

# e2v aerospace and defence semiconductor capabilities overview

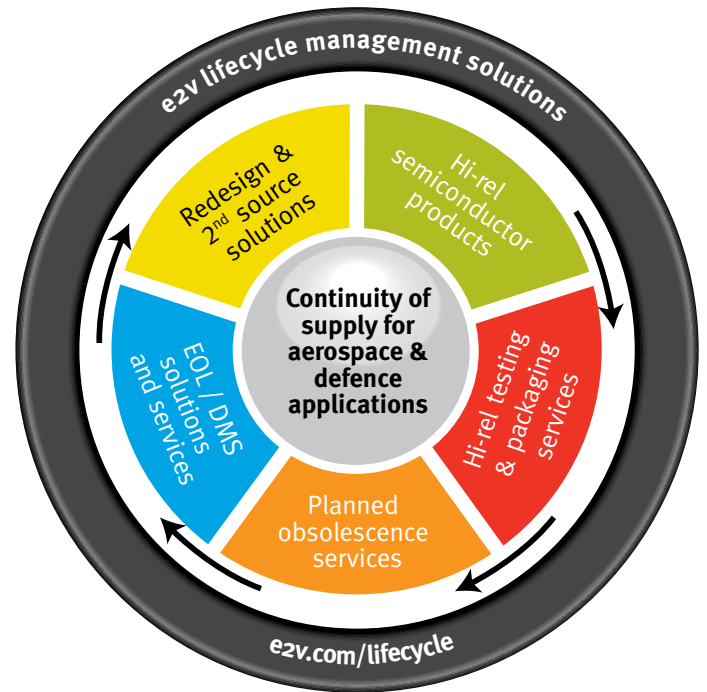


e2v has been supplying critical components to the aerospace and defence market for over 60 years.

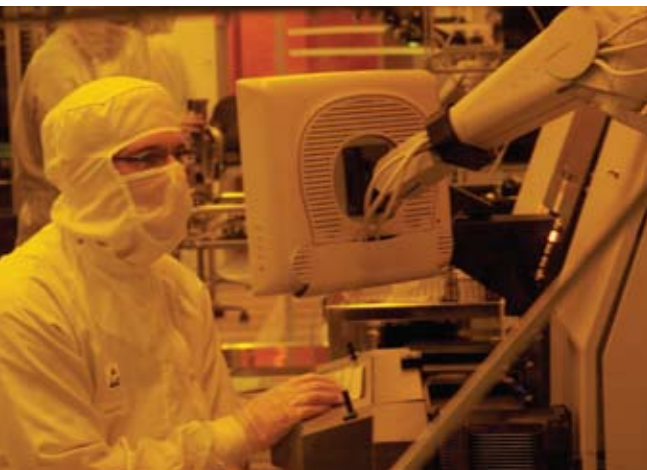
**Q SEMI** is the respected brand of extended life semiconductor devices for mission critical applications.

## Semiconductor lifecycle management

Complex aerospace and defence equipment is at risk from the effects of unmanaged obsolescence before and after entering service. e2v offers design, development and re-engineering services combined with the capability to store, test and package devices.



e2v is the mil/aero focused supplier with the most experience in addressing secure continuity of supply.

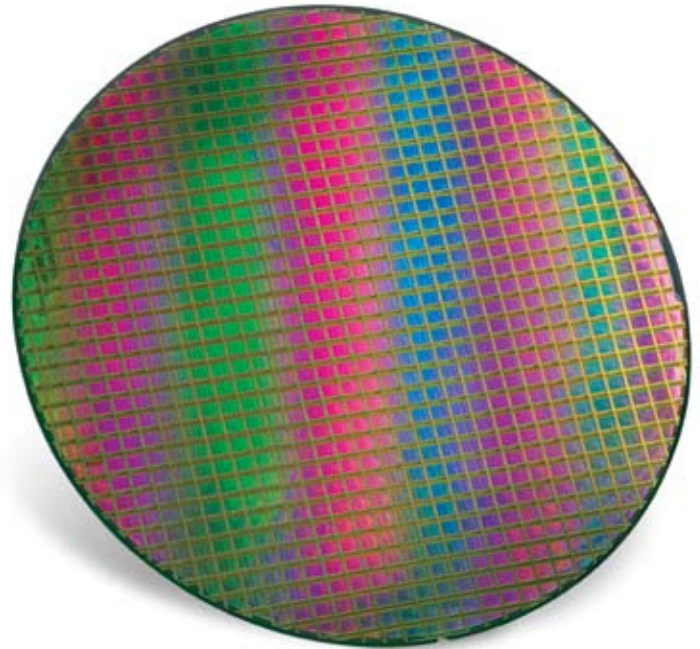


To learn more about our semiconductor lifecycle management (SLiM) programme, visit [e2v.com/lifecycle](https://www.e2v.com/lifecycle) or contact your local salesperson.

