Aerospace & Defense Solutions

Specialized products, processes, and services from ON Semiconductor.
Trusted Source

With headquarters in Phoenix, Arizona, and on-shore design and manufacturing centers, ON Semiconductor offers a secure, stable environment for the development of advanced semiconductor solutions for aerospace and defense applications.

ON Semiconductor has been granted Category 1A Trusted Design, Trusted Test, and Trusted Foundry accreditation by the Defense Microelectronics Activity (DMEA), enabling trusted support from design through product shipment. The Trusted Foundry accreditation allows ON Semiconductor to support its digital and mixed signal designs at the 40,000 square foot (ft²) clean room manufacturing space in Pocatello, ID, the 100,000 ft² clean room in the Gresham, OR, and the 282,000 ft² of fab and backend clean room space in East Fishkill, NY. The accreditation program is part of the DoD strategy to ensure that electronic components used in U.S. military and national security applications are trustworthy and secure. An assured “chain of custody”, supply chain integrity, and prevention of tampering are critical for Application Specific Integrated Circuits (ASIC) used by national security agencies. A key part of the Trusted Foundry program is that it uniquely provides the US Government with guaranteed access to leading edge trusted microelectronics services for low volume applications. ON Semiconductor’s accreditation confirms their commitment to meet these government requirements.

ON Semiconductor has also been granted “Trusted Broker” accreditation by DMEA, enabling the company to support the entire trusted manufacturing process through engagement with other trusted suppliers. The combination of the four accreditations benefits military and defense customers by providing a fully integrated trusted manufacturing solution.

In addition, ON Semiconductor maintains ITAR certification and QML flows required for military designs.
Processes and Capabilities

ON Semiconductor is certified to the following process standards:

- MIL-PRF-38535
- IATF 16949
- AS 9100 Rev. D
- ESCC-9020
- ESCC-2269000
- Category 1A
- ISO9001
- MIL-PRF-38535
- IATF 16949
- AS 9100 Rev. D
- ESCC-9020
- ESCC-2269000
- Category 1A
- ISO9001

For more information on the current status of certifications held by ON Semiconductor, visit our website at: www.onsemi.com/about/quality-reliability/certifications-qualified-sites

Environmental Performance

ON Semiconductor provides robust silicon technologies for ASIC products that are characterized over an extended temperature range from cryogenic to 150°C, as well as a portfolio of plastic and hermetic packaging suitable for high reliability end applications.

Process Longevity

ON Semiconductor operates modularized wafer fabrication processes that enable the company to offer extended process lifetimes, meeting the market need for secure, long life-cycle processes to support long product lives of ten years or more. This approach also allows the company to support low volume requirements of aerospace and defense customers. An established, flexible EOL process enables adequate transition or EOL planning.

ON Semiconductor added 300 mm production capability to the current 200 mm production capability through the 2019 acquisition of Global Foundries’ 300 mm fab located in East Fishkill, New York. Through this purchase, ON Semiconductor can now offer development and production in the fab’s 65nm CMOS technology. A system platform is under development which will allow the ONK65 technology to replace ONC110, ON Semiconductor’s 110 nm CMOS node, for future projects needing higher performance and radiation requirements beyond ONC18, ON Semiconductor’s 180 nm CMOS technology. The ONC110 process is available for production of the Alpine standard product; a radiation hardened by design (RHBD) ARM926-based SOC.
Solutions Characterized for Neutron Soft Error Rates

Robust ASICs for Aerospace Applications

ON Semiconductor offers Application Specific Integrated Circuit (ASIC) solutions critical for aerospace applications and products requiring rigorous FIT rates due to terrestrial radiation exposure. A combination of characterization test data, soft-error-aware design flow methodology, qualification, and handling flows allow customers multiple options in planning and designing ASICs in a wide variety of applications. Available in the company’s 110 nm (ONC110) and 180 nm (ONC18) digital processes, the standard cell and SRAM architectures achieved superior neutron test results across voltage and temperature. To further reduce Single Event Effects (SEE), the design offering includes enhanced substrates, redundancy and error correction code (ECC) options. Leveraging the company’s existing commercial digital ASIC flow, customers benefit from superior pricing, development spans and manufacturing cycle times.

