MANUFACTURING SEMICONDUCTORS SINCE 1962

www.rdalfa.eu
Founded in 1962, RD ALFA Microelectronics was a pioneer in electronic technology. Experience and expertise in the field of analogue and analogue to digital technology (Bi-polar, Bi-FET, complementary Bi-polar, CMOS, and Bi-CMOS).
Design and the manufacture of certified high reliability and radiation hardened microelectronics components for aerospace and defense equipment as well as special purpose microcircuits. All products are ITAR free from Latvia!
Operational Temperature - 60°C to +125°C as standard for Military. Tested to -63°C!
1966. The Riga Scientific Research Institute of Micro-devices (RSRIMD) was created on the basis of the Design Office No 4.

1969. The first differential pair of N-P-N transistors αRD2713NK5LI in the USSR.

1971. The technical industrial association ALFA was founded on the basis of the RSRIMD and the Riga Semiconductor Plant.

1973. The first semiconductor operating amplifier.

1975. The first semiconductor voltage comparator in the USSR.

1978. The first semiconductor operational amplifier on complementary bipolar vertical transistors in the USSR.

1999. Development of a technological process of production of complementary bipolar vertical transistors with p-n junction of elements was completed.

2002. JSC RD Alfa mikroelektronikas departaments was registered in the Register of Enterprises of the Republic of Latvia. RD ALFA Microelectronics becomes a legal successor of the RSRIMD and the plant Invertor.

RD ALFA Microelectronics is an assignee of the Scientific Research Institute of Micro Devices and “Invertor” plant in Riga, which in due time became part of the industrial corporation “Alfa”.

2002. Commencement of annual certification of IC (integrated circuits) development and production by the Russian QMS certification authority.
2005. The quality management system of JSC RD Alfa mikroelektronikas departaments was certified for conformity to requirements of the international standard ISO 9001:2000.

2007. The set of LSI αRD14864TF5S and αRD14861TF5S for 4-channel Data Acquisition systems was developed and mass manufacturing of the same was started.

2010. Development of a technological process with three buried layers for production of high voltage complementary bipolar transistors together with complementary JFET transistors was completed.

2011. The quality management system of JSC RD Alfa mikroelektronikas departaments was successfully certified for conformity with requirements of the international standard ISO 9001:2008.

2012. Modernisation of the assembly department.

2012. Web Site with full product portfolio including downloadable Data Sheets. Replacements to many mature parts from Analog Devices, Burr Brown, Calologic, Fairchild, Harris, Intersil, National Semi, Philips, TI, and others.
ADVANTAGES

• 45 years of experience in development and production of high quality analogue microcircuits. The manufacturing process is certified by the firm SGS Societe de Surveillance SA Systems & Services Certification, Switzerland according to ISO 9001:2008.
• Experienced and high-skilled staff.
• The complete cycle of development of integrated circuits.
• The complete assembly.
• The continuous control of microcircuits quality.
• Topography of integrated circuits are registered and protected in the Register of Integrated Circuits Topographies and Authorities.
• The unique technology of production of complementary bipolar vertical transistors with dielectrical isolation or p-n junction with three buried layers, deep collector area, super-β and JFET transistors.
• Fast design and manufacturing of microcircuits according to the customer’s specification.
• Joint Ventures encouraged.
• Joined EU and a member of NATO from 2004.
• Local European Manufacturer.
• Competitive pricing and short lead times.
• Traditional style warranty & full traceability.
PRODUCT SUMMARY

Operational amplifiers (*rapid, multichannel, micropower, precision*)

Comparators

Switches and multiplexers

Differential pairs

Microcircuits for data acquisition systems (*αRD14864TF5S and αRD14861TF5S*)
CMOS AND BIPOLAR PROCESSES

High voltage CMOS process 2.0 µm, 9 masks

Complementary bipolar process with dielectric isolation or p-n junction isolation with three buried layers, deep collector area, 3.0 µm, 17 masks

Complementary bipolar technology with isolation by p-n junction with two buried layers, 3.0 µm, 14 masks

Bipolar process with isolation by p-n junction, 3.0 µm, 13 masks

Bipolar process with dielectric isolation, 3.0 µm, 11 masks

The following parameters of integrated circuits are ensured

Dynamic range of analogue signals being processed from ± 100 µV up to ± 40 V
Supply voltage range from ± 1.5 V up to ± 40 V.
Frequency range of analogue signals being processed from 0 Hz up to 200 MHz
Load current up to 1000 mA.
TECHNOLOGICAL CAPABILITIES
Packaging of microcircuits

- Glass-to-metal cases TO, TO99 metal can
- Ceramic metal micro cases ceramic guard pack
- Ceramic metal cases ceramic dip - 8
- Planar glass-to-metal, ceramic metal cases 14 pin, 16 pin
- Ceramic metal flat pack 14 pin, 16 pin
- Open-Frame IC on polyimide carrier
- Open-Frame IC
ILLUSTRATION OF STANDARD PROCESS FLOW
PRODUCT PROFILE BY CATEGORIES OF MICROCIRCUITS

- Operational amplifiers: 55.19%
- Differential pairs: 20.96%
- Comparators: 18.57%
- Other microcircuits: 4.33%
- Switches: 0.95%
There are strong traditions of Space Research in Latvia. The roots are found in the beginning of the last century in connection with the famous Friedrich Zander.

Historically Latvia has been strongly developed in two directions of space technologies – engineering and material sciences.

Since the 1950’s Latvian scientists have participated in more than a hundred world-level space programs. Key contributions have included the manufacture of the first satellite telescope and range finder, the production of isolation materials for soviet rockets, & other applications.

Up to the collapse of the Soviet Union, Latvia took part in several significant space programs including:

*) Isolation material development for construction and launch of the first satellite “Sputnik – 1” (in 1957);

*) First manned flight to space in “Vostok-1” (Yuri Gagarin) the first human spaceflight in history (In 1961):

*) “LUNOKHOD” – robotic rover for investigation of the surface of the moon and obtaining images (in 1970);

*) “Buran” and its launch vehicle “Energy” - orbital vehicle program (Starting from 1988).

Further Latvian space exploration and technology developments influenced by USSR space exploration policy. These have included development of geodesy science, (measurement and representation of the Earth) as well as military research policy.

This days RD ALFA Microelectronics works in co-operation with Latvian Space Technologies Cluster and European Space Agency.

Source
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