14-Bit, 15-Bit & 16Bit Sampling Analog-to-Digital Converters

DAS1157/DAS1158/DAS1159

FEATURES

- **Complete with High Accuracy Sample/Hold and A/D Converter**
- **Low Power Consumption: 650mW max, Vs = ±15V**
- **Rated Performance: -25°C to +85°C**
- **Low Nonlinearity (DAS1158 and DAS1159)**
  - **Differential: ±0.0015% FSR max**
  - **Integral: ±0.003% FSR max**
  - **Differential T.C.: ±1ppm/°C max**
- **High Throughput Rate: 18kHz min**
- **Byte-Selectable Tri-State Buffered Outputs**
- **Internal Gain & Offset Potentiometers**
- **All Hermetically-Sealed Semiconductors**
- **Improved Second Source to A/D/A/M-834 and A/D/A/M-835 Modules**

APPLICATIONS

- **Seismic Data Acquisition**
- **Portable Field Instrumentation**
- **Automated Test Equipment**
- **Process Control Data Acquisition**
- **Medical Instrumentation**

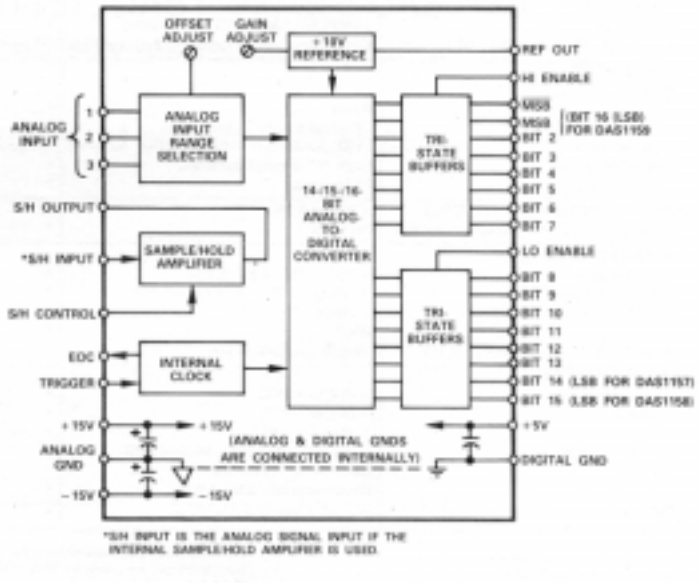

Figure 1. DAS1157/DAS1158/DAS1159 Block Diagram

GENERAL DESCRIPTION

The DAS1157/DAS1158/DAS1159 are 14-/15-/16-bit sampling analog-to-digital converters. They are ideally suited for use in portable and remote data acquisition equipment where low power consumption (650mW maximum) and wide temperature range (-25°C to +85°C rated performance) are required.

DAS1157/DAS1158/DAS1159 provide guaranteed high accuracy and high stability system performance essential to medical, analytical and process control equipment: differential nonlinearity of ±0.0015% max and integral nonlinearity of ±0.003% max (DAS1158 and DAS1159); no missing codes guaranteed; gain T.C. of ±8ppm/°C max, zero T.C. of ±80µV/°C max and differential nonlinearity T.C. of ±1ppm/°C max.

The wide dynamic range will enhance the performance of critical measurements in gas and liquid chromatography, blood analyzers, distributed data acquisition in factory automation and power generating equipment, and in automatic test equipment.

The DAS11157/DAS1158/DAS1159 make use of proprietary CMOS technology to achieve low power operation, while utilizing the latest integrated circuit and thin-film components to achieve the highest level of performance and reliability. All hermetically sealed semiconductor components are used to insure added reliability over a wide range of operating conditions.

As shown in Figure 1, each device contains a precision sample/hold amplifier, high accuracy 14-/15-/16-bit analog-to-digital converter, precision reference, CMOS tri-state output buffers (for direct 8-bit or 16-bit bus interface), user accessible gain and offset adjust potentiometers, and power supply bypass capacitors, all in a compact low profile 2" x 4" x 0.375" metal case package. No additional components are required for operation.

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