<table>
<thead>
<tr>
<th>ONC18 FIT (Sea Level, NYC)</th>
<th>1.8 V FIT Per M Bit</th>
<th>1.5 V FIT Per M Bit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual Port SRAM</td>
<td>618</td>
<td>778</td>
</tr>
<tr>
<td>Single Port SRAM</td>
<td>492</td>
<td>704</td>
</tr>
<tr>
<td>Flip Flop*</td>
<td>313</td>
<td>529</td>
</tr>
</tbody>
</table>

* Single bit FIT only. Redundancy will significantly reduce FIT. No SEL at 85°C, 1.93 V. No MBU or SEFI.

<table>
<thead>
<tr>
<th>ONC110 FIT (Sea Level, NYC)</th>
<th>1.20 V FIT Per M Bit</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDSP SRAM</td>
<td>360</td>
</tr>
<tr>
<td>DP SRAM</td>
<td>290</td>
</tr>
<tr>
<td>Flip Flop*</td>
<td>358</td>
</tr>
</tbody>
</table>

* Single bit FIT only. Redundancy will significantly reduce FIT. No SEL at 125°C, 1.26 V. No MBU or SEFI.

Soft Error Mitigation Solutions for Aerospace

ON Semiconductor has a wide range of design solutions to mitigate soft errors while taking density, power, and performance into account. A combination of proven Rad Hard by Design (RHBD) techniques and process enhancements deliver outstanding neutron test results. Be it partial, sequential, or full Triple Modular Redundancy (TMR), ON Semiconductor can tailor an ASIC development flow to meet the design and application needs of a wide range of aerospace applications.
Radiation Hardened By Design Solutions

Robust ASICs for Space and High Reliability Applications

ON Semiconductor offers Radiation Hardened by Design (RHBD) solutions critical for space and Hi-Rel applications. Available in ONC110, the company’s 110 nm digital Application Specific Integrated Circuit (ASIC) processes, the design offering includes a novel flip-flop architecture called Self Restoring Logic (SRL). SRL remains hard to single event effects at high Linear Energy Transfer (LET) while operating up to 700 MHz, far exceeding the capability of legacy RHBD flip-flop architectures. A latch-up resistant Dual Port SRAM with on-board error correction code (ECC), hardened clock elements, high-speed I/O cells, and a single event latch up protection cell expand the design portfolio. These cells are compatible with the existing digital ASIC flows resulting in superior pricing, development spans and manufacturing cycle times.

ONC110 Test Results

<table>
<thead>
<tr>
<th>Test Parameter</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Ionizing Dose (Si)</td>
<td>300 kRads</td>
</tr>
<tr>
<td>SRL Onset LET (700 MHz)</td>
<td>107 Mev cm²/mg (Si)</td>
</tr>
<tr>
<td>SEL Tolerant</td>
<td>Tested to 125 Mev cm²/mg (Si) at 150°C and $V_{dd} +10%$</td>
</tr>
<tr>
<td>Dose Rate Upset</td>
<td>Tested to $1 \times 10^{9}$ rad(si)/s</td>
</tr>
<tr>
<td>Dose Rate Latch-Up</td>
<td>Tested to $3 \times 10^{8}$ rad(si)/s</td>
</tr>
<tr>
<td>Neutron SEE</td>
<td>$8 \times 10^{13}$ n/cm² (1 MeV equivalent)</td>
</tr>
</tbody>
</table>

Proven Rad-Hard Solutions for Space

ON Semiconductor has a wide range of design solutions to mitigate radiation effects. Hardened IP and a proven commercial ASIC development flow combine to achieve results that meet the design and application needs of a wide range of applications. The company’s ASIC legacy spans five decades and includes thousands of design-from-spec, customer interactive, and FPGA conversion success stories. RHBD capabilities enable ON Semiconductor to expand our ASIC heritage and service the needs of existing and new customers.

