



UHS351

Preliminary

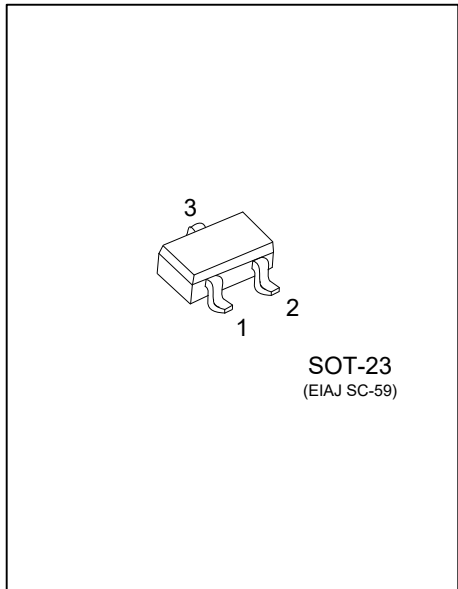
LINEAR INTEGRATED CIRCUIT

OMNIPOLAR HALL-EFFECT DIGITAL POSITION SENSOR

DESCRIPTION

The UTC **UHS351** sensor is small, multipurpose digital Hall-effect device which is operated by the magnetic field from a permanent magnet or an electromagnet. It is designed to respond to either a North pole or a South pole.

This omnipolar sensor designed to meet a extensive range of possible applications is flexible and sensitive device. The UTC **UHS351** has a typical operating point of 85 G at 25 °C. Because of being operated by a North pole or a South pole, They do not require the magnet polarity to be identified, which makes the installation easier and potentially reduces the system cost.



FEATURES

- * Simple activation from a North pole or a South pole and sensitive magnetics makes this omnipolar product suitable in all kinds of lid closure detection, potential motion control, and displacement sensing applications
- * Built-in reverse polarity protection prevents the device from potential damage during installation
- * Low voltage 3V ability helps reduce power consumption
- * Thermally balanced integrated circuit provides for stable operation over a wide temperature range of -40° ~ 150 °C

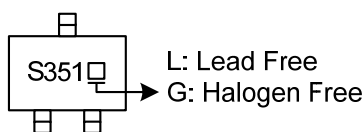
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UHS351L-AE3-R	UHS351G-AE3-R	SOT-23	I	O	G	Tape Reel

Note: Pin Assignment: I: V_{DD} O: Output G: GND

<p>UHS351G-AE3-R</p> <p>(1)Packing Type (2)Package Type (3)Green Package</p>	<p>(1) R: Tape Reel (2) AE3: SOT-23 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
--	---

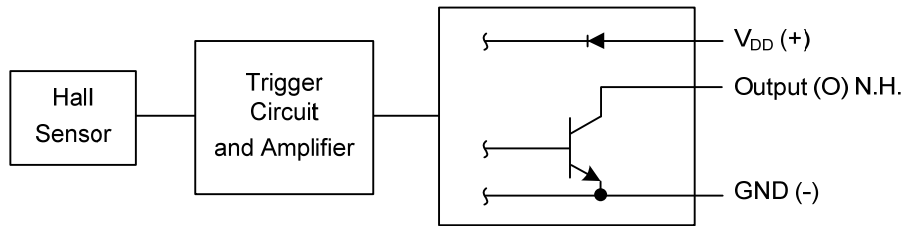
MARKING



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	V _{DD}	Supply voltage
2	Output	Output voltage
3	GND	Ground

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{DD}	-28 ~ 28	V
Applied Output Voltage	V_{OUT}	-0.5 ~ 28	V
Output Current	I_{OUT}	20	mA
Magnetic Flux		No limit	gauss
Operating temperature	T_{OPR}	-40 ~ +150	°C
Storage temperature	T_{STG}	-40 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS ($V_{DD}=3.0V$ to 24V, 20mA load, $T_A=-40^{\circ}C\sim 150^{\circ}C$)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
Supply Voltage	V_{DD}	-40°C~125°C	3		24	V	
		150°C	3		12	V	
Supply Current	I_S	$V_{DD}=5V$ at 25°C		3.5	6	mA	
		$V_{DD}=3V$ at 25°C		3	5	mA	
					9	mA	
Output Current	I_{OUT}				20	mA	
VSAT	V_{SAT}	at 20mA, gauss>Bop positive or gauss<Bop negative			0.4	V	
Output Leakage Current	I_{LEAK}	gauss<Bop- or>Bop+			10	μA	
Output Switching Time	Rise	t_r	$V_{DD}=12V$ at 25°C			1.5	μS
	Fall						

■ MAGNETIC SPECIFICATIONS ($V_{DD}=3.0V$ to 24V, $T_A=25^{\circ}C$)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Operate Positive	B_{OP+}		35	85	135	G
Operate Negative	B_{OP-}		-135	-85	-35	G
Release Positive	B_{RP+}		10	50	120	G
Release Negative	B_{RP-}		-120	-50	-10	G
Differential			5	35	80	G

