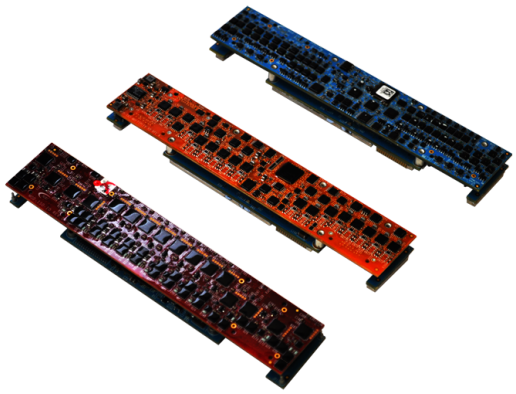
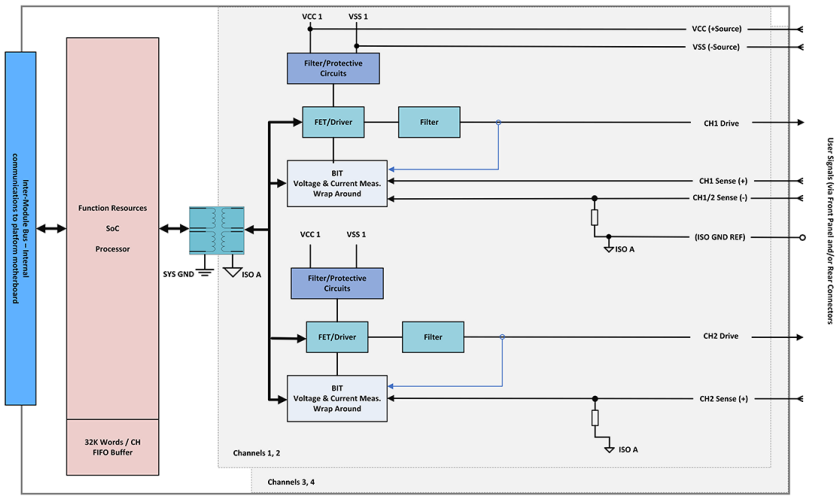



DA5 I/O Modules Digital-to-Analog Function Modules

4 Channel D/A, High-Voltage/High-Current Half-Bridge (2 Channel Full-Bridge) External VCC Sourced Outputs

Digital-to-Analog (D/A) module DA5 provides 4 independent D/A output channels (half-bridge) utilizing a single external supplied power source with full-scale operating range of 0-65 VDC (V-control mode) and 0-2 A (I-control mode). Alternatively, two channels can be paired (full-bridge) to achieve a full-scale operating range of ±65 V and ±2 A from a single external supplied power source. Linearity/accuracy is ±0.25% FS range over temperature. The DA5 provides either voltage or current control loop modes, which are programmable for the application.



