications for the products have also expanded over the years to include high performance equipment and instrumentation in the fields of test and measurement, medical, diagnostic, industrial automation, and control. Industries utilizing such equipment are typically not able to accept "downtime" and therefore demand the best. These applications are found in aviation, communications, health care, process/assembly manufacturing and security.

High Reliability Products

Gowanda introduced its first high-reliability Qualified Product List (QPL) products several years ago in response to a

market need for additional QPL inductor suppliers. Both RF and power QPL inductor products are now offered that meet specific military/defense standards within MIL-PRF-27, MIL-PRF-39010, and MIL-PRF-83446. In support of its QPL products, Gowanda set up its own in-house testing lab for execution of the required test protocols.

In addition to QPL products, the company also offers custom designs for military/space applications and boasts MIL-STD-981, out-gassing to ASTM-E-595, NASA-certified soldering, AS9100 certification and ITAR registration. The company is also ISO9001 certified.

Instec's eyelet-style feedthroughs are designed for soldering or mechanical insertion. A new series offers Kovar® cases; the desirable thermal expansion coefficient more closely matches the glass and ceramic materials used in the feedthroughs.

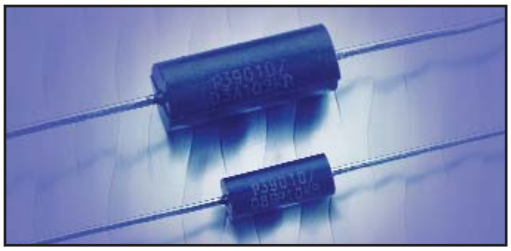
In order to meet QPL requirements, extensive life testing and robust manufacturing processes are required. The resulting higher level of reliability associated with Gowanda's QPL products garners interest from design engineers in non-military applications too, where the QPL status translates into assurances of robustness and reliability for commercial products, many of which utilize the same production lines as the company's QPL products.

For this reason, the company's inductors are utilized in other applications such as aerospace, satellite/ space applications and transportation systems where its QPL mil-standard experience and manufacturing processes mean increased confidence for customers in non-military applications. Other demanding applications utilize Gowanda products too.

As global energy consumption ramps up around the world, oil exploration takes on greater importance, often with increasing technical challenges. Gowanda's newer high-temperature inductors are designed for down-hole applications where oil exploration and drilling equipment require electronic components that can accommodate the extreme environments and still meet the technical challenges encountered in the field.

Most of Instec's hermetic and resin sealed EMI filters are available with three-week lead time.

The medical market is continually advancing, looking for ways to improve medical imaging processes, systems and data delivery. Here, too, Gowanda's inductor designs have evolved to meet the demands for high performance and reliability in medical imaging systems, implantable devices, life sustaining and neuro-stimulating applications. A line of non-magnetic inductors is also available and the company is ISO13485 certified in support of its medical market customers.



Gowanda offers QPL products for military/defense and other demanding applications.

Entrepreneurial Foundation

Like many businesses, Gowanda started out as an entrepreneurial, family-run company in the mid 1960s. With its small and nimble structure, the company took pride in its responsiveness, flexibility, and willingness to solve customer challenges. Investments occurred in connection with product and market expansions, but they were self-funded. Creative solutions and cost-effective investing were critical for success.

Over the years Gowanda established in-house lab/testing facilities for QPL and other product pursuits, cleanrooms for contaminant-sensitive customers, and custom molding capability to address specific customer needs. In fact, the company designed and built much of its own specialty manufacturing equipment to meet the needs of particular customers.

Growth Strategy

To help the company reach the next level of growth, an outside investor group — Addison Capital Partners — was recently invited in by the management team to assist the company with the development and implementation of its growth strategy.

That group evaluated Gowanda's many strengths, including its global sales network, strong brand recognition, and long-term relationships with Fortune 500 companies around the world. They also talked to Gowanda's customers and listened to their suggestions and needs. The resulting growth strategy for Gowanda included a recommendation to offer more passive components than just inductors and to expand geographically, especially into Europe.

