



www.kamaka.de

Zentrale
Ulmer Strasse 130
73431 Aalen

Tel. +49 7361-9662-0
Fax. +49 7361-9662-29
Email: info@kamaka.de

Büro Nord
Robert-Bosch-Strasse 25
25335 Elmshorn

Tel. +49 4121-463900
Fax. +49 4121-463901
Email: schroeder@kamaka.de

Hi-Rel Solutions

Manufacturers	Products
	Space Inductors 0402, 0603, Military Power Inductors, RF Inductors, RF Coils Qualified manufacturer to "S" Level Failure Rate of DSCC MIL-PRF-39010 Power Inductors: High temperature designs operating at up to +220°C Applications: Hi-Rel, Space, Military, Avionics, Down Hole
	Isolated single, dual and triple output DC/DC Converters from 0.25 to 2100 W Commercial-off-the-shelf (COTS) Converters, 5 year warranty Module & Open Frame Converters, SMT&THT, Brick Assembly Modules (CBAM™) Applications: Avionics, Defense, Marine
	Multi-Channel Analog to Digital Converters, Sampling A/D-Converters, LDO's Voltage References, Multi-Channel Complete Data Acquisition, Amplifiers COTS Isolated and Non-Isolated DC/DC-Converters Applications: Hi-Rel Military, Airborne, Aerospace, High Temp. up to +200°C
	Development and production of custom and mobile portable power systems Aerospace / UAV: Rechargeable batteries: High energy density (up to 270Wh/Kg) Medical & Industrial products: standard & custom Li-Ion rechargeable batteries Micro-grid energy storage systems. Applications: Battery Power Systems
	Highest Energy and Power Density Capacitors with MTBF>5.000.000 hours Product range 68 µF to 240.000µF (10V to 125V) 85°C, 125°C and 200°C. Very low ESR, very high current handling capability, Highest levels of quality Applications: Power hold up Avionics, Laser Pulse Power, Phased Array Radar Pulse Power, Replacement of Batteries, Oil & Gas +200°C
	Hermetic Ultra-Capacitor Technology D & AA size cells, 33F to 400F capacitance Extreme temperature operation -40 to +300°C, Custom Modules, High Cycle Life High Shock 500Gpeak & Vibration 20Grms, Lithium Free – no risk of explosions Applications: Hi-Rel Avionics, High Temperature Products for Oil & Gas
	ESCC 5000 and 5010 qualified Hi-Rel components Rad-Hard Power MOSFETs, Microwave Transistors, Microwave Diodes, Bare die's No export license required! Applications: Space, Satellite, Microwave RF Applications
	Rad-Hard & Hermetic MOSFETs, Schottky & Ultra-Fast Rectifiers, IGBTs Integrated Circuits, LDO's – MIL-PRF-19500 & MIL-PRF-38534 qualified parts DC/DC-Converters, EMI Filters, Rad-Hard Solid State Relays, Hybrids & Modules Applications: Hi-Rel, Defence, Space, Aircraft, High Temperature
	Professional Triple Redundant Autopilots ^{mp} , MicroPilot Autopilots Fly Multi-Rotors LRC with Radio Modem, LRC Base (Ground), LRC Airborne Unit, True HWIL Board & Enclosed Autopilots, Simulation for the UAV, Horizon Ground Control UAV Applications: UAV - Fixed Wings, Helicopter, Multi Rotor, Airborne
	Analog and digital Semiconductors: ITAR free products Amplifiers, Comparators, Multiplexers, Sample & Hold Amplifiers Transistor pairs, Analog Switches, 5V Dual Transceivers MIL-STD-1553/1760 Applications: Hi-Rel, Airborne, Defense, Mission critical applications
	Rad-Hard POL Converters, Custom Power Bus Products Quad LVDS Line Receiver with Extended Common Mode, Quad LVDS Line Driver Screening & testing of SPACE IC products to the ESCC 9000 requirements Applications: Space Missions, Satellite Business
	MIL-PRF-55342, MIL-PRF-914, MIL-PRF-32159 Mission critical Thin & Thick Film Chip Resistors, High Frequency Products, Silicon Resistors, Chip Attenuators, Current Sense Resistors, High Power Chip Resistors, Zero Ohm Chip Resistors Applications: Space, Defense, High Quality, Medical, Hybrids
	High Reliability & High Temperature Hybrid Microcircuit Crystal Oscillators MIL-PRF-55310, PRF-38534, MIL-883B, TTL-LVTTL-CMOS-HC/ACMOS-ECL Lowest voltage is 3.3V, SMD-Packages 5x7mm, High Shock & Vibration Designs Applications: Hi-Rel, Defense, Space, Aircraft, High Temperature to +230°C