■ PACKAGE INFORMATION

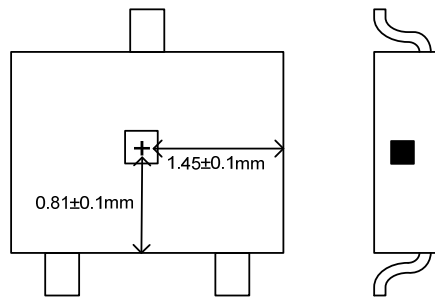


Fig. 1 Sensor Locations

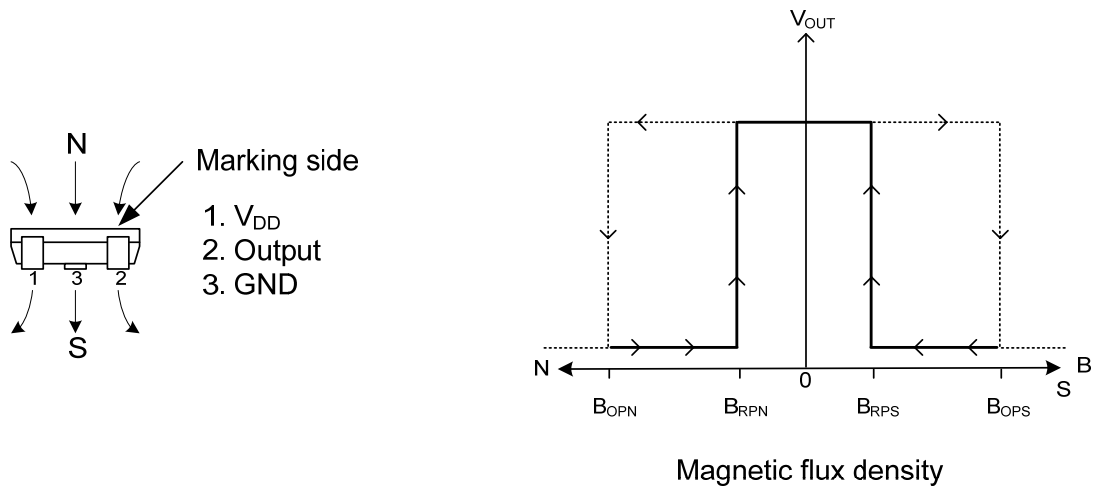
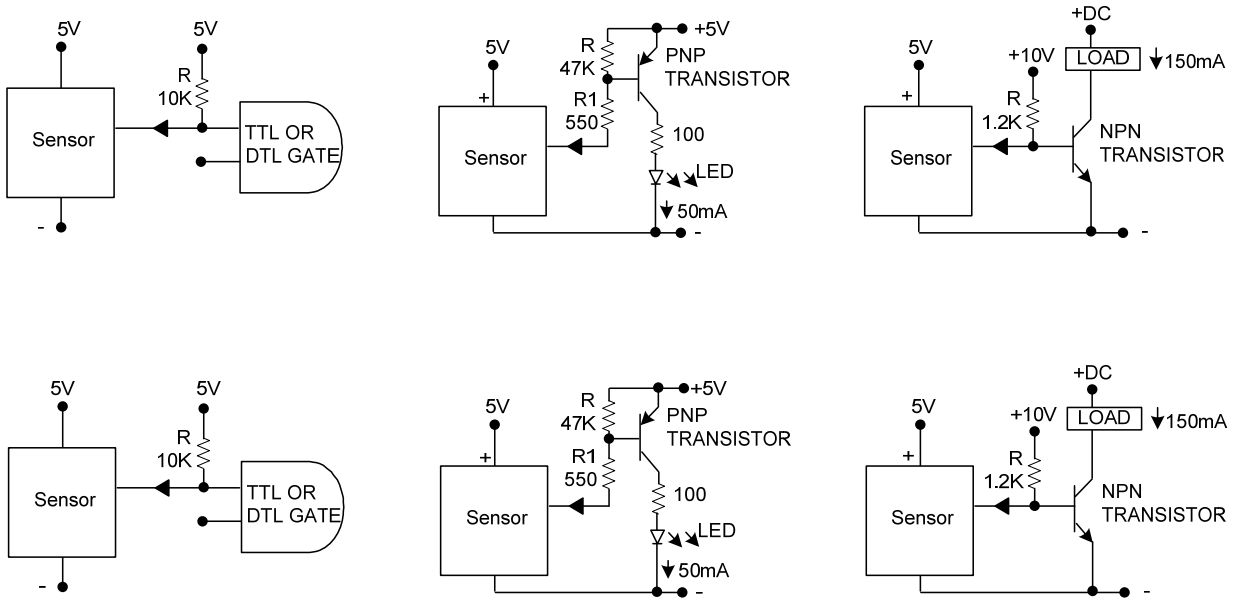


Fig. 2 Applying Direction of Magnetic Flux

■ TYPICAL APPLICATION CIRCUIT



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.