

LDC0851 1.8-3.3V Inductive Switch

1 Features

- Reliable Contactless Switching
- Supply Voltage 1.8 – 3.3V
- Average Supply Current: <50uA
- Shutdown Current: <100nA
- Threshold accuracy over temp: <5%
- Not affected by DC magnetic field
- Magnet-free operation
- Resistor set threshold
- Production calibration not required
- Dedicated Enable pin
- Push-Pull Output
- 5ms Start-up time
- Insensitive to non-conductive environmental interferers (such as dirt, dust, oil, etc.)
- Supports remote sensor placement
- Operating Temperature Range -40 to 125°C
- Differential implementation robust against EMI

2 Applications

- Open/Close proximity switches
- White Goods
- Home Security and Tamper Detection
- E-Meters
- Printers
- Low-speed event counting for industrial markets
- Simple buttons in industrial and consumer markets

3 Description

The LDC0851 differential inductive switch is a highly reliable and accurate simple switch ideal for contactless and robust applications such as presence detection, event counting, and coarse position detection. A remote sensing coil and reference coil provides highly reliable and accurate switching over temperature without the need for calibration in production. Unlike competitive products, the LDC0851 does not require magnets, nor will it be affected by DC magnetic fields making it very robust in tamper detection markets. With a dedicated enable pin, the inductive switch can be duty cycled to lower power consumption for battery operated solutions. Inductive sensing technology provides reliable and accurate sensing even in the presence of dirt, oil, or moisture making them ideal for use in harsh or dirty environments. The LDC0851 fits in a small WSON-8 package for applications with space constraints.

Device Information⁽¹⁾

PART NUMBER	PACKAGE	BODY SIZE (NOM)
LDC0851	WSON-8	2mm x 2mm

(1) For all available packages, see the orderable addendum at the end of the data sheet.

Simplified Schematic

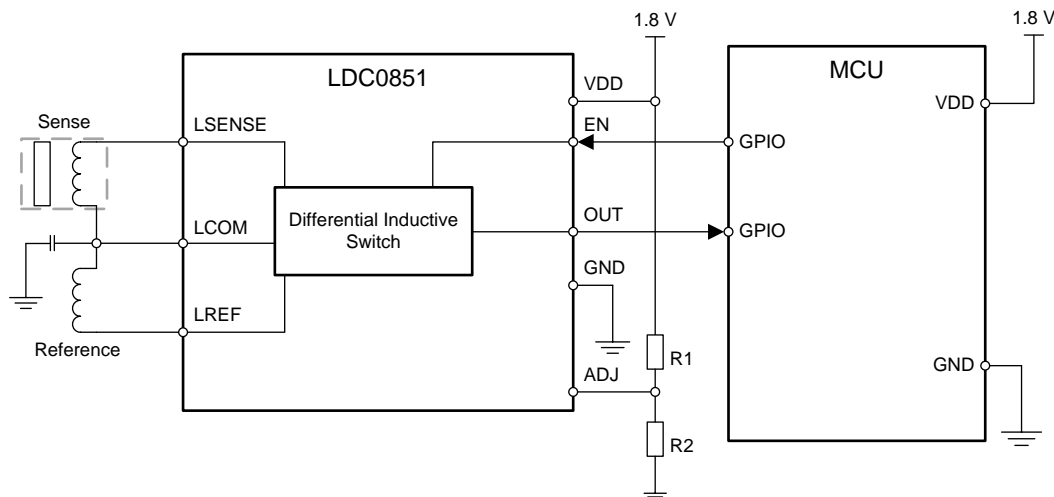


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4 Revision History

DATE	REVISION	NOTES
December 2015	*	Product Preview

PRODUCT PREVIEW

5 Device and Documentation Support

5.1 Community Resources

The following links connect to TI community resources. Linked contents are provided "AS IS" by the respective contributors. They do not constitute TI specifications and do not necessarily reflect TI's views; see TI's [Terms of Use](#).

TI E2E™ Online Community *TI's Engineer-to-Engineer (E2E) Community*. Created to foster collaboration among engineers. At e2e.ti.com, you can ask questions, share knowledge, explore ideas and help solve problems with fellow engineers.

Design Support *TI's Design Support* Quickly find helpful E2E forums along with design support tools and contact information for technical support.

5.2 Trademarks

E2E is a trademark of Texas Instruments.

5.3 Electrostatic Discharge Caution



These devices have limited built-in ESD protection. The leads should be shorted together or the device placed in conductive foam during storage or handling to prevent electrostatic damage to the MOS gates.

5.4 Glossary

[SLYZ022](#) — *TI Glossary*.

This glossary lists and explains terms, acronyms, and definitions.

6 Mechanical, Packaging, and Orderable Information

The following pages include mechanical, packaging, and orderable information. This information is the most current data available for the designated devices. This data is subject to change without notice and revision of this document. For browser-based versions of this data sheet, refer to the left-hand navigation.

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
LDC0851HDSGR	PREVIEW	WSON	DSG	8	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	-40 to 125	0851	
LDC0851HDSGT	PREVIEW	WSON	DSG	8	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	-40 to 125	0851	

(1) The marketing status values are defined as follows:

ACTIVE: Product device recommended for new designs.

LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.

NRND: Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.

PREVIEW: Device has been announced but is not in production. Samples may or may not be available.

OBsolete: TI has discontinued the production of the device.

(2) Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS), Pb-Free (RoHS Exempt), or Green (RoHS & no Sb/Br) - please check <http://www.ti.com/productcontent> for the latest availability information and additional product content details.

TBD: The Pb-Free/Green conversion plan has not been defined.