ON Semiconductor is developing an RHBD ASIC capability for ONK65, a 65 nm CMOS technology node, that will balance density, performance, power consumption, and cost of ownership. This platform will include IP, library, compiler, implementation flow, and test chip development. In this way, ONK65 will replace ONC110.
Alpine – Radiation Hardened ARM926-Based SoC

Features

- ARM926 with Floating Point
  - 16 kB/16kB I/D Cache
  - 16 kB/16kB TCMs
  - 64 kB of internal SRAM
- Flexible external memory controllers
  - SDRAM/Flash controller
- Rich peripheral support
  - SpaceWire
  - MIL-STD-1553
  - CAN 2.0
  - DMA Controller
  - SPI, UART, Timers, GPIOs
  - Watchdog
- Packaged in 564 lead CCGA
- High Performance
  - 120MHz, 130DMIPs
  - -55°C to 150°C Junction Temp
- High Radiation Tolerances
  - 107 MeV-cm²/mg SEU (logic)
  - 40 MeV-cm²/mg SEU (memory)
  - 125 MeV-cm²/mg SEL at 150°C
  - 300 kRad TID
- QML Class Q+
- Contact your ON Semiconductor representative for more information.

Description

ON Semiconductor is currently developing an ARM926-based System on Chip (SoC), leveraging radiation hardened by design (RHBD) techniques. This solution is capable of supporting a full operating system such as Linux, including full floating point support and a complete set of peripherals. The device will also contain an external Advanced High-performance Bus (AHB) interface for high bandwidth communication to external components, thus enabling customers to interface to custom/specific IP. The device will be manufactured in ON Semiconductor’s 110nm on-shore technology node, leveraging RHBD techniques to insure high robustness in radiated environments.

![Diagram of Alpine – Radiation Hardened ARM926-Based SoC]
**Product Processing**

**Special Packaging**
- Custom package developments
- Drop in replacement for ASICs / FPGAs
  - No need to modify the board footprint
- Aerospace / defense packaging
  - From ceramic packages to complex flip-chip BGAs
  - On-shore assembly and test capabilities
  - Thermally enhanced packages

**Extended Temperature**
- ON Semiconductor supports extended temperature in several technologies
  - -55 to +125°C for 0.5 µm and 0.35 µm process technology
  - -55 to +150°C for 180 nm process technology
  - -55 to +150°C for 110 nm process technology

**Security Capability**
- ON Semiconductor partners with third party IP providers
- Offers anti-tamper, error correction, and encryption capabilities with third parties

**Avionics**
- Demonstrated SEL immunity
- Soft error rate data available for logic and memories for 110 nm and 180 nm process technologies

**Non-Volatile Memory**
- 0.5 µm and 0.35 µm process technologies offer up to 1 kb EEPROM with a maximum configuration of 32 x 32; temperature ranges vary
- ONC18 (180 nm) offers two memory options
  - One Time Programmable (OTP) up to 256 kb; -40 to +125°C
  - EE Array up to 1 kb
- SP110 (110 nm) capable of supporting OTP
  - -40 to +125°C up to 312 kb
ON Semiconductor is a leading supplier of System-on-Chip (SoC), Application Specific Integrated Circuit (ASIC), and other custom solutions, supporting a wide range of applications in the automotive, industrial, medical, and aerospace & defense markets. ON Semiconductor has designed and manufactured more than 5,000 custom integrated circuits over the last 50 years.

**ON Semiconductor SoC, ASIC, and Custom Product Benefits**

Advanced, integrated SoC and ASIC devices enable optimized performance and power efficiency, through integration. Security of intellectual property may be enhanced through hardware embedding. The elimination of inter-package connections may reduce noise.

