



KAMAKA

Electronic

Bauelemente Vertriebs GmbH

Obsolescence Solutions

Pro-active & Strategic

Obsolescence Management

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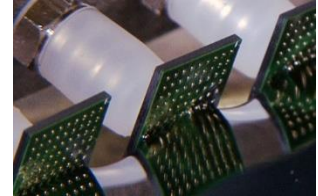
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Component Obsolescence Challenges

Robotic Hot Solder Dip – Compliance with RoHS directive
 Non-availability of Tin Lead components
 Life-time buy opportunity (Long Term Packaging)
 BGA Reballing for the Conversion of tin-lead
 Component Harvesting – removing high cost obsolete components from a PCB
 Lead Preparation, Lead Reconditioning, Lead Attach
 Forming and Cutting of Pins
 Gold Mitigation – Removes gold and replaces it with SnPb.
 Elimination of Tin-Whiskers through tin-lead-alloy
 Solderability Testing, X-Ray Fluorescence Analysis (XRF)
 Fine and Gross Leak Testing
 Additional Services: Kitting, Tape & Reel, Engineering Support

Applications: Aerospace, Defence, Implantable Medical, Transportation

Approvals: AS9100, ISO 9001 registered, ANSI/ESD S20.20-2014



Delivering High-Reliability Semiconductor Solutions Discontinued and End of Life industrial and military parts

QML Class Q and Class V certified manufacturer
 QML approved products
 New chip redesign to finished IC, Original Form, Fit & Function
 Design, Fabrication, Assembly, Test, Burn-In, Full Qualification

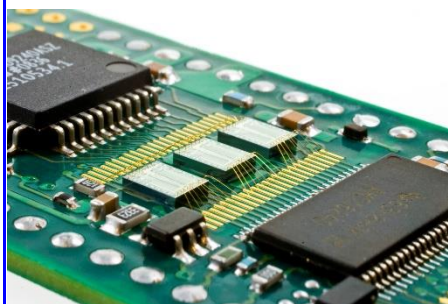
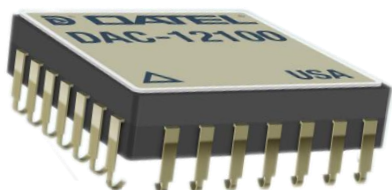
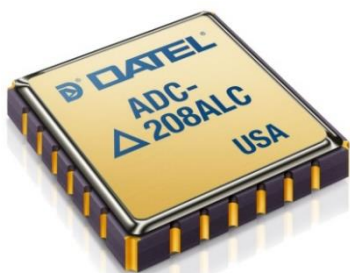
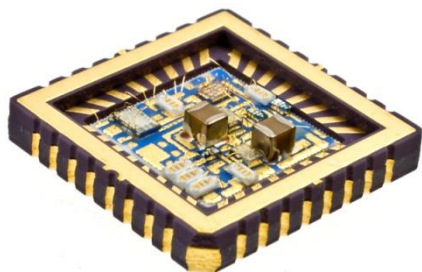
Analog & Interface ICs: Amplifiers, TTL-, ECL - Logic ICs
 A/D & D/A Converters
 Memories: CPLD Dual Port RAM, EPROM, EEPROM, SRAM
 Microcontrollers & Microprocessors
 Programmable & Discrete Logic ICs
 Custom IC solutions for obsolete parts
 Wafer & bare die banking

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

Applications: Aerospace, Defence, Military, High End Industry
 Transportation

Approvals: AS9100, MIL-STD-883, MIL-1835, MIL-PRF-38535





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 μ sec 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 μ s 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



ASIC Adapter CustomSolution

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.

Mainstream commercial users also benefit from these solutions as cost savings over last time buys and grey market supply issues.

- 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.



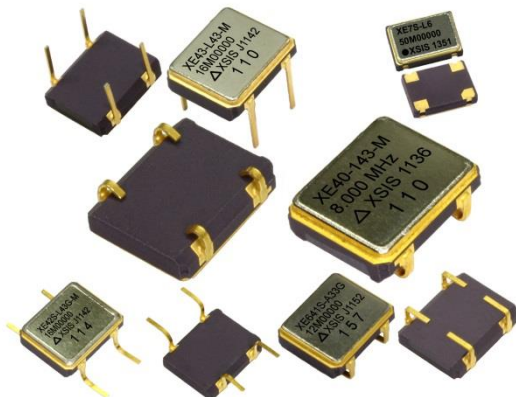
High Reliability Hybrid Microcircuit Crystal Oscillators & Crystal Units

Obsolete Through Hole Dual In-Line & TO-5 Packages
Custom Solutions, Up-screening Program
Ultra High Shock & Vibration Designs
New: High-Temperature up to +230°C

TTL- LVTL- CMOS- AC/HCMOS- LVHCMOS- ECL
Tristate Output, Multiple Frequency Outputs
Wide Frequency Ranges, Multiple Temperature Ranges
New: Low Voltage 3.3V in SMD-package 5x7 mm
Surface Mount: Leadless, J- Lead, Gull Wing Lead

Applications: Down-Hole, Industrial, Military, Defence
Telecommunications, Aircraft, Space, High Temperature

Approvals: AS9100/ISO-9001, MIL-PRF-55310,
MIL-STD-790, MIL-PRF-38534



Our Service

KAMAKA WAS ESTABLISHED in 1992

Strategic Obsolescence Management

Life Cycle Management
Long Lifetime Program up to 25 years
Long Term Storage of obsolescence products
Obsolete Parts Replacement
Requirements Engineering
Supplier Risk Management

Part Procurement

Last Time Buy, EOL-, PCN-Service
Inventory Management & Kitting
Worldwide access to allocation and obsolete products

Packaging Solutions

Custom packaging of bare die
Custom Multi Chip Module

Quality Agreements

Anti-Counterfeiting Program
AQL spot checks according to DIN/ISO 2859-1
Avoiding Counterfeiting parts - only original parts
Counterfeit Analysis
Components Upscreening Program
Qualified Visual & Electrical Test Reports
Traceability is guaranteed
You will get a manufacturer CoC for re-fabrication parts

Member of



Total Quality Management

DIN EN 9120:2016 technically equivalent to AS9120B and SJAC9120A
DIN EN ISO 9001:2015
DIN EN 61340-5-1 ESD compliant storage & handling process

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www.kamaka.de