



Product Training Module: Micropower Omnipolar Hall-effect Digital Position Sensor ICs SL353 Series



Honeywell

Summary of Contents

- **In this training module, you will learn the following about Honeywell's Micropower Omnipolar Digital Hall-effect Sensor ICs:**
 - Introduction to what these sensors are
 - Key benefits to design engineers
 - Use in Industrial and Medical applications
 - Where to obtain product information



Introduction

- The SL353 Series Micropower Omnipolar Digital Hall-effect Sensor ICs are small, versatile, digital Hall-effect devices operated by the magnetic field from a permanent magnet or an electromagnet
- Micropower: Built-in timing circuitry turns the power to the IC on for a very short time—it is off for the balance of the period—significantly reducing the average current consumption
- Omnipolarity: SL353 Series is designed to respond to either a North or South pole, simplifying installation and helping to reduce total system costs
- This device features a BiCMOS IC design, a new Honeywell technology, that makes it possible to add more performance and functionality while reducing the IC size (compared to bipolar technology)

New Honeywell technology adds performance and functionality

Value to Customers

- **Energy efficient★**
 - Supply voltage as low as 2.2 Vdc, combined with a very low average current (1.8 μ A typ. for SL353LT—the lowest in its class)
 - Reduces power consumption
 - Provides extended battery life
 - Promotes energy efficiency
- **Push-pull output does not require external pull-up resistor★**
 - Simplifies interface with common electrical circuits
 - Potentially reduces PC board space and costs
- **Non-chopper stabilized design★**
 - Eliminates noise generated by products using this technique
 - Eliminates customers having to use filters to compensate for the noise
 - Reduces PC board space, part counts, and costs for the application

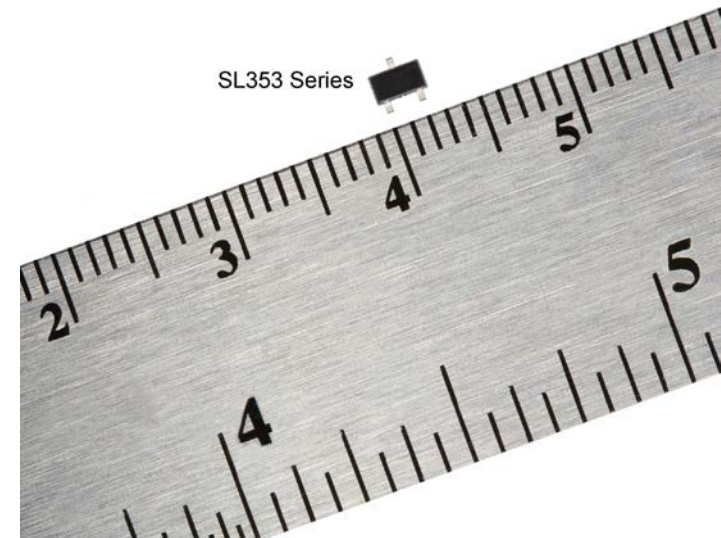


★ = competitive differentiator

Potentially reduces power consumption, PCB space, and cost

Features and Benefits

- **Versatile**
 - Omnipolar capability with high and low duty cycle options
 - Allows for use in a variety of potential applications with low power requirements and/or battery operation
 - Potential use for motion control, lid closure detection, presence-absence, metering, and displacement sensing
- **Stable**
 - Thermally balanced integrated circuit provides for stable operation over a wide temperature range, from -40 °C to 85 °C [-40 °F to 185 °F]
- **Subminiature size**
 - SOT-23 subminiature package size
 - Requires less PC board space
 - Allows for use in smaller assemblies



