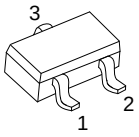
LOW POWER HALL EFFECT SWITCH



SOT-23
(EIAJ SC-59)

■ DESCRIPTION

UH8100 is a low-power integrated Hall switch designed to sense the applied magnetic flux density and give a digital output, which indicates the present condition of the magnitude sensed.

It mainly designed for battery-powered system and hand-held equipment, such as cellular flip-phones and PDA's, in which power consumption is one major concern. The typical power consumption of **UH8100** is down to 15uW at 2.75V supply.

For **UH8100**, the output will be high when no magnetic field is applied and be low when the applied magnetic flux density is stronger than the switching threshold. The difference between **UH8100A** and **UH8100B** is that **UH8100A** consumes less power than **UH8100B** in the Hall sensor operation.

■ FEATURES

* Micro power Operation
* 2.5V to 5.5V Battery Operation
* Offset Canceling Technology
* Superior Temperature Stability
* Extremely Low Switch-Point Drift
* Insensitive to Physical Stress

■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UH8100AL-AE3-R	UH8100AG-AE3-R	SOT-23	I	O	G	Tape Reel
UH8100BL-AE3-R	UH8100BG-AE3-R	SOT-23	I	O	G	Tape Reel

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

UH8100X G-AE3-R

(1) Packing Type	(1) R: Tape Reel
(2) Package Type	(2) AE3: SOT-23
(3) Green Package	(3) G: Halogen Free and Lead Free, L: Lead Free
(4) Average Supply Current	(4) refer to Electrical Characteristics

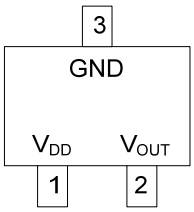
■ MARKING

UH8100A	UH8100B
U0A□ L: Lead Free G: Halogen Free	U0B□ L: Lead Free G: Halogen Free

