Solutions for the Most Demanding Designs
Corporate Capabilities Brochure
About Gowanda Components Group

Gowanda Components Group (GCG) is a US-based manufacturer of high performance electronic components that support the needs of electronic design engineers around the world. Areas of expertise include magnetic devices, specialty filters and custom-designs. These products enhance the performance and reliability of electronic systems in space flight, aerospace, commercial, communication, defense and medical applications.

The individual business units that support GCG are Gowanda Electronics, Communication Coil, TTE Filters and Instec Filters. With a combined history of 170+ years in business, these organizations have earned a well-respected and important presence within the global electronics industry.

Defense, Space and Aerospace

GCG’s commitment is to become a virtual member of the customer’s product development team. Our staff actively participates in the early stages of design development when footprints and configurations are still open for review and change, thereby providing critical guidance and recommendations for cost-effective product design and development. We continue this collaboration with the team long after the design stage is complete, ensuring that the right component, whether off-the-shelf or custom-made, is designed, specified and manufactured per the requirements of the application.

We are committed to being a leader in the military, space and aerospace components field. We offer QPL (Qualified Product List) products and other support/service.

MIL-PRF-27
MIL-PRF-27 Level T
MIL-PRF-15305
MIL-PRF-39010
MIL-PRF-83446
MIL-STD-981 Class B & S
EEE-INST-002
AS 9100
AEC-Q200 Qualified
ISO 9001
ITAR Registered

Featuring:
• Operating temperatures from -55°C to +220°C
• Environmental testing including thermal shock, life test, mechanical shock, vibration and radiographic
• Lot & date code traceability as required
• Application-specific designs that will meet your stringent electrical and mechanical requirements
• Ruggedization of components designed specifically to withstand the rigors of the military, space and aerospace markets
• Micro/Ultra-miniature components for hybrid applications
• Lead (Pb) bearing terminations standard
• No design obsolescence

Medical

At GCG, we recognize the critical role and responsibility that comes with being a strategic supply partner to a medical device manufacturer. We have been in this field for decades, and have earned our stripes by recognizing the key role and responsibility that the partner title carries with it. We understand exactly what it takes to help our partner create strategically recognized solutions.

GCG’s commitment to medical device manufacturers has been validated, not only by our track record of success, but by making certain that internal technical development projects and certification programs are in place to support that commitment.

ISO 13485 – Gowanda was the first manufacturer in our industry to gain this rigorous certification in support of our on-going commitment.

Risk Management Analysis is Key to ISO 13485:
• Design / Process Failure Mode Effect Analysis
• Measurement System Analysis
• Gauge R & R Evaluations
• Heightened Documentation Control

Featuring:
• Ruggedization of components designed specifically to withstand the rigors of the medical marketplace
• Micro/Ultra-miniature components for in-vivo and in-vitro applications
• In-house cleanrooms - class 100,000
• Creation of standard and fully customized design solutions for the most demanding applications
• A full line of standard off-the-shelf non-magnetic components that significantly improve image quality in MRI applications
• Custom solutions are available upon request
Product Design Capabilities

By working with our customers at the design level, GCG is able to help accelerate product development cycles AND enhance product design and performance. For application-specific products, we strive to provide rapid design and development of custom components, to address customer needs for reliability, differentiation and faster time to market. GCG's custom designs respond to the need for components which can do more than what is offered by off-the-shelf products. For standard product introductions, we continually bring new product offerings to the market which are aligned with the latest technological developments in the targeted sector. New product introduction normally entails but is not limited to the following component development cycle:

- Identify Parameters/Specifications
- Initiate Design Phase
- Activate Development Phase
- Testing/Qualification
- Manufacturing Processes
- Compliance and Certification

GCG's extensive engineering experience, technical competency and industry relationships give us the necessary foundation to navigate through your component development cycle quickly. Well-informed decisions on the most appropriate configuration, the best materials, the critical electrical requirements, and the ease of manufacturability are key elements considered in the design and development phases for a component's application.

Manufacturing Technologies Group

The Manufacturing Technologies Group at GCG designs and develops prototype tooling and unique production equipment to support product development initiatives at the company, in connection with specific customer requirements or general market needs. The vertical integration provided by this group allows us to offer much more than just “catalog” products; GCG designs and delivers solutions.

The group consists of engineers and other professionals, and is housed in a fully-equipped, state-of-the-art, machine tool and design center which is located in a facility near GCG's corporate headquarters.