Versatile, stable, and subminiature size


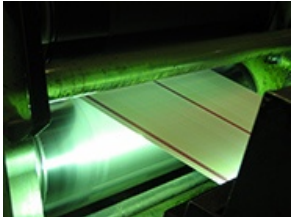


Features and Benefits

- **Cost-effective**
 - By using BiCMOS technology, Honeywell has been able to design a reduced size integrated circuit, saving on manufacturing costs while still meeting customer requirements
- **Helps reduce total system cost**
 - Can be operated by a North or South pole
 - Do not require the magnet polarity to be identified
 - Makes installation easier
- **Reduces manufacturing costs**
 - Supplied on tape and reel, often allowing for automated, lower-cost pick and place assembly
- **Compliant**
 - RoHS-compliant materials meet Directive 2002/95/EC



Cost-effective devices help reduce total system cost

Potential Industrial Applications

| | |
|---|---|
|  | <p>Door or lid closure detection in notebook computers, scanners, hand-held industrial computers or instrumentation</p> |
|  | <p>Mobile printer head position sensing</p> |
|  | <p>Trigger switch for battery-operated hand tools such (i.e. drills, drivers)</p> |
|  | <p>Reed switch replacement in battery operated security systems</p> |

Potential Industrial Applications



Magnetic encoder for building access (array)



Power switch or open-close detection in small battery-operated appliances (i.e. vacuum cleaners, fans)



Gas or water consumption measurement in remote, battery-operated utility meters

Potential Medical Applications



Small hand-held medical or dental equipment



Battery-operated infusion pumps, insulin pumps or other wearable medical devices

Online Resources

- To access more information about Honeywell's Micropower Omnipolar Digital Hall-effect Sensor ICs, [click here](#).

The screenshot shows the Honeywell website's product page for the SL353 Series Micropower Omnipolar Digital Hall-Effect Sensor ICs. The page features a navigation bar with links to HOME, ABOUT US, KEY INDUSTRIES SERVED, PRODUCTS & INFORMATION, NEWS & EVENTS, SALES & SUPPORT, and LOGIN. A search bar is located in the top right corner. The main content area includes a product image of the sensor ICs with numbered hotspots (1-9) for more information. To the right of the image are the product features, which include: Supply voltage as low as 2.2 Vdc, Very low average current 1.8 μ A typ for SL353LT - the lowest in its class, Reduces power consumption, Extends battery life, and Promotes energy efficiency. Below the features is a 'Product Overview' section. On the right side of the page, there is a 'Distributor Inventory' section with a search bar, a 'Download High Resolution Product Image' button, and a 'Product Sheets' section with links to PDF documents: SL353 Series Micropower Omnipolar Digital Hall-Effect Sensor ICs (English), 50061061: SMART Position Sensor, 100° and 180° Configurations, Issue 2 (English, German, Chinese), and Magnetic Sensors Line Guide.

Honeywell | Sensing and Control

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Search the entire website and product database

Start Here ... Search

HOME ABOUT US KEY INDUSTRIES SERVED PRODUCTS & INFORMATION NEWS & EVENTS SALES & SUPPORT LOGIN

SL353 Series Micropower Omnipolar Digital Hall-Effect Sensor ICs

Product Features
*competitive differentiator

1. *Energy Efficient

- * Supply voltage as low as 2.2 Vdc
- * Very low average current 1.8 μ A typ for SL353LT - the lowest in its class
- * Reduces power consumption
- * Extends battery life
- * Promotes energy efficiency

Where to Buy

Distributor Inventory

Input part number for stock availability

Download High Resolution Product Image

Product Sheets

- SL353 Series Micropower Omnipolar Digital Hall-Effect Sensor ICs (English)
- 50061061: SMART Position Sensor, 100° and 180° Configurations, Issue 2 (English, German, Chinese)
- Magnetic Sensors Line Guide

click hotspots to view features

Product Overview

Honeywell has expanded its Hall-effect sensor portfolio with the new **SL353 Series Micropower Omnipolar Digital Hall-effect Sensor ICs** that promote energy efficiency and help reduce PC board space and manufacturing costs for the customer.

About Honeywell Sensing and Control Products

- For more information about all of Honeywell Sensing and Control sensor and switch solutions, visit <http://sensing.honeywell.com>



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