# Wafer fab, assembly, packaging and test services

## Wafer fabrication, banking and storage

- Extensive range of DSCC qualified wafer fabs
  - Foundries in North America, Europe and Asia
- Dedicated secure nitrogen storage areas
  - Controlled temperature and humidity environment
- Long-term inventory supply methodology
  - Risk assessment, qualification and periodic validation



## Assembly and packaging

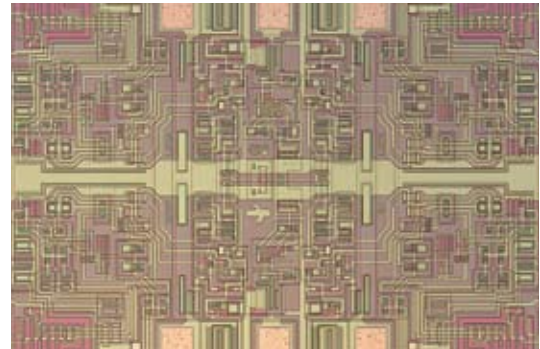
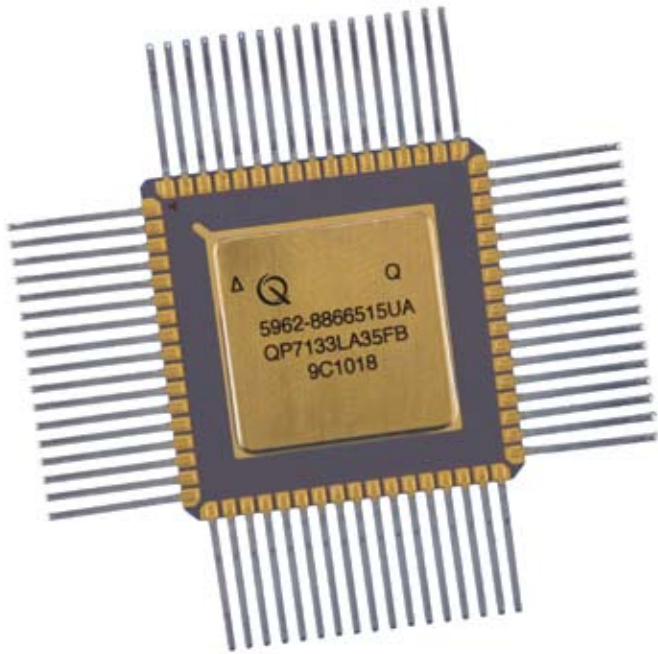
- QML certified assembly in-house and subcontract
  - Ceramic and plastic package offerings
- Full wafer processing capability
  - Low/high temperature handlers and probers
- Package re-design and characterisation
  - Thermal/electrical analysis and qualification



## Test development and military temperature qualification

- Test migration and redevelopment capability
  - Domestic and offshore QML test facilities
- Automated and semi-automated test systems
  - Military temperature handlers and probers
- Full AS9100/ISO9001 certified processes
  - Burn-in, temp cycling, qualification, life test and environmental testing

## Complete redesign capability



### Product design, characterisation and qualification

- ↳ Expertise in semiconductor product design
  - Engineering design
  - Test development
  - Package design
  - Product characterisation
  - Full QML qualification
- ↳ Wide range of capabilities
  - Domestic and international design centres
  - Proficiency in CMOS, Bipolar, BiCMOS
  - Wide range – Micros, Memory, Logic, Analogue
  - Complete test redevelopment capability
  - Re-qualification for mil/aero requirements

### Custom solutions – custom product offerings for obsolete devices

#### Flexible wafer fabrication options

- ↳ Original manufacturer wafers
  - Sourcing from managed die-bank programme
  - Wafers held and built to order
- ↳ Re-engineered wafer design
  - Form, fit, function drop-in replacements
  - Ensures long-term wafer availability