The facility has an extensive array of prototype forming equipment, software tools and ancillary systems to assist in the development of soft tooling which can be utilized for proof-of-concept prototypes or for small production quantities. The group is also equipped to fabricate unique production equipment, which may be needed to enable cost-effective production of custom and/or new-to-market electronic components.

Auto-CAD is utilized in the design process to create, manage and document design concepts, specifications and revisions. This tool also enables the company to effectively and efficiently communicate with customers throughout the design and development process, since such electronic collaboration speeds up the process and improves time-to-market.

**HAAS VF2 Super Speed**
- Extreme repeatability CNC Control
- 24 Tool Changer
- Large 30 x 16 Axis Travel
- 12,000 RPM Spindle
State-of-the-Art Manufacturing

GCG is supported by a family of vertically integrated manufacturing locations, each of which contributes to our corporate wide vision. This internal strength allows GCG to consistently meet our customers’ expectations for quick turn-around of standard and custom solutions.

Transfer Molding Capabilities

As a vertically integrated manufacturer, Gowanda has vast resource capabilities and years of experience with Custom Molding, and specifically with Transfer Molding. From in-house design development, to mass production, we have an experienced design staff that can work in unison with your design team to create a solution which will help set you apart from your competition. Most of the challenges result in solutions for placement and also increase manufacturing throughput for our customers. We use only the highest semi-conductor grade thermoset epoxy in our designs. Our only limitation is your imagination.

Examples of our molding solutions include but are not limited to:
- Application-specific bases
- Epoxy over-molding for environmental protection
- Conversion from thru-hole to surface mount
- Over-molding capabilities for intellectual rights proprietary protection
- Unshielded and shielded compounds available for EMI reduction

Environmental Cleanrooms

GCG’s cleanrooms allow the company to provide a higher level of component manufacturing services to customers with applications that require control of environmental contaminants. As the trend towards miniaturization continues, and products and systems get smaller and more sensitive, the need to control particulates and other forms of contamination will increase.

Facilities
- Two “Class 100,000” cleanrooms
- Easily upgraded to Class 10,000

Capabilities
- Complete production - wind, assemble, package components
- Process-specific operations - to address a unique need or requirement
- Value-added services - to complement or augment customer operations

Applications
- Medical - devices and components requiring cleanroom conditions
- Military - highly sensitive communication or power systems
- Space - components which perform at the highest level; avoid particulates and FOD
As the market leader in providing high reliability components to the electronics OEM marketplace, GCG offers an in-house environmental lab with unmatched capabilities to establish the consistent performance characteristics required to meet the most demanding designs. Gowanda’s environmental technical services are also available on a contracted basis.

*In support of internal product qualifications

Environmental Laboratory - DLA Approved

Capabilities

Temperature Cycling Chamber
- -65°C to +180°C
- Cycling Rates from 5°C to 10°C /min

- -65°C to +200°C

Shaker System – mil-spec & custom profiles
- Maximum Sustained Vibration Force: 100g
- Maximum Shock Force: 100g
- Vibration: MIL-STD-202-201, -204 & -214

Altitude Chamber – MIL-STD-202-105
- Maximum Altitude: 80,000 Feet
- DWV and IR at Altitude

10 Benchtop Chambers
- -75°C to +200°C
- High Temperature Operation
- Temperature Rise
- Low Temperature Storage

Solderability via Steam Aging Chamber – MIL-STD-202-208
- Up to 99 Hours of Continuous Testing

Force Gauge
- Maximum Force: 50N
- Bond Strength

Reflow Oven
- Maximum Temperature: 270°C

Life Test Chamber – MIL-STD-202-108
- Maximum Operating Temperature: 260°C
- Cyclic Load Profile


Humidity Chamber – MIL-STD-202-103
- Steady State
- -75°C to +200°C
- 20% to 90% Relative Humidity

- Temperature & Humidity Variability

- Anti-Corrosion Testing

- Resistance to Solvents

Terminal Strength – MIL-STD-202-211

Insulation Resistance – MIL-STD-202-302

DWV – MIL-STD-202-301

HiPot Tester
- Maximum AC Voltage: 6kV
- Maximum DC Voltage: 5kV
- Insulation Resistance (IR)
- Dielectric Withstanding Voltage (DWV)

Voltech AT3600 Transformer Tester
- Maximum Test Frequency: 1MHz
- Maximum Test Current: 25A
- Maximum Test Voltage: 3kV
- Fast Testing of Complicated Transformers

High Power AC Testing
- Frequency Range: 0.1Hz to 2MHz
- Maximum Voltage: 400Vp-p
- Maximum Current: 7570mA
- Pulse, Ramp, Sine, Square & Triangle Waves

