Custom magnetic solutions designed for performance and reliability

Power
Switching
Filtering

TRIAD
**Hi-Power Magnetics (Up to 2,000 W)**

**Hi-Frequency Magnetics (>2 MHz)**

**Flat Wire Magnetics**

**Planar Magnetics**

**Bobbin Construction**

**Toroidal Magnetics**

**Power Supplies**

**Value-Added PCB Integrated Magnetics Assemblies**

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**Custom magnetics specialists**

While standard transformers and inductors meet most of today’s typical electronic circuit requirements, they have their limitations. If you’re designing advanced equipment for the automation, computer, industrial controls, medical, networking, telecom or other industries, then you may need a custom magnetics solution. The best time to make that decision is early in the design process, which gives you the maximum flexibility.

Triad Magnetics specializes in custom magnetics technology solutions. We’re a global leader in the design and manufacture of transformers and inductors for industrial, commercial and consumer applications. Our expert engineering staff, modern test labs, automated factories, certified quality, excellent service and competitive cost ensure your success. Bring us your next applications challenge, and we’re ready with advanced magnetics technology solutions. In the 1950s, Triad first helped Leo Fender and surf guitarist Dick Dale turn up the volume on amplifiers, which led to the birth of Rock & Roll. Triad was next the dominant supplier to the Television industry in the 1960s. Transformers from Triad also supported the Apollo mission to the Moon, and then the first microwave ovens in the 1970s. The Triad brand played a leading role in the rise of industrial automation and controls, electronic ballasts for lighting systems and innovative medical devices in the 1980-90s.

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**A dependable partner**

Triad is a subsidiary of the Axis Corporation, headquartered in Taiwan, with manufacturing facilities in China. Our magnetic components business today serves customers in Asia, Western Europe and the USA. With sales approaching one hundred million dollars and shipments of millions of units in 2005, the Axis Corporation is listed on the Taiwanese OTC (code 6292). The company’s...
At Triad, we’ll help you get your custom magnetics project moving on a fast track. Our field applications engineers are available to visit you in person or by video conference, telephone or email. They’ll explain the advantages of our unique, concurrent design process, which speeds you from spec to prototype, to test, to qualification, and final design approval. You can count on Triad.

customers include a wide range of businesses from small start-up ventures to large Fortune 500 companies, such as OSRAM Sylvania and Itron.

Your local design center
In 2003, Triad opened a new 22,000-square foot modern engineering, service, logistics and warehouse center in Southern California. Our facility in Corona is located about one hour from the port of Los Angeles, with both domestic and international airports found nearby within 30 minutes to one hour. This facility also houses our standard product magnetics business, which is sold directly through our extensive distributor network and finds application in a wide range of industrial, commercial and consumer devices. The Triad customer service, field applications engineering and design engineering staff offers hundreds of years of collective experience in magnetic components. We also utilize the latest in automated design, laboratory testing, manufacturing software and equipment.
**Power, switching and filtering applications**

As industrial, commercial and consumer equipment continues to become smarter, smaller and faster, the importance of power management and filtering continues to grow in circuit designs. Today’s newest IC and ASIC based circuit designs require sophisticated magnetic components to support higher power, higher frequencies, higher densities and much more.

With operating frequencies spiraling upward in new equipment, power supply designers, for example, must now consider the characteristics of magnetic components, as their effectiveness varies based on switching frequency and the application. There are also new parameters to consider when selecting magnetics for: isolation, energy storage, current sensing and more. At Triad, we’re ready to help with our expert engineers in fully equipped facilities.

**Design Centers:** US and Taiwan

**Prototype Labs:** US, China and Taiwan

**Production:** US, China and Mexico

Let us help you by asking the right questions to develop a custom magnetics component that meets your performance, reliability, long-life and cost requirements. Our capabilities include designing to a wide range of internationally recognized quality and performance standards:

- UL Insulation System Classes B (130° C) through R (220° C)
- FCC Part 68
- CSA
- ISO9001-2000
- TUV, VDE, CE, IEC
- Mil-T-27E

**The Experience Factor**

We have often heard systems design engineers refer to the Magnetics design engineering process as “black magic” or a mixture of intuition and mathematics.
This marriage of creative thought and number crunching has taken up permanent residence at Triad where we realize it is not really “black magic,” but a direct result of what we call the Experience Factor.

