Obsolescence Solutions

Strategic Obsolescence Management

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ASIC Adapter Custom Solution
Adapters allow the user to interconnect an available semiconductor package to an existing pre-designed footprint, providing a form, fit and function replacement which allows the user to continue using the existing PCB design without need for redesign and expensive re-qualification costs. High reliability industry sectors, Civil Aerospace, Defence, Rail, Deep Sea, Automotive, Medical with both Custom and COTS parts.

- Adapters to Mitigate Component Obsolescence.
- In-House design & manufacture includes DO254 for Civil Aerospace
- Adapters for Function Upgrades, Prototyping & Test
- Recreation of functionality from complex ASIC, FPGA devices
- Firmware and retargeting of analogue and digital ASICs into FPGA.
- Chip Carriers for Die Attach
- Custom Sockets to 0.3 mm Pitch and other interconnect products.
- Reverse Engineering: Obsolete Connectors and Hardware.
- Tooling, Jigs, Fixtures & Injection Moulding.

Electromechanical Relays
The relays are available in a variety range of 1A to 100A DPDT, SPDT, SPST-NO, Latching SPDT/DPDT, 3PDT, 4PDT. All relays sealed for wave soldering & washing.

- Latching Relays – 3 varieties
  - HAT 901-L is a heavy duty SPDT, single-coil latching relay 40A
  - KLT-L is a highly reliable, low cost single-coil latching relay 15A
  - PLT-L is a SPDT relays up to 25A, surge voltage up to 6kV
  - SPR-L is a SPDT/DPDT, small sized 1 or 2 coil latching relay 16A / 8A
  These energy saving relays require no current to maintain contact closure once the relay has been switched.

- Automotive Relays up to 80A
- OKI Reed Relays, Reed Switches - long life and high reliability
  Contact Rating: 5W to 50W  Switching Voltage: 250VDC
  Switching Current 0.25A to 1.5A

Custom Speciality Relays
We are able to discuss tailoring our parts to your exact requirements.

Approvals: ISO 9001:2008, UL, TüV

High Rel Hybrid Microcircuit Crystal Oscillators
Industrial, Military, Space Qualified Oscillators
TTL- LVTL- CMOS- AC/HCMOS- LVHCMOS- ECL
Tristate Output
Very High-Temperature Down-Hole
Ultra High Shock & Vibration
Multiple Frequency Outputs
Wide Frequency Ranges
Multiple Temperature Ranges
Dual In-Line & TO-5 Package
Surface Mount: Leadless, J- Lead, Gull Wing Lead
New: Low Voltage 3.3V in 5x7 mm SMD
Approvals: AS9100, MIL-PRF-55310, MIL-PRF-3098

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Delivering High-Reliability Semiconductor Solutions
Discontinued and End of Life industrial and military parts
QML Class Q and Class V certified manufacturer
Over 3611 QML approved products
New chip redesign to finished IC, Original Form, Fit & Function
Design, Fabrication, Assembly, Test, Burn-In, Full Qualification

Analog & Interface IC’s: Amplifiers, TTL-, ECL - Logic IC’s
A/D & D/A Converters
Memories: CPLD Dual Port RAM, EPROM, EEPROM, SRAM
Microcontrollers & Microprocessors
Programmable & Discrete Logic IC’s
Custom IC solutions for obsolete parts
Wafer & bare die banking

EOL products: Atmel, Cypress, Fairchild, IDT, Lattice, Maxim
Micron, NSC, Philips, Peregrine, Raytheon, STM, Zilog

Manufacturing semiconductors since 1962
Development & production of electronic engineering products
Expertise in the field of analog, analog to digital technology
ITAR free products are manufactured within the EU in Latvia
In-house Design, Assembly, Electrical Test, Burn-in, Qualification
Process: using Bi-polar, Bi-FET, CMOS & Bi-CMOS

Analog Microcircuits
Analog switches
Amplifiers
Comparators
Multiplexers
Sample and hold circuits
Transistor pairs
Custom IC solutions for obsolescence parts

Packages: LCC package, Metal Can, Flat Pack, Ceramic DIP
Standard Operating Temp from low – 60°C to +125°C
Replacements to Analog Devices, Burr Brown, Calogic,
Elantec, Harris, Intersil, NSC, Philips & TI
RoHs Compliant parts available
Approvals: DIN EN ISO 9001:2008 certified
Data Acquisition Products since 1970
High-Temperature, Medical, Military, Space

Standard Products

A to D-Converters: 7 to 8-bit CMOS Flash up to 20MSPS
Stand-alone 12-bit with 2 to 20 µsec conversion rate

