NSI3600D

High Reliability Reinforced Isolated Amplifier with Integrated Isolated Power Supply

Datasheet (EN) 1.1

Product Overview

The NSI3600D is a high performance isolated amplifier with integrated isolated power supply that accept fully-differential input of ±250mV. The integrated isolated power supply enables single-power operation on the low side of the device without the need for a separate isolated power supply for the high side, effectively reducing the board area. The fully differential input is ideally suited for AC or shunt current monitoring in high voltage applications where isolation is required.

The device has a fixed gain of 8.2 and provides a differential analog output. The low offset and gain drift ensure the accuracy over the entire temperature range. High common-mode transient immunity ensures that the device is able to provide accurate and reliable measurements even in the presence of high-power switching such as in power supply and motor control applications.

The integrated isolated power supply detection and the open-drain diagnosis output simplify system-level design and diagnostics.

Key Features

- Up to 5000V_{rms} Insulation voltage
- ±250mV linear Input Voltage Range
- Low Offset Error and Drift:
  ±0.2mV (Max), ±3μV/°C (Max)
- Low Gain Error and Drift:
  ±0.3% (Max), ±50ppm/°C (Max)
- Low Nonlinearity and Drift:
  ±0.05% (Max), ±1ppm/°C (Typ)
- SNR: 84dB (Typ, BW=10kHz), 71dB (Typ, BW=100kHz)
- Wide bandwidth: 350kHz (Typ)
- High CMTI: 150kV/μs (Typ)
- System-Level Diagnostic Features: integrated isolated power supply detection
- Operation Temperature: -40°C ~125°C
- RoHS-Compliant Packages: SOP16(300mil)

Safety Regulatory Approvals

- UL recognition: 5000V_{rms} for 1 minute per UL1577
- CQC certification per GB4943.1
- CSA component notice 5A
- DIN EN IEC 60747-17 (VDE 0884-17)

Applications

- Shunt current monitoring
- Power Supplies
- Charging Piles
- Energy Storage Systems
- Solar Inverters
- Motor Drives

Device Information

Part Number	*Package*	*Body Size*
NSI3600D-DSWR	SOP16(300mil)	10.30mm × 7.50mm

Functional Block Diagrams

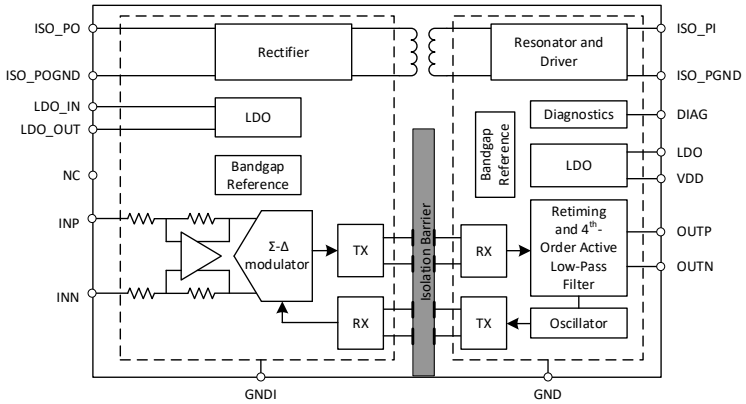

Figure 1. Function Block Diagram of NSI3600D