There are multiple variables in transformer design, i.e., core material, flux density, frequency, winding structure, distributed capacitance, load requirements, regulation, inductance, reflected impedance, distortion, and mechanical considerations. These variables all interact with each other in such a manner that one cannot change without changing another. These and other interacting factors are all turned over and over in the “black magic” melting cauldron that is the collective mind of our engineering staff.

Activated by the education of mathematics and tempered with the creativity of years of practice, the magnetics engineering Experience Factor quickly places all the variables in their proper perspective, resulting in a product design that is functional, reliable, efficient and replicable. The next time you have a magnetics requirement and are looking for someone to perform the “black magic” on your design, remember the Experience Factor and call Triad.

**The custom design process**

When you bring a custom project to Triad, we will guide you from a review of your circuit design requirements to the final delivery of your first production order. Our concurrent design engineering process can assist you in two important ways:

> By designing-in critical design performance advantages that help you achieve performance and cost advantages.

> By speeding time-to-market with compressed design, qualification and procurement cycles for rapid ROI.
Manufacturing magnetic components

Our company’s modern corporate headquarters facility in Taiwan includes advanced R&D, test lab and prototyping facilities to support our design centers in the U.S. and around the globe. Your design will be reviewed early in the process by our production engineers to ensure its compatibility with the automated assembly lines at our factory in Qing Xi, China, which include:

> Dedicated Customer Custom Magnetics Assembly Lines
> Standard Product Transformer Assembly Lines
> Standard Product Inductor Assembly Lines
> Integrated Product PCB Assembly Lines

In addition to ISO9001-2000 certification, we are dedicated to a continuous improvement process based on Kaizen principles. We are constantly refining all aspects of our business based on the Kaizen 5S Disciplines that include:

> Sorting: Keeping our work areas free of unnecessary clutter
> Setting In Order: Organizing our assembly line work flows
> Shining: Maintaining all equipment for peak performance
> Standardizing: Documenting all process methodologies
> Sustaining: Auditing our performance to our own standards

Our China manufacturing facility employs more than 2,000 people, who are well educated and trained in all aspects of electronics manufacturing. Our staff is highly trained, motivated and rewarded when the company meets its business objectives.

Precision core gapping

Our precision core gapping machines allow us to control performance characteristics with computer accuracy, making it possible to modify standard materials without assistance from external core vendors.
**Flexible manufacturing lines**

Seventy percent of all Axis Corporation production orders (standard and custom devices) are considered small by industry standards -- under 5,000 pieces (thirty percent are under 1,000 pieces). Our cellular manufacturing lines are exceptionally flexible, which allows us to keep small production runs at competitive costs that often approach the high-volume pricing of other manufacturers.

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**Wire winding**

Our CNC wire winding machines ensure reliable, high-quality coils and bobbins. They are designed to process fine to heavy gauge wire from 54 to 4 AWG.

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**High-temperature soldering**

We use fine pitch solder printing machines and high temperature soldering equipment. Lead-free processes meet environmental requirements including ROHS.

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**Inspection**

Automated optical inspection and in-line circuit testing systems are located throughout the manufacturing process for high quality and reliability.

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**Environmental Testing**

Our environmental test chambers ensure that our product meets your operating specifications for resistance to temperature, shock, humidity and vibration to MIL-T-27E criteria or higher upon request.
Our customer service focus is to ensure complete satisfaction

When you select Triad to provide custom magnetic solutions, we consider it a commitment to your total satisfaction. From the company’s President down throughout the organization, we like to say that we’re, “customer-centric” in our business focus to provide:

> Responsive Service
> Innovative Product Solutions
> Certified Quality
> Price Competitiveness
> Dependable Delivery

Our commitment to customer satisfaction means that we recognize your experience -- good or bad -- will determine the success of a supplier relationship that we’re striving to make a long-term one. To ensure your satisfaction, we have adopted our 4A Customer Philosophy that encourages us to be:

Active in the pursuit of excellence in all we do
Amiable in our relationships with customers and suppliers
Advanced in our application of technology
Always committed to future growth

That means Triad Magnetics is just a phone call away. We’re ready to visit you, or you can visit us on the web, or we’re available with our video conferencing capabilities. You’re business and success is important to us. We’re the dependable custom magnetics design and manufacturing partner that you can trust to deliver high performance, reliability, quality and value anywhere worldwide.