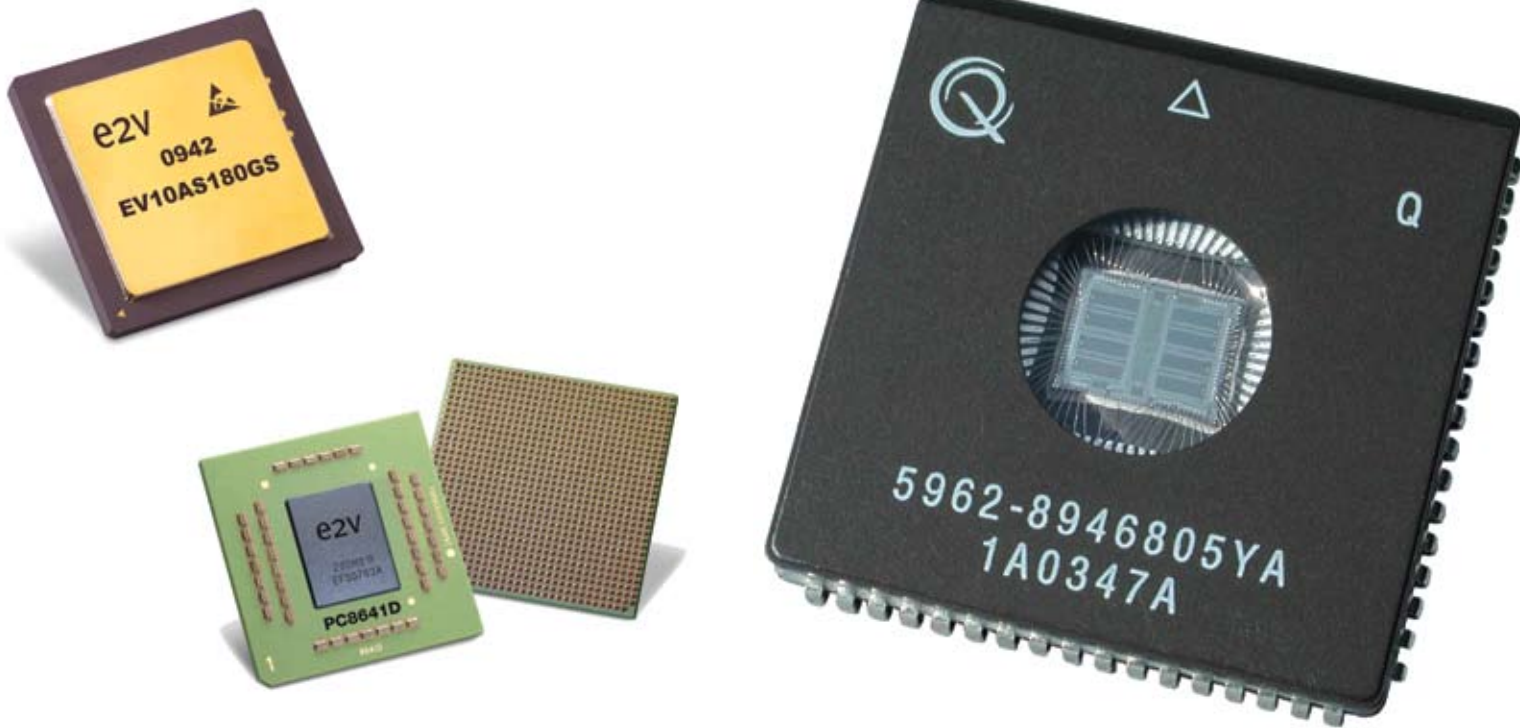
#### Wide variety of packaging options

- ↳ Original package design
  - Meets all original package requirements
  - Hermetic and plastic packages
- ↳ Re-designed packages
  - Move design into different packages
  - Extends availability of discontinued packages

#### Guaranteed to meet quality standards

- ↳ Original wafers and packages
  - Built to any level of reliability including space
  - Full compliance to DSCC SMDs
- ↳ Re-designed wafers and packages
  - Full test programme re-development
  - Complete product qualification

## Full service, qualified mil/aero supplier



### Experienced aerospace and defence supplier

- Founded in 1947, e2v provides specialised components and sub-systems for exacting aerospace and defence requirements and specialist semiconductor solutions from our Grenoble, France facility
- Founded in 1985, e2v Santa Clara (formerly QP Semi) offers high reliability components to military and aerospace contractors
- e2v aerospace and defence combines the expertise of these two companies to offer a variety of mil/aero services
  - Design
  - Assembly
  - Electrical test
  - Mechanical test
  - Environmental test
  - Qualification
- Full-service semiconductor lifecycle management
  - Extensive experience in die banking, repackaging and testing of product to military specifications
  - Wide range of fully re-designed and qualified products
  - Guaranteed supply for maximum programme continuity

### Wide portfolio with known e2v and QP Semi brands

- e2v and QP Semi brands are all part of e2v aerospace and defence
  - Wide variety of mission-critical devices
  - DMS, EOL and LTB devices
- Broad product line supplier
  - Over 3700 QML approvals/listings
  - QML Class V and Q certified manufacturer
- Wide variety of semiconductor products
  - Microprocessors, microcontrollers, peripherals
  - MRAM, SRAM, PROM, E/EEPROM, FIFO, Dual Port
  - Programmable Logic, CMOS/TTL/ECL Logic
  - High speed broadband data converters

### Highest quality controls

- Fully certified to AS9100 and ISO9001
- Ongoing total quality management, ESD, and statistical quality control training and implementation

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