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Obsolescence Solutions

Manufacturers	Products
	Power Inductors, High Speed Inductors, RF Inductors, RF Coils, Transformers Common Mode Chokes, EMI /RFI Suppressors, Custom Products Prototype Services, Smallest Size, Highest Performance, Reliability Program Applications: Aerospace, Military, Medical, Down Hole, Railway, Industrial
	Robotic Hot Solder Dip – Compliance with RoHS directive Component Obsolescence Challenges, Non-availability of Tin Lead components Life-time buy opportunity (Long Term Packaging) BGA Reballing for the Conversion of tin-lead, Component Harvesting Lead Reconditioning, Lead Attach, Forming and Cutting of Pins Elimination of Tin-Whiskers through tin-lead-alloy Applications: Aerospace, Defense, Implantable Medical, Transportation
	DATEL products are guaranteed to be available for long-term programs Legacy A/D Converters, Amplifiers, Obsolete component replacement Reverse Engineering, Form-Fit-Function for obsolete products, Custom solutions Process Porting & Device Replication, RoHS and Non-RoHS versions available Applications: Industrial, Medical, Scientific, Military, Airborne, Aerospace
	Discontinued and End of Life industrial and military parts QML Class Q and Class V certified manufacturer, MIL-PRF-38535, MIL-STD-883 Analog & Interface IC's: Amplifiers, A/D- & D/A-Converters Memories: EPROMs, EEPROMs, SRAMs, CPLD Dual Port RAMs Programmable & Discrete Logic IC's, FIFOs Wafer & bare die banking, Components Up-screening Program Applications: High End Industry, Aerospace, Defense, Transportation
	Electromechanical Relays: range from 1A to 100A & AC or DC Coils Automotive Relays up to 80A Latching Relays: all relays sealed for wave soldering and washing OKI Reed Relays, Reed Switches, Mini Reed Relays, Small Dry Reed Relays Custom Speciality Relays to your exact requirements Applications: Circuits with long lifetime and High Reliability
	Power Semiconductor Products: Diodes, Thyristors, Modular Blocks, Heat Sinks Isolated Modules, Rectifier Bridges, Crossed- Field Amplifiers, Absorbers Second Source Products, Approvals: ISO9001:2008, AQAP 2110:2009. Applications: New Energy, Inverters, High Power Switching Units & Rectifiers
	Analog and digital Semiconductors: ITAR free Amplifiers, Comparators, Multiplexers, Sample & Hold Amplifiers Transistor Pairs, Analog Switches, Custom IC solutions for obsolescence parts Applications: Hi-Rel, Airborne, Defense, Mission critical applications
	Custom Solutions for mitigating Device Obsolescence and Board Re-Design Adapter Products, 1:1 Footprint conversion, ASIC / FPGA Adapters to include code reconstruction and re-targeting, Interconnect Pitch Adapters, Programming Adapter Functionality Upgrade, Production & Test Sockets, Atmel AVR Adapters for µC Reverse Engineering of Small Plastic & Metal Parts Applications: Adapter Solutions, Device Specific Package Conversion
	High Reliability Hybrid Microcircuit Crystal Oscillators Obsolete Through Hole packages, High Shock & Vibration Designs Custom Solutions, Up-screening Program Applications: Hi-Rel, Defense, Space, Aircraft, High Temperature

KAMAKA Service

KAMAKA was established in 1992

Strategic Obsolescence Management
Anti-Counterfeiting Program
Life Cycle Management
Long Lifetime Program up to 25 years
Last Time Buy, EOL-, PCN-Service
Requirements Engineering
Custom Multi Chip Module
Supplier Risk Management
Worldwide access to allocation & obsolete products
Qualified visual & electrical Test Reports
Traceability is guaranteed

Total Quality Management: DIN EN 9120:2009 technically equivalent to AS9120A and SJAC9120
DIN EN ISO 9001:2008, DIN EN 61340-5-1 ESD compliant storage & handling process



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