Sampling A to D-Converters: 12 to 24-Bit up to 20 MSPS

D to A-Converters: 8, 10, 12, 16-bit up to 250MHz with input latching

Single-Package Data Acquisition Systems 12-bit:
Input Multiplexer, Instrumentation Amplifier, S & H amplifier, A/D-Converter and various interface logic – fully qualified with screening

CCD Signal Processor / Imaging Converters: 12, 14, 16, 18-Bit ADC with integrated Correlated Double Sampler for easy interface with CCD

Stand alone CCD Image Converters: Functionally complete 12 to 18-bit resolution ADCDS converter family

Sample & Hold Amplifiers: from 0.1% to 0.001% accuracy (10 to 16-bit equivalent resolutions) with acquisition speeds from µs to low tens of ns

Precision Voltage references:
1.024; 1.25; 2.048; 2.5; 3.0; 3.3; 4.096; 5.0V

LDO Linear Voltage regulators: -15V; +15V ; from -55 to +125°C

4- & 8-CH Multiplexers: from 0.1% to 0.001% accuracy (10 to 16-bit equivalent resolutions) with fast settling time speeds in the low tens of ns

Amplifiers: 70 to 200ns from -55 to +125°C

Standard Microcircuit Drawings: SMD5962-xxxx, DSCC/DLA certified

Custom solutions: Design of modified products for digital imaging, industrial, medical, aerospace, Hi-Rel Defence applications

Obsolescence Solutions
Reverse Engineering
Process Porting & Device Replication
Obsolete component replacement, Device Replication
EOL products: Atmel, Cypress, Fairchild, IDT, Lattice, Maxim

Programmable & Discrete Logic IC’s
Analog & Interface IC’s: Amplifiers, TTL-, ECL - Logic IC’s
Design, Fabrication, Assembly, Test, Burn-In, Full Qualification
New chip redesign to finished IC, Original Form, Fit & Function
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Elantec, Harris, Intersil, NSC, Philips & TI
Replacements to Analog Devices, Burr Brown, Calogic,
Transistor pairs
Comparators
Analog switches
Analog Microcircuits
ITAR free
Development & production of electronic engineering products
(QP Semi)

Obsolete component replacement, Device Replication
Obsolescence Solutions
Custom solutions:

- Input Multiplexer, Instrumentation Amplifier, S & H Amplifier, A/D-Converter
- Single-Package Data Acquisition Systems 12-bit
- Sampling A to D-Converters:
  - with integrated Correlated Double Sampler for easy interface with CCD
- CCD Signal Processor / Imaging Converters:
  - Input Multiplexer, Instrumentation Amplifier, S & H amplifier, A/D-Converter
- Amplifiers:
  - Equivalent resolutions) with fast settling time speeds in the low tens of ns
  - 4- & 8-CH
  - Operating Temperature Range: -55 to +125°C
- LDO Linear Voltage regulators:
- Precision Voltage references
- Resolution ADCDS converter family
- Stand-alone CCD Image Converters:
  - with integrated Correlated Double Sampler for easy interface with CCD
- Stand-alone 12-bit with 2 to 20 µsec conversion rate

Approvals: MIL-883 certified components

Units: New Energy, Inverters, High Power Switching
Motor drives &
Photovoltaic, Solid State Relays
Transistors
FETs, IGBTs, Unijunction
Thyristors, Triacs
Inverters – Fast Switching, Phase Control
MOSFET Drivers & Relays
Photovoltaic, Solid State Relays
Voltage Regulators
Positive, Negative, Fixed, Adjustable, Low Drop
Custom Hybrids & Semiconductor Packaging
Analog, Digital, Power, Standard Semiconductors

Power Semiconductor Products
High Current Diodes up to 8000A
Fast Recovery Diodes up to 1500A
Thyristors up to 1900A
Electrically Isolated Base Modules up to 1000A
Assemblies: Heat Sinks, Clamp Sets available
Applications: New Energy, Inverters, High Power Switching Units
High Power Rectifiers, Motor drives
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Mainstream commercial users also benefit from these solutions as cost savings over last time buys and grey market supply issues.

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### Electromechanical Relays

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**SPR-L** is a SPDT/DPDT, small sized 1 or 2 coil latching relay 16A / 8A

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**Automotive Relays up to 80A**

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- Switching Voltage: 250VDC
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KAMAKA Service
Obsolescence Management
Serving the semiconductor industry since 1992
Services
Long-lifetime Program up to 15 years
Long Term Storage of obsolescence products
Worldwide access to allocation and obsolete products
Packaging Solutions
Custom packaging of bare die, Multi Chip Module
Components Upscreening Program
Quality Agreements
Anti-counterfeiting program - Traceability is guaranteed
Avoiding Counterfeiting parts - only original parts
You will get a manufacturer CoC

Member of
COG DEUTSCHLAND

Quality Management System
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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