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

Honeywell

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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

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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

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Value to Customers

- **Energy efficient★**
  - Supply voltage as low as 2.2 Vdc, combined with a very low average current (1.8 µA 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

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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

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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

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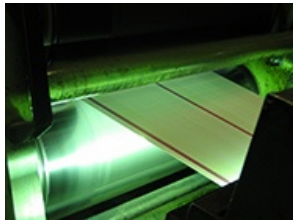
Potential Industrial Applications

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

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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

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Potential Medical Applications

	Small hand-held medical or dental equipment
	Battery-operated infusion pumps, insulin pumps or other wearable medical devices

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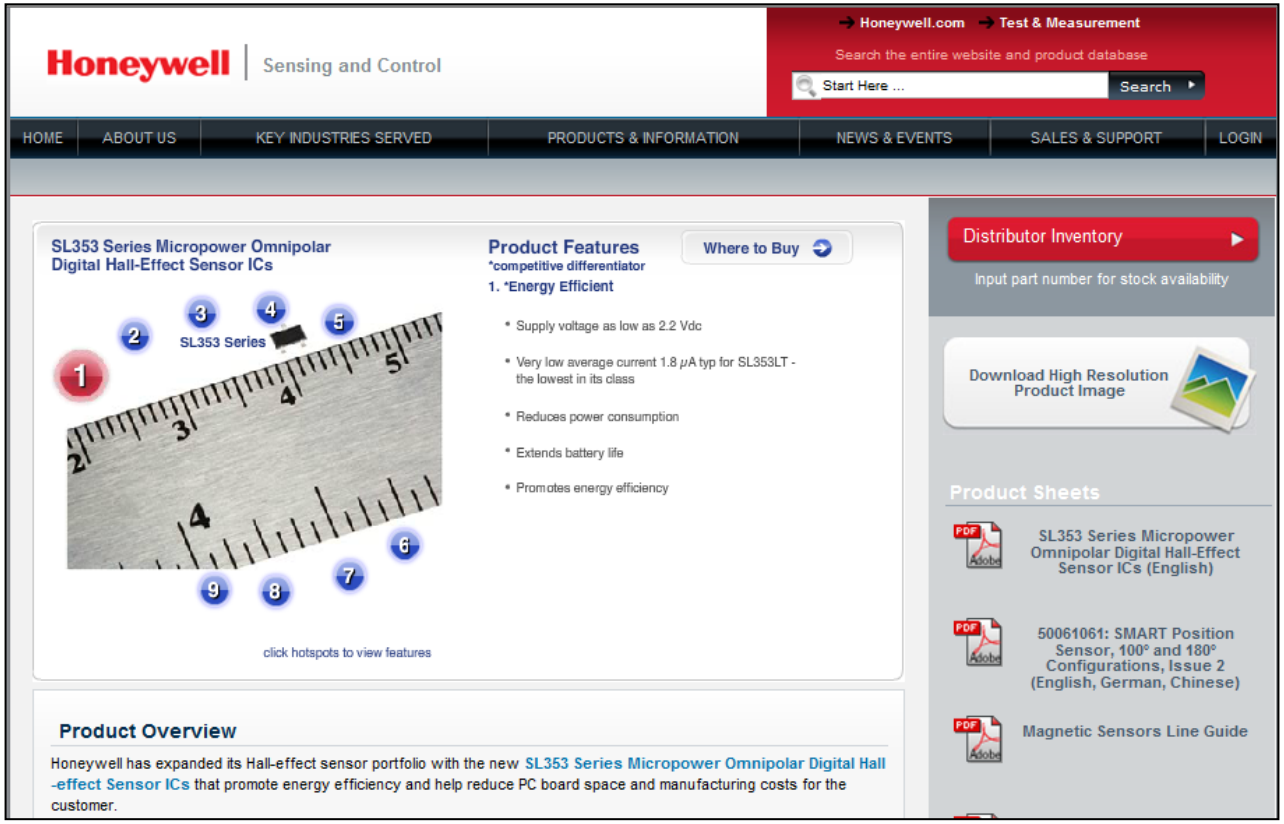
Online Resources

- **To access more information about Honeywell's Micropower Omnipolar Digital Hall-effect Sensor ICs, click here.**



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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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