In addition, the reduction in the number of components may:

- Reduce required board space
- Simplify board routing
- Simplify board testing
- Improve reliability
- Lower BOM cost
Mixed-Signal ASIC Solutions

Value Proposition

- Experienced resources and assets to bring customers’ design objectives successfully to market
- Ability to integrate customers’ IP into single-chip solution, thereby protecting the IP
- Flexible cost models to reduce customers’ total cost

Design Engineering

- Approximately 200 expert mixed-signal designers with extensive SoC and SiP experience
- Robust custom development process
- Dedicated project managers track & report development progress
- Flexible customer development engagement – from full turnkey to subcontractor production services
- Design expertise in:
  » Sensor interface
  » Medical imaging
  » Energy management
  » Building & home control

IP & Fab Processes

- Analog-focused CMOS/BCDMOS and SOI technologies utilizing internal fabs and external foundry partners
- Low, medium, high voltages – ≤1 V to 90 V
- Low current optimization — active & standby
- Low noise design — “count the electrons”
- High temperature — ≤200°C (profile, for selected technologies)
- Non-Volatile Memory (EEPROM, OTP), RAM & ROM
- Embedded digital IP
- Robust ESD protection
- Extensive building blocks consisting of amplifiers, references, DACs, ADCs, linear & switching regulators, power management, etc.

### IP & Fab Processes

<table>
<thead>
<tr>
<th>Category</th>
<th>Mixed Signal Intellectual Property (IP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial Interfaces</td>
<td>USB 3.0/2.0/1.1, HDMI, MIPI, I2C, SPI, CAN, UART</td>
</tr>
<tr>
<td>Microprocessors</td>
<td>ARM, RCore DSP, R8051, AMBA/AHB/APB Peripherals</td>
</tr>
<tr>
<td>Memory</td>
<td>SRAM, DPRAM, ROM, EEPROM, OTP, FLASH</td>
</tr>
<tr>
<td>Clocking</td>
<td>Oscillators, PLLs, DLLs</td>
</tr>
<tr>
<td>Encryption</td>
<td>ECC, AES, 3-DES, DES, RSA</td>
</tr>
<tr>
<td>Data Converters</td>
<td>DAC, ADC (8 - 20 bits, 1 KSPS - 120 MSPS)</td>
</tr>
<tr>
<td>Power Management</td>
<td>Efficient Switching Regulators, LDOs, Charge Pumps, Thermal Protection</td>
</tr>
<tr>
<td>References</td>
<td>Precision Bandgaps, Current References, Temperature Sensors</td>
</tr>
<tr>
<td>Analog and High Voltage Interfaces</td>
<td>High-Voltage Drivers, Display and LCD Drivers, Class D Amplifiers</td>
</tr>
<tr>
<td>Signal Conditioning</td>
<td>PGA, Instrumentation Amps, Digital and Analog Filters</td>
</tr>
</tbody>
</table>
Proven Expertise

The comprehensive digital ASIC offering from ON Semiconductor includes multiple manufacturing locations with state-of-the-art to legacy technologies to support your design requirements. We provide complete solutions from product development, manufacturing, test, and packaging, to quality engineering support and supply. We offer early engagement with our product definers to assess the best overall technical solution enabling a strong partnership throughout each step of the project lifecycle, from concept to production. ON Semiconductor supports reliable long-term manufacturing to meet the requirements of aerospace/defense, automotive, industrial, communication and other markets. With more than 40 years of IC experience, we guide our customers to the best technical and most economical ASIC solution.

Digital solutions from 0.5 m to 22 nm

- Flexible ASIC design interfaces including whole or partial RTL, Netlist, and GDSII content
- Robust FPGA proof-of-concept validation flow when targeting an ASIC
- FPGA-to-ASIC, ASIC-to-ASIC, and multi-chip-to-ASIC conversions
- EOL support with ASIC-to-ASIC conversion approach
- Big D (Digital) / Small A (Analog) ASIC capability to increase integration and simplify board design
- Up to 50 million gates and 50 Mb of memory
- Product Definers to advise on best overall solution
- Proven technologies to ensure long term, continuous supply
- Secure supply with domestic manufacturing
- Support for long-life, small volume applications
- High reliability, high temperature, special packaging and handling
- Complete solutions including product development, test, package engineering, quality engineering, and failure analysis
- Full ITAR handling available
- QML Flow, Trusted Supplier
- DO-254 compliance support
- Custom packaging capability to match most pin-outs and package types
Comprehensive Intellectual Property Offering

ON Semiconductor offers a suite of system IP suitable for a variety of applications, including those requiring high-speed serial I/O (SerDes), external high performance memory interfaces, processors and a variety of other hard and soft IP. Combined with support for a rich family of I/O standards, our digital ASIC technologies and IP provide optimal solutions for aerospace/defense, automotive, communications, industrial, consumer, computing, and medical applications. ON Semiconductor is an Arm® microprocessor licensee, and has access to multiple Arm cores for integration into silicon products.