FLYING 汎翊國際有限公司 www.flying1688.com

Copyright © 2015 Unisonic Technologies Co., Ltd

■ PIN CONFIGURATIONS

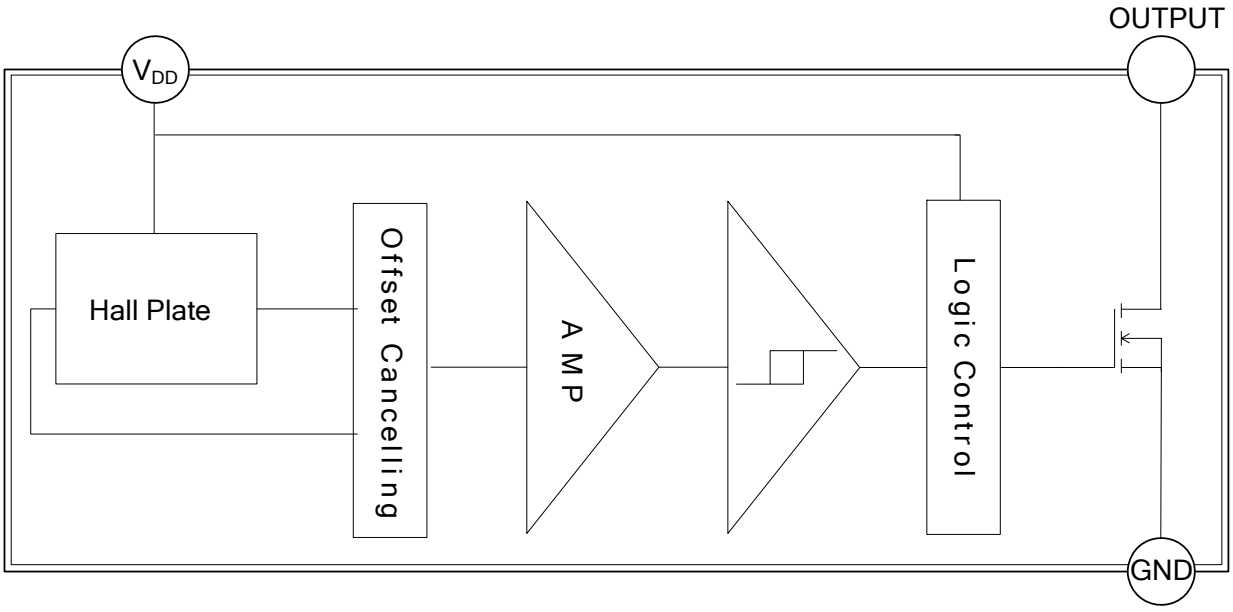


■ PIN DESCRIPTION

PIN NO.	PIN NAME	PIN TYPE	PIN DESCRIPTION
1	V_{DD}	P	Power Supply
2	V_{OUT}	O	Digital Output
3	GND	G	Ground

Note: O=Output, P=Power Supply, G=Ground

■ BLOCK DIAGRAM



FLYING 汎翊國際有限公司 www.flying1688.com

■ ABSOLUTE MAXIMUM RATING (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Magnetic Flux Density	B	Unlimited	mT
Supply Voltage	V_{DD}	7	V
Output Current	I_O	10	mA
Package Power Dissipation	P_D	230	mW
Junction Temperature	T_J	+150	°C
Operation Temperature	T_{OPR}	-40 ~ +85	°C
Storage Temperature	T_{STG}	-65 ~ +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.

■ RECOMMENDED OPERATING CONDITIONS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V_{DD}	Operating	2.5		5.5	V

■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

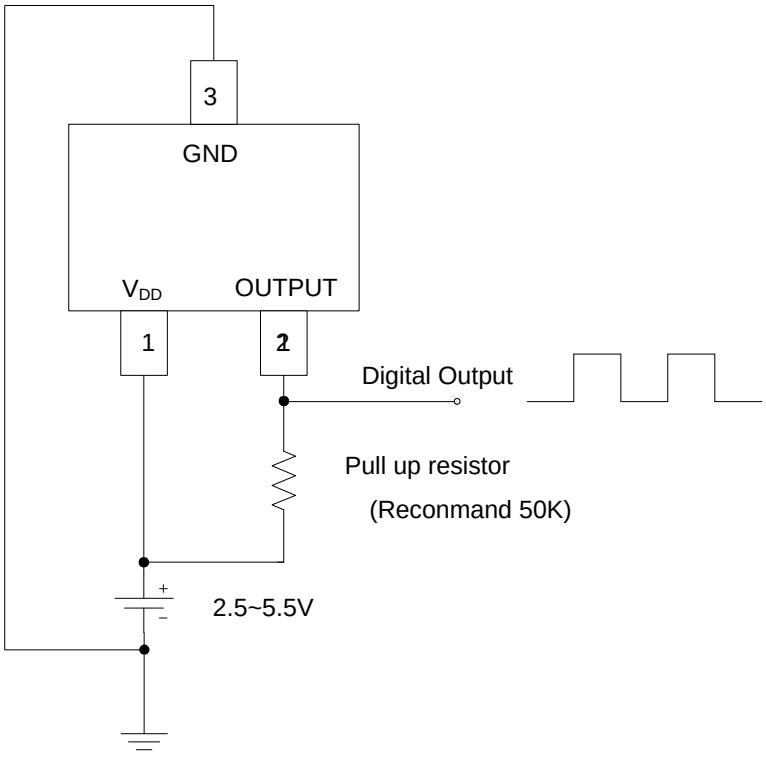
PARAMETER	SYMBOL	CONDITIONS		MIN	TYP	MAX	UNIT
Output On Voltage	V_{OUT}	V_{DD}=3V, I_{OUT}=1mA			0.1	0.3	V
Output Leakage Current	I_{OFF}	V_{DD}=3V, V_{OUT}=5.5V, B<B_{RP}			0.01	1	uA
Supply Current	$I_{DD(AVG)}$	V_{DD}=3V, average supply current	UH8100A		5	10	uA
			UH8100B		280	500	uA
Awake Time	T_{AWAKE}	V_{DD}=3V			50	100	us
Period	T_{PERIOD}	V_{DD}=3V,UH8100A			50	100	ms
		V_{DD}=3V,UH8100B			200	400	us
Duty Cycle	D.C.	V_{