After evaluation of several opportunities for expansion into other passive components Gowanda completed the acquisition of Instec Filters.

"By acquiring Instec Filters we are now able to leverage the strengths of both companies and offer more solutions and products to our customers around the world," said Claude Badawy, Chief Operating Officer, Gowanda Electronics.

Inductor and Filter Synergies

Instec Filters has been designing and manufacturing EMI/RFI filter products for nearly 40 years. The company manufactures filters that offer EMI protection for a range of applications, from low frequency power applications to the microwave range for communications applications.

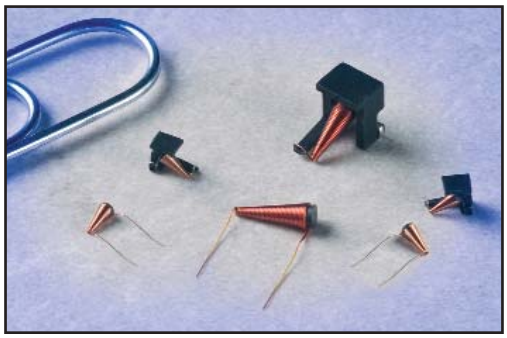
Products include solder-in EMI filter/feedthroughs, bolt style hermetic filters, and bolt style resin sealed filters. Multilayer ceramic discoidal capacitors (MLCC) are used exclusively in all Instec products because they are more robust than tubular capacitors and provide optimum filtering through their internal electrode design. Instec can assist customers with filter plate assemblies too.

Similar to Gowanda, Instec's markets include aerospace, communications, energy (mining and oil exploration), instrumentation, medical equipment, military, and power. Also like Gowanda, Instec offers lead-free RoHS-compliant products as well as the military-preferred lead-containing assemblies. It also does custom designs and value-added assemblies in addition to catalog offerings. The companies are similarly focused on designing solutions for customers, not just providing standard off-the-shelf products.

Like Gowanda, Instec is nimble and responsive to customer requests, priding itself on its ability to provide quick turnaround on quotations and prototypes. It

also boasts short lead-times in an era when component lead times are typically anything but short.

Instec had manufactured its products in California for many years. After the acquisition by Gowanda, the manufacturing was relocated to a Gowanda Electronics facility in Arcade, NY. This was done to leverage the strengths of both companies, enhance communications between the groups, and to assimilate the products and technologies.



Gowanda introduced its "C" conical series in response to market demand for more standard and custom broadband conical design options for communication applications.

European Market

Interestingly, Instec Filters has a prominent position in the European market, but less so in the USA due to its historical sales focus on the European market.

"We are excited about the opportunity to work with Gowanda Electronics and look forward to expanding the market presence for Instec Filters, especially in the USA," said Amy Green, Production Manager, Instec Filters.

Gowanda Electronics and Instec Filters are now taking the combined strengths of the two companies out to the marketplace. Instec is assisting Gowanda with market penetration in Europe, while Gowanda is helping Instec with market opportunities in the USA.

Because Gowanda has such strong branding in the USA, Instec's filter products will be offered under the Gowanda brand in the US market. The parent company's website is being updated to reflect this additional product line within its portfolio.

Some of Gowanda's representatives and distributors have already expressed interest in carrying the Gowanda/Instec filters as part of their portfolio. They appreciate the opportunity to have more passive products to offer to their customers, many of whom purchase both inductors and filters for their organization's needs.

That should come as no surprise as Instec's filters fit similar markets as Gowanda's inductors. With consolidation of supply chains, customers embrace the opportunity to purchase more than one product line from an established supplier.

Gowanda and Instec initially exhibited their new combination of inductors and filters to the global RF market at the International Microwave Symposium in Montreal earlier this year. The companies will promote their expanded passives line to the European electronics market at electronica 2012, in Munich, Germany.

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