### Digital Standard Cell Product Families

#### Standard Cell Product Families

<table>
<thead>
<tr>
<th>Family</th>
<th>Core Voltage (V)</th>
<th>I/O Voltage (V)</th>
<th>I/O Types</th>
<th>System Performance</th>
<th>Special Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC5 0.5 µm</td>
<td>5.0</td>
<td>5.0, 3.3</td>
<td>PCI, TTL, LVTTL, LVCMOS</td>
<td>75 MHz</td>
<td>Long-Term 5 V Support, High Temp</td>
</tr>
<tr>
<td>SC3 0.35 µm</td>
<td>3.3, 2.5</td>
<td>5.0, 3.3</td>
<td>PCI, GTL, HSTL, SSTL, LVTTL, LVCMOS, LVPECL</td>
<td>100 MHz</td>
<td>EEPROM, High Temp</td>
</tr>
<tr>
<td>ONC18 180 nm</td>
<td>3.3, 1.8, 1.5, 5.0</td>
<td>3.3, 2.5, 1.8, 5.0</td>
<td>PCI133/66, DCI, HSTL, SSTL, LVTTL, LVCMOS, LVPECL, LVDS</td>
<td>266 MHz</td>
<td>NVM, OTP, High Vt, High Temp</td>
</tr>
<tr>
<td>ONC110 SP110 110 nm</td>
<td>1.2</td>
<td>3.3, 2.5, 1.8, 1.5, 1.2</td>
<td>PCI133/66, DCI, HSTL, SSTL, LVTTL, LVCMOS, LVPECL, LVDS, CML, PCIX</td>
<td>450 MHz</td>
<td>OTP, Dual Source Capability, Mil Temp</td>
</tr>
<tr>
<td>ONK65 SP65/55</td>
<td>1.2, 1.0</td>
<td>3.3, 2.5, 1.8, 1.5, 1.2</td>
<td>PCI133/66, DCI, HSTL, SSTL, LVTTL, LVCMOS, LVPECL, LVDS, CML, PCIX</td>
<td>600 MHz</td>
<td>Extensive IP Portfolio</td>
</tr>
<tr>
<td>SP40 40 nm</td>
<td>1.1, 0.9</td>
<td>3.3, 2.5, 1.8, 1.5, 1.2</td>
<td>PCI133/66, DCI, HSTL, SSTL, LVTTL, LVCMOS, LVPECL, LVDS, CML, PCIX</td>
<td>850 MHz</td>
<td>Extensive IP Portfolio</td>
</tr>
<tr>
<td>SP32/28 32 nm, 28 nm</td>
<td>0.85 ~ 1.05</td>
<td>3.3, 2.5, 1.8</td>
<td>PCI, DCI, HSTL, SSTL, LVCMOS, LVPECL, LVDS, CML</td>
<td>1000 MHz</td>
<td>Extensive IP Portfolio</td>
</tr>
<tr>
<td>GF22 FDX/FDSOI</td>
<td>0.88, 0.72, 0.40</td>
<td>3.3, 1.8, 1.5, 1.2</td>
<td>PCI, DCI, HSTL, SSTL, LVCMOS, LVPECL, LVDS, CML</td>
<td>1.8 GHz, 2.1 GHz w/BB</td>
<td>Body Bias, Ultra Low Power, Extensive IP Portfolio</td>
</tr>
</tbody>
</table>