Pb-Free (RoHS): TI's terms "Lead-Free" or "Pb-Free" mean semiconductor products that are compatible with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI Pb-Free products are suitable for use in specified lead-free processes.

Pb-Free (RoHS Exempt): This component has a RoHS exemption for either 1) lead-based flip-chip solder bumps used between the die and package, or 2) lead-based die adhesive used between the die and leadframe. The component is otherwise considered Pb-Free (RoHS compatible) as defined above.

Green (RoHS & no Sb/Br): TI defines "Green" to mean Pb-Free (RoHS compatible), and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material)

(3) MSL, Peak Temp. - The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

(4) There may be additional marking, which relates to the logo, the lot trace code information, or the environmental category on the device.

(5) Multiple Device Markings will be inside parentheses. Only one Device Marking contained in parentheses and separated by a "~" will appear on a device. If a line is indented then it is a continuation of the previous line and the two combined represent the entire Device Marking for that device.

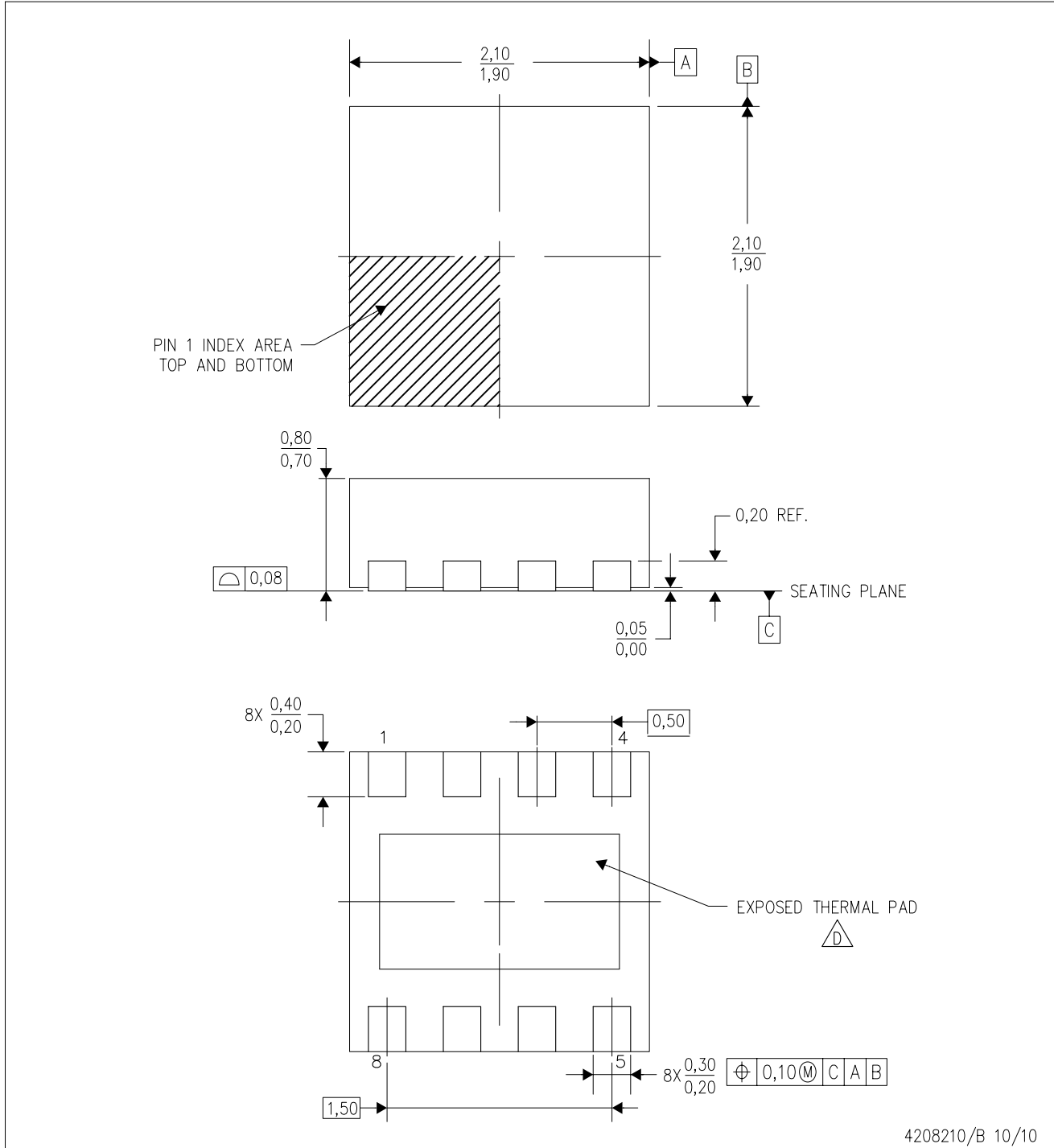
(6) Lead/Ball Finish - Orderable Devices may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead/Ball Finish values may wrap to two lines if the finish value exceeds the maximum column width.

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DSG (S-PWSON-N8)

PLASTIC SMALL OUTLINE NO-LEAD



4208210/B 10/10

- NOTES:
- A. All linear dimensions are in millimeters. Dimensioning and tolerancing per ASME Y14.5M-1994.
 - B. This drawing is subject to change without notice.
 - C. Quad Flatpack, No-Leads (QFN) package configuration.
 -  The package thermal pad must be soldered to the board for thermal and mechanical performance. See the Product Data Sheet for details regarding the exposed thermal pad dimensions.
 - E. Falls within JEDEC MO-229.

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