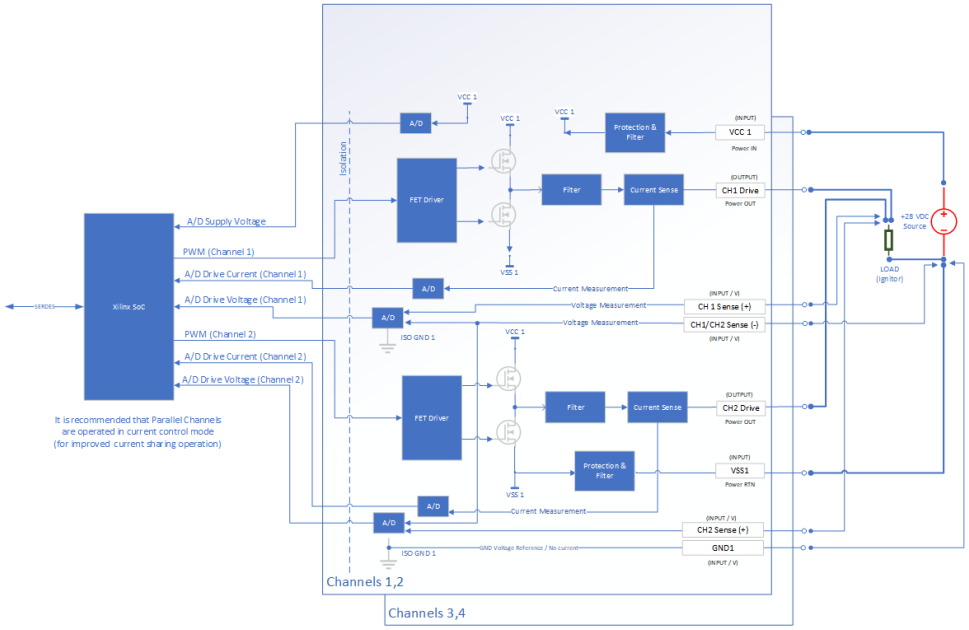


Specifications

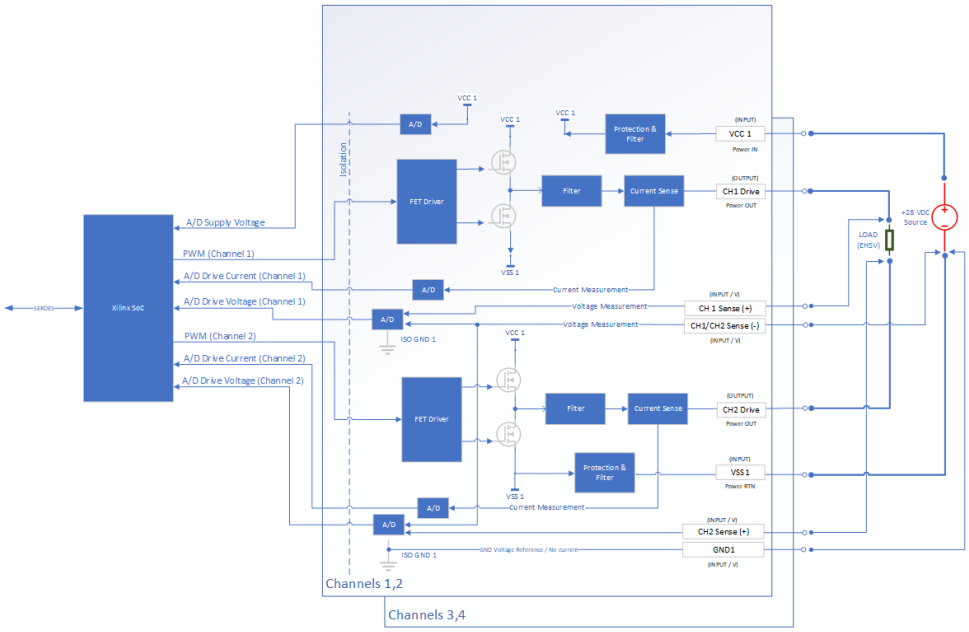
Resolution (Half Bridge)	**16-bits in voltage (V) and current (I) modes**
Resolution (Full Bridge)	**16-bits, plus one sign bit, in voltage (V) and current (I) modes**
Output Format	**Single-ended (half-bridge) or Differential (full-bridge)**
Output Range (V-Control)	**±65V**
Output Range (I-Control)	**±2A**
Output Impedance	**< 1 Ω**
System Protection	**Output is set to be disabled at reset or Power-On.**
Linearity Error	**±0.25% FS range over temperature (voltage-control mode; current-control mode TBD/characterized)**
Offset Error	**±500 mV / ±8mA**
Gain Error	**±1.75% FS range (voltage-control mode; current-control mode TBD/characterized)**
Settling Time	**450 µs typical (550 µs max) (voltage-control mode; current-control mode TBD/characterized)**
Data Buffer	**32K output buffer per channel**
Load	**Can drive a capacitive load of 2 A/CH max. (Source in half bridge or Sink in full bridge). Short circuit protected. When current exceeds 2.2 A for any channel, for > I2T calculation, that channel disabled.**
Update Rate	**8.57 µs per channel**
ESD Protection	**Designed to meet the testing requirements of IEC 801-2 Level 2. (4 kV transient with a peak current of 7.5 A and a time constant of approximately 60 ns).**
Power	**5 VDC @ ~0.8 A (External Source power/efficiency TBD/characterized)**
Ground	**Each channel is isolated from system ground with isolation barrier of continuous 500VDC.**
Weight	**~2.1 oz. (60g)**

Specifications (Continued)

Example Applications



Parallel Channels (Paired Channel), Single External Source, 0-28 V @ 4 A (max.) Example



Full Bridge-Mode (Paired Channels), Single External Source, ±28 V @ ±2 A (max.) Example

Architected for Versatility

NAI's Configurable Open Systems Architecture™ (COSA®) offers a choice of over 100 smart I/O, communications, or Ethernet switch functions, providing the highest packaging density and greatest flexibility of ruggedized embedded product solutions in the industry. Preexisting, fully-tested functions can be combined in an unlimited number of ways quickly and easily.

One-Source Efficiencies

Eliminate man-months of integration with a configured, field-proven system from NAI. Specification to deployment is a seamless experience as all design, state-of-the-art manufacturing, assembly and test are performed - by one trusted source. All facilities are located within the U.S. and optimized for high-mix/low volume production runs and extended lifecycle support.

Product Lifecycle Management

From design to production and beyond, NAI's product lifecycle management strategy ensures the long-term availability of COTS products through configuration management, technology refresh and obsolescence component purchase and storage.

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