#### Category | IP Cores
---|---
**Hi-Speed SerDes** | PCI Express Gen 1/2/3, XAUI, Sata I/II/III, EPON, Serial Rapid I/O (SRIO), 1G Ethernet, 10G Ethernet
**Serial Interfaces** | USB 3.0/2.0/1.1, HDMI, I2C, CAN, UART
**Application Layer Support** | 10/100 Ethernet, 1G Ethernet, 10G Ethernet, PCI Express Gen 1/2/3, Sata I/II/III, SRIO, USB 3.0/2.0/1.1, DDRX Controllers, EMAC4, MII, RMII, SMII, XFI, HDMI
**Bus Interfaces** | PCI, AMBA/AHB, ARM7, PLB, PCMCIA
**Microprocessors** | Arm, ARC, PowerPC, R-Core, M8051, AMBA/AHB Peripherals
**Memory Interfaces** | DDR, DDR2, DDR3, DDR4, QDR-II
**Data Converters** | ADC, DAC
**Error Correction, Encryption & Anti-Tamper** | ECC, DES, 3DES, Reed-Solomon, RNG, PK Processor, Secure SRAM
**DSP Functions** | FFT, Muli, Divide, Accumulate, Up/Down Converter, FIR
**FPGA Conversion IP** | Memory Wrappers, LUT RAM, I/O Standards, Hardware DSP Functions, FIFOs, Clocking Emulation

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ON Semiconductor
ASIC Conversions
FPGA-to-ASIC, ASIC-to-ASIC

ASIC Conversions and EOL Solutions
ON Semiconductor provides long-term solutions to customers facing device or process obsolescence with their current ASIC or FPGA vendor. We provide reliable second sourcing options as well as cost reduction solutions to help you maintain your competitive edge. Conversion of an older technology to an optimized ASIC solution can provide a mid-life enhancement and extended life cycle.

FPGA Conversions
ON Semiconductor is the industry leader specializing in converting FPGAs to ASICs. We provide significant cost savings, performance enhancement, and product assurance. Our customers have been able to reduce system costs considerably by successfully substituting their high cost FPGAs with drop-in ASIC replacements in over 4,000 applications. In most cases, higher performance, lower power and better thermal performance can be achieved in the ASIC. ON Semiconductor offers a parallel development path for FPGA development. This leverages the FPGA development benefits while accelerating the path to production with an ASIC.

FPGA to ASIC Conversion
The Best of Both Worlds

<table>
<thead>
<tr>
<th>METRIC</th>
<th>FPGA</th>
<th>ASIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development Cost</td>
<td>①</td>
<td>①</td>
</tr>
<tr>
<td>HW/SW Co-Design</td>
<td>①</td>
<td>①</td>
</tr>
<tr>
<td>ECO Turn-Around</td>
<td>①</td>
<td>①</td>
</tr>
<tr>
<td>Time to Market</td>
<td>①</td>
<td>①</td>
</tr>
<tr>
<td>System Performance</td>
<td>①</td>
<td>Single-chip solution</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>①</td>
<td>3-4x typical power reduction with ASIC solution</td>
</tr>
<tr>
<td>Unit Cost</td>
<td>①</td>
<td>ASIC price 25 to 75% of the FPGA piece price</td>
</tr>
<tr>
<td>Security</td>
<td>①</td>
<td>No configuration boot-up vulnerabilities</td>
</tr>
<tr>
<td>Non-volatility (LAPU)</td>
<td>①</td>
<td>Cold-start, Hot-swap enabling</td>
</tr>
<tr>
<td>Life Cycle Support</td>
<td>①</td>
<td>ASIC production stability</td>
</tr>
<tr>
<td>Harsh Environments</td>
<td>①</td>
<td>Radiation effects, flight-criticality, on-shore</td>
</tr>
</tbody>
</table>

Conversion Features and Benefits
- Automatic design migration to a Standard Cell ASIC
- Low NRE, low cost drop-in replacements
- Multiple-to-one conversions for higher level of integration
- Original circuit functionality and performance maintained
- Optional performance enhancements for a competitive edge
- ASIC IP optimized for FPGA migrations
- Single-chip, non-volatile solution results in Live-at-Power-Up (LAPU); enhanced security; immunity to configuration logic errors resulting from SEE
- Significant reduction in power usage
- Improved cost through die size reduction
- Directly owned and operated fabs, plus access to industry standard third-party foundries
- Long fabrication process life
- On-shore production paths for most technologies
Custom Foundry Services Overview

ON Semiconductor has a broad portfolio of custom and standard foundry offerings, including mixed-signal processes.

