

Derek S. Koonce

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Summary: An accomplished engineer with extensive analog, digital and magnetic design for power supply, electro-optical and electro-mechanical applications. Able to provide end-to-end marketing, supervisory, engineering and field support.

EXPERIENCE

5/07 to present Electronic Development Engineer

Aerometals

Repair of aging military electronic equipment. Efforts included flex circuit replacement and hybrid redesign; both of which require low-cost for development and production. Worked on accelerometer replacement from Whetstone Bridge to modern components - including unique power supply development. Other tasks include strain gage assembly and compensation, machine shop repair, and various PCB manufacturing and testing. Designed next generation Filter Health Monitor for ease of customizing. Designed rigid-flex circuit for Inlet Barrier Filter signal conditioning that includes filtering and signal conditioning.

5/00 to present Consultant / Technical writer

DDK Interactive Consulting Services

Provide technical consulting services in the electronics industry. Services include Market Development guidance, technical writing services, electronic design, and system design services. Design skills include power supply, instrumentation (temperature, pressure, acoustic, and humidity), electro-optic and electro-mechanical designs.

03/07 to 05/07 Electronic Designer

Aerojet

Worked on the power electronics for NASA's Orion program, focusing on the Launch Abort Attitude Control. This involved working with high power MOSFET selection and packaging requirements, as well as low-voltage control circuitry. Other efforts included Electrical-Electronic Parts List Management development for the program, and lightning assessment / vulnerability on Orion.

04/06 to 03/07 Applications Manager / Business Development / Chief Technical Officer

Monolithic Microsystems

Developed power management semiconductor ideas and circuits for chip / IC integration. Worked on business plan development and other efforts in order to obtain start-up financing. This included discussions with angel investors and venture capitalists.

2/04 to 04/06 Applications Manager, Standard Product Group

JSI Microelectronics

Developed product concepts for Power-over-Ethernet and off-line power supply integrated circuits. Product development included market study research, technical writing, financial justification, and relationship development with potential customers. Attended and contributed to the PoE-Plus IEEE 802.3 Standards Committee meetings.

5/00 to 2/04 Power MOSFET Market Development Manager, Computer Segment

Vishay-Siliconix

Managed \$140M business unit for the MOSFET Computer Segment. Tasks included Business plan development, and visits to customer sites in Japan, Taiwan, Korea, China, England, Germany and various locations in the United States. Identify customers' future MOSFET requirements. Convey requirements to process development, package engineering and product engineering groups. Coordinate development of 50 products and packages, and a product line among the various engineering groups. Provide final products to customers that meet their performance and cost requirements. Be involved in hard-to-solve MOSFET problems to coordinate a resolution that customers would accept.

10/95 to 5/00 Senior Applications Engineer

Supertex, Inc.

Provide application support using Supertex, Inc. high voltage integrated circuits. This involved engineering disciplines such as analog design, digital design, electro-optical design, thermal engineering, mechanical engineering and others. Worked closely with customers to help solve their circuit design problems using appropriate components. Fields of knowledge include flat panel displays (plasma, field emission, electro-luminescence, vacuum fluorescence), printer technology (ink jet, electrostatic, piezo), power supplies (0.5W to 100W), and instrumentation.

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1/88 to **Electrical Development Engineer - CLEARANCE: TS/SSBI**

10/95 **Loral Electro-Optical Systems**

Experience with this large, publicly traded electronic development company focused on all aspects of engineering design (electronic, mechanical and software), production (R&D, production and testing), and program management. Areas of experience as follows:

Analog design -- Designed motor drive circuits, analog-to-digital interface circuits, automated test instrumentation circuits, 8 kilowatt lamp modulation inductor (charge and discharge), high velocity projectile sensor electronics, graphite and arc lamp switching power supplies from 600 watts to 8 kilowatts, and linear and switching power supplies for internal applications. Worked on the development of new lamp modulation methods for optimal lamp output along with other applications.

Magnetic design -- Designed and analyzed chokes and inductors and transformers from 1 watt to 24 kilowatts.

Digital design -- Extensive involvement with logic circuit design, including analog-to-digital, digital-to-analog converters and PAL programming.

Electro-optical design -- Developed high definition and high speed CCD control circuitry for infrared sensor applications. Designed amplification and threshold detection circuitry for optical sensors. Devised pulsing circuitry for high power, infrared laser diodes and high-energy flash lamps.

CAE -- Proficient with circuit design and analysis programs: PSPICE and MicroCAP; schematic capture programs: Protel, ORCAD and FutureNET; PCB programs: Protel PCB, CAD PCB and ORCAD PCB.

Software -- Wrote netlist translator from ORCAD schematic capture software to Computer Vision PCB layout software, partlist generator for schematic capture software, wirelist generator program using dBase, magnetic material cross-reference program, inductor / transformer design program, missile FLYOUT program, and DEFEND-IR motor control interface. Programming languages include BASIC (Quick and Visual), FORTRAN, and C in DOS, Windows, and UNIX environments.

Field testing and applications -- Major projects that led to field-testing included anti-tank missile countermeasure system, lamp augmented infrared countermeasure system, and directional infrared countermeasure (DIRCM) system for aircraft. Other fieldwork included surface vehicle protection tests and AFEWES missile simulations.

Program management -- Took charge of parts procurement and receiving for high profile programs. And kept track of cost accounting of material and labor for program managers.

EDUCATION

- 1988 ! California State University, Northridge
Major: B.S. Electrical Engineering, Minor: Mechanical Engineering
- 1984 ! Sacramento City College
Major: Electrical/Mechanical Engineering, Minor: Computer Science

CERTIFICATIONS

- ! Registered Engineer in Training, State of California
- ! California Rescue Dog Association (CARDA), Trailing Dog Handler
- ! National Ski Patrol, Volunteer Patroller
- ! American Red Cross Emergency Responder and Professional CPR
- ! FCC Amateur Radio License