

Hybrid  
Technologies

## Hybrid Technologies

Murata Power Solutions has a broad range of processing capabilities, coupled with a depth of technical knowledge and design experience gained over 30 years leading this market.

When one of our standard products does not quite fit the bill, we will work with you to create a custom solution, leaving you secure in the knowledge that the tailored design meets your needs and is produced in the same MIL-PRF-38534 Class H facility as our standard products.

This short overview cannot cover everything you may need, or every capability we have. Please contact us to discuss your application and we'll work in collaboration with your team to create the optimum solution that meets your requirements.

Call us at **+1 800 233 2765** or visit [www.murata-ps.com/hybrid](http://www.murata-ps.com/hybrid)



## Standard Products

We have many standard hybrid designs that have been proven in the field for their reliability and performance. These include:

### Sampling A/D Converters

- 12-18 bit resolutions
- 14-bit dual sampling A/Ds
- Sampling A/Ds with integrated correlated double samplers (CDS)
- Sampling A/Ds optimized for imaging applications

### Stand-alone Correlated Double Samplers (CDS)

- 14-bit settling
- Up to 5 megapixels per second

### Stand-alone A/D Converters

- 7 and 8-bit Flash A/Ds
- Standard pin-out legacy A/Ds

### Sample/Hold Amplifiers

- From 0.005% accuracy
- 14-bit resolution in 40ns

### Multiplexers

- 4-channel / 8-channel
- From 0.01% accuracy
- Settling time speeds from 50ns

### Digital-to-Analog Converters

- Up to 16-bit resolution
- Current and/or voltage outputs
- Settling times from 25ns
- Input latching capability

### Data Acquisition Systems

Functionally complete, packaged product that can combine:

- Input multiplexer
- Instrumentation amplifier
- Sample-hold A/D converter
- Interface logic

### High Reliability Models

- DSCC models available
- MIL-STD-883



## 29-Step Production Testing

Depending on the screening level required, our hybrid devices are subjected to as many as 29 production testing processes (each step controlled by a QA process) including:

- 4 in-process audits
- 4 inspection points

Multiple in-process tests include:

- First electrical test
- Power stress test
- Second electrical test
- Visual inspection (internal)
- Stabilization bake
- Temperature cycle
- Constant acceleration
- Pre-burn-in electrical test
- Burn-in
- 25C electrical test
- Temperature test
- Leak tests
- Room temperature final electrical tests
- External visual inspections



**NEW...**

### ADSD-1420S

#### Dual 14-Bit Sampling A/D Converter

- 20MSPS sample rate
- Functionally complete design
- Optimised for low-noise applications
- No missing codes over full temperature range
- Ideal for both time and frequency-domain applications

Typical applications include high-speed data acquisition systems, medical instruments, radar I/Q, DSP, and automatic test equipment (ATE) for military, industrial or commercial applications.

### Further Information

For more data on our standard products go to [www.murata-ps.com/hybrid](http://www.murata-ps.com/hybrid) or request a copy of our product data book.



**NEW...**

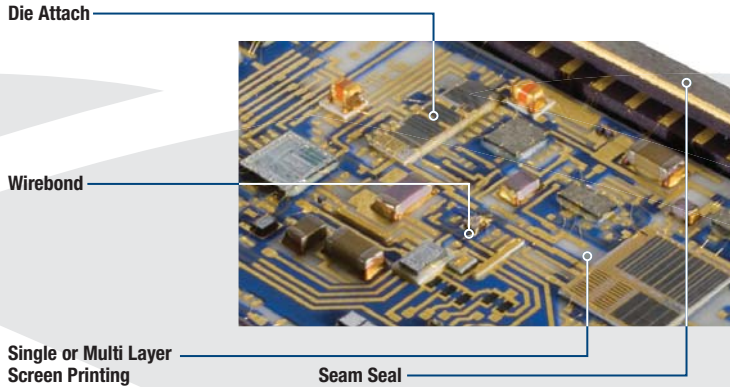
### ADS-939

#### 16-bit Sampling A/D converter

- True 16-bit resolution
- 10MSPS sampling rate
- Functionally complete design
- Low power consumption
- State-of-the-art signal to noise ratio, optimized for low noise applications
- No missing codes over full temperature range

# What is a hybrid product?

In general terms, a hybrid is a product that uses various technologies in its construction to improve performance and reliability or to reduce size.



## Process Capabilities

All in-house at our dedicated Hybrid facility in Mansfield, MA:

### Hybrid High-Reliability Services

- Die attach
- Wirebond
- Seam seal
- 29-step production testing
- Military 883 screening
- Conformance inspection

### Surface Mount/PCB Services

- Automatic pick and place
- Manual pick and place
- Pin insertion
- Manual soldering
- Encapsulation

### Clean Room Environment

- Class 100,000
- Military 883 screening

### Thick Film Services

- Single layer screen printing
- Multi layer screen printing
- Gold or silver conductors

## Custom Solutions

With our broad process capability and design knowledge, we can create a custom product that meets your needs, allowing you to focus on other aspects of your design and shorten your time to market.

### Typical modifications include:

- Modified input range
- Tighter DC specifications
- Modified dynamic specifications
- Custom tests or temperature ranges



- Incorporating some of your on-board circuitry into one of our existing modules
- Increasing the speed of an existing product
- Modifying a package or pinout
- Converting a standard/custom product into an SMT solution

## Medical Imaging



### CAT Scan

If image accuracy and resolution is important to you, our products will deliver state-of-the-art performance. Our Imaging Converters have an integrated Correlated Double Sampler that is directly fed from the CCD Detectors output, resulting in optimum signal to noise ratio, sharp images and the most accurate digital representations possible.

## Defense Systems



### Radar & Missile tracker/seeker

Our data acquisition components provide the performance, quality and high reliability demanded of all Defense Systems, such as Radar and Tracking system applications. All of our COTS components or full MIL screened (883) components have been processed on the same manufacturing line and are fully tested and ready to meet the requirements of your system.

## Scientific Research



### High Power Telescopes

Our products are designed to acquire an analog event and convert it into a digital format, to allow for real time or subsequent scientific analyzing. We offer true high resolution, high speed acquisition components and systems enabling outstanding system performance in a small footprint.

# Sales Offices

## Americas

### Headquarters

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