Our mixed-signal processes with high voltage and low power options are ideally suited for products in ROIC applications and in military, aerospace, automotive, medical and industrial markets.

Other offerings include custom process installation & modification, custom short-loop wafer processing, and back-end services, such as backside metallization, wafer thinning, probe, packaging, test, and logistics.

Service Oriented

ON Semiconductor understands customer needs and is dedicated to meeting them, from unsorted wafers to tested and packaged units. Customers are paired with a single contact for all business and technical issues for consistent support from initial engagement to production.

With high quality manufacturing facilities in the U.S., Europe and Asia, ON Semiconductor delivers prompt, cost-effective solutions to electronic manufacturers worldwide.

Our technology is design ready with excellent, easy to download design kits through MyON link on the www.onsemi.com Web site.

Trusted Source

ON Semiconductor is a registered ITAR supplier and has also been granted Category 1A Trusted Design, Trusted Test, and Trusted Foundry accreditation for its on-shore fabrication facilities in Idaho and Oregon.

Company Certifications

IATF 16949, ISO 9001, AS 9100, ISO 14001, MIL-PRF-38535, OHSAS-18000, CTPAT, STACK, and QML.

Process Longevity

ON Semiconductor's philosophy for process longevity means we keep needed processes around to accommodate your long-term needs. We are committed to supporting long-life products and are dedicated to building long-term relationships. Supporting this is the company's financial strength and commitment to effective use of resources. As a result, our customers have the confidence to make long-term product decisions without the concern of process obsolescence.

<table>
<thead>
<tr>
<th>Node (um)</th>
<th>Process Name</th>
<th>No. Metal Layers</th>
<th>Wafer Size (mm)</th>
<th>Operating Voltage (Vgs)</th>
<th>HV Devices (Vds)</th>
<th>N-Ch DMOS</th>
<th>P-Ch DMOS</th>
<th>Bi-Polars</th>
<th>Linear Cap</th>
<th>Memories</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.065</td>
<td>ONK65BCD*</td>
<td>5-8</td>
<td>300</td>
<td>1.2, 1.8, 2.5, 3.3</td>
<td>24, 45</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>MIM</td>
<td>Y Y Y Y Y</td>
</tr>
<tr>
<td></td>
<td>ONK65</td>
<td>5-8</td>
<td>300</td>
<td>1.2, 1.8, 2.5, 3.3</td>
<td>3.3</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>MIM</td>
<td>Y Y Y Y N</td>
</tr>
<tr>
<td>0.18</td>
<td>I4T + I4Te</td>
<td>4-6</td>
<td>200</td>
<td>1.8, 3.3</td>
<td>45, 60, 70</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>MIM</td>
<td>Y Y Y Y Y</td>
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* In development.
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- Wide variety of standard CMOS, BCD and high voltage process offerings
- Flexible manufacturing available (process modifications, lot splits, etc.)
- Multiple fab strategy to enable dual sourcing
- Specialty services such as advanced die stitching
- Shuttle services & MLR for low volume prototyping
- DMEA Accredited Trusted Foundry and Broker
- Low volume strategic engagements
- Partial fab processing, assembly & test services

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- FoundryPlusSM Added-Value Services – wafer sort, thinning, backside metalization, packaging, testing
- Custom Process Expertise – development, transfers, & modifications

Experience
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- Flexible manufacturing options
- Process longevity
- Full service optimized supply chain

Quality
- Quality culture – Road To Zero Defects
- QML (DoD) Certifications
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- TS-16949, ISO-26262, AEC-Q100
- Trusted Supplier, ITAR Certification
- OHSAS 18001
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