



POSITION TITLE: Senior Electrical Engineer
DEPARTMENT: Engineering
REPORTS TO: Sr. Director of Engineering
FLSA: Exempt
LOCATION: US-Woodridge, IL

INVENTUS POWER

Inventus Power, founded in 1960, is the leading provider of advanced battery and power systems for global OEMs. We specialize in the design and manufacture of Li-ion battery packs, smart chargers, and efficient power supplies across a broad range of portable, motive & stationary applications.

With headquarters in Woodridge, Illinois and manufacturing facilities in the United States, Mexico, Brazil, China and Malaysia, we are strategically positioned to support the needs of global brands.

From design & engineering to performance testing & mass production, Inventus Power provides accelerated end-to-end solutions. Our broad market/application expertise, technology agnostic approach, global footprint, and vertical integration allow us to deliver safe, reliable & innovative power solutions at an exceptional speed to market.

POSITION SUMMARY

The Senior Electrical Engineer will be responsible for designing and conducting analysis to support development of battery packs, docking stations and chargers. Power supply experience is desirable. The Senior Electrical Engineer leads concept and design phase activities, including design reviews, and keeps the cross-functional team and key stakeholders updated on electrical design progress. Assignments will cover a broad spectrum of products and applications, requiring appreciable initiative, originality, ingenuity and excellent problem-solving skills. The successful candidate will have excellent analysis skills, advanced electrical engineering experience and a deep understanding of power electronics. Experience designing lithium ion battery management systems is highly desirable. Expertise in design of medical and military products is required for this position, as is demonstrated ability in technical leadership.

ESSENTIAL FUNCTIONS

- Experience with design and documentation requirements for military and medical products
- Provide guidance, analysis and technical guidance on the latest technologies for use in product line
- Perform complex testing and technical analysis as part of the qualification process
- Root Cause analysis using 8D methodology
- Takes ownership of the electrical design for projects with very little supervision
- Works effectively in dynamic, fast-paced environment that requires cross-functional teamwork to assure electrical system level integration and design for test and manufacturability, including personnel and teams in various global locations.
- Acquires thorough awareness of customer requirements, including any complaints, and manages these requirements throughout the course of the design to ensure that the customer's expectations are met or exceeded
- Conversant with and experienced in design for compliance with domestic and international regulations and standards (ex: MIL-STD-810, MIL-STD-461 Intrinsic Safety standards for various

classifications, divisions and locations; 21 CFR 820, Medical Device Directive and IEC 60601-1 experience a plus)

- Plans, executes and documents complete electrical designs, including but limited to: schematic capture, PCB layout, internal DFM and DFT analyses, DFM analyses with PCBA suppliers, and BOM generation
- Participates in risk analysis activities, including lead role in electrical DFMEAs
- Performs full analysis of components for voltage, current, power dissipation and thermal de-rating
- Designs and documents robust hardware architectures and structures suitable for use in high reliability applications
- Evaluates prototypes, documents their performance to specifications and identifies necessary improvements
- Prepares technical reports
- Provides sustaining support as required for existing products
- Helps establish and maintain a culture of learning, openness and accountability
- Performs additional related duties as assigned

GENERAL QUALIFICATIONS AND EXPERIENCE

- Minimum of Bachelor in Electrical Engineering and at least 7 years of relevant experience in electronics design and manufacturing (Masters preferred)
- Strong understanding of EMI and EMC mitigation
- Previous design experience meeting MIL-STD-461 and MIL-STD-1275 standards
- Design of Experiments (DOE)
- Design for Manufacturability (DFM)
- Failure Mode Effects Analysis (FMEA)
- Experience with embedded microcontroller and microprocessor design
- Ability to interpret customer requirements and develop detailed design documents
- Must have a solid understanding of digital and analog circuitry.
- Strong understanding of DC power electronics
- Strong quantitative, design, analytical, and problem-solving skills
- Strong verbal and written communication skills
- Strong knowledge of Microsoft Office products
- We are an ITAR facility and hire only US persons, who are defined as U.S. citizens or green card holders.

Physical Requirements:

- See attached Addendum A

Addendum A

PHYSICAL REQUIREMENTS AND WORK ENVIRONMENT												
1. Check the frequency and number of hours a day the worker is required to do the following specific types of activities:												
ACTIVITY	FREQUENCY		# OF HOURS A DAY									
	CONTINUOUS	INTERMITTENT	1	2	3	4	5	6	7	8	8+	
1a. Sitting	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2b. Walking	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3c. Standing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4d. Bending	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5e. Squatting	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6f. Climbing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7g. Kneeling	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8h. Twisting	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9i. Lifting	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LIFTING <input type="checkbox"/> 0-10 lbs. <input type="checkbox"/> 10-15 lbs. <input type="checkbox"/> 15-30 lbs. <input checked="" type="checkbox"/> Over 30 lbs.												
2a. HAND MANIPULATION REQUIRED? <input checked="" type="checkbox"/> Yes (If yes, complete a, b, c, d, e) <input type="checkbox"/> No												
2b. Repetitive hand movements? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No												
2c. Simple Grasping?	Right Hand <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				Left Hand <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>							
2d. Power Grasping?	Right Hand <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				Left Hand <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>							
2e. Pushing Pulling?	Right Hand <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				Left Hand <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>							
2f. Fine manipulation:	Right Hand <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				Left Hand <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>							
3a. Does the job require worker to reach or work above the shoulder? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Frequency (ONCE IN A WHILE)												
3b. Reaching at or below shoulder level? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Frequency (ONCE IN A WHILE)												
4. Does the job require use of his/her feet to operate foot controls or for repetitive movement? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>												
5. Are there special visual or auditory requirements? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Describe: Working with computer terminal and telephone												
WORK ENVIRONMENT:												
6a. Does the employee work near moving mechanical parts; in high, precarious places; and in outside weather conditions? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>												
6b. Is the employee exposed to fumes or airborne particles? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>												