Other
- Failure Analysis Reporting and Documentation
- High Frequency Testing Capability to 70GHz

Magnetoscope 1.069
- Assures magnetic-free designs
- Measures magnetic flux density, absolute or gradient
For over 50 years, Gowanda Electronics has been providing high quality, high performance component solutions addressing the needs of OEMs. The company’s strategic focus on high-rel solutions for space and flight applications is supported by ongoing investments in processes, controls and testing. As the market leader in providing high reliability inductors, conicals, transformers and magnetics to the electronics marketplace, the relentless pursuit of quality and excellence has permitted Gowanda Electronics to become a leader in the industry. Our knowledgeable engineers and customer service staff are eager to help find the solution that best suits your needs.

- MIL-STD-981 Class B & S
- MIL-PRF-83446 – first with 0603/0805
- MIL-PRF-27 – first with Level T
- MIL-PRF-39010 – now Level R
- MIL-PRF-15305 – now 18 MS numbers
- All designs offered with SnPb terminations
- Custom Designs – per MIL-STD-981
- In-House Lab Testing and Upscreening

sales@gowanda.com

Since 1944 Communication Coil has been designing and producing custom, high reliability filter networks, RF coils, chokes, inductors, baluns, toroids and power magnetics for communications and signal processing equipment in military, industrial, avionics, satellite, telemeter, marine, GPS and commercial applications.

Using the latest CAE and CAD technology, our engineers use patented and proprietary synthesis software to perform complete simulations of your unique design requirements. Our optimization system enables us to rapidly reproduce reliable, up-to-date designs.

We will custom design networks to meet the exacting requirements of time or frequency domain and attenuation levels required for tomorrow’s needs. Each and every unit is 100% parametric tested. Our ultra-modern computerized network testing equipment also provides complete printouts and performance curves of each component, if desired. Complete lot traceability is available. Our award-winning quality control program is approved by major customers worldwide.

info@communicationcoil.com
Established in 1956, TTE continues its pioneering leadership role in the design, development and manufacture of high quality RF and microwave filters. TTE filters are available for any frequency from 100Hz to 26GHz – and to 40GHz in some instances.

Passive filter products include bandpass, band rejection (notch), highpass, lowpass and high power lowpass designs covering the RF and microwave frequency spectrum. Diplexers, triplexers and multiplexers are also available for applications requiring multi-functionality.

Design capabilities include LC (lumped element), combline (cavity) and helical. Topologies include Bessel, Butterworth, Chebyshev, Elliptical Function and Gaussian.

Filters from TTE are used to enhance communication and signal processing in cellular, data acquisition, electronic support, radar, satellite, sonar, telecommunication, telemetry and wireless applications in commercial, industrial, medical and military/defense environments.

TTE is a leader in customer service. The company maintains a large inventory of standard materials to enable delivery of most TTE products within 3 weeks. Expedited lead times as short as 3-4 days are available on many products. All TTE products are made in the USA and include a limited warranty.

RF and Microwave Filters to 26GHz
• Experts in Application-Specific Designs
• Bandpass, Bandreject, Highpass, Lowpass, High Power Lowpass and Bias Tees
• Bessel, Butterworth, Chebyshev, Elliptical Function, Gaussian
• Diplexers, Triplexers, Multiplexers and other Networks
• Bias Tee Filters to 40GHz from Stock
• Lowpass LC9S Series from Stock
sales@tte.com

Instec Filters is a designer and manufacturer of EMI/RFI filters and filter assemblies used to suppress electromagnetic interference. Instec filters are used in a wide range of applications including military/aero, medical, high frequency/microwave, communications and industrial.

At Instec, we pride ourselves on service. We offer quick responses to quotations and design requests as well as the shortest lead times in the industry. Taking advantage of our lean organization and low overhead structure, we offer very competitive pricing and the highest quality products.

Our test facilities can up-screen any of our filters to MIL-PRF-15733 and MIL-PRF-28861 requirements. Other source control drawing requirements can be met as well. Our products can be manufactured to meet Pb-free requirements or can be manufactured with lead bearing solders as is demanded in many military applications.

Instec designers can partner with user engineers to create custom solutions to their filtering requirements. Instec also offers value-added assembly services for customers who wish to outsource some of their assembly operations.

sales@instec-filters.com
RoHS Compliant and Lead-Free Alternatives

In its ongoing commitment to supplying superior quality products to the electronics industry and meeting worldwide environmental regulations, Gowanda Components Group offers RoHS compliant components produced in accordance with the 2002/95/EC European Parliament Restriction of Hazardous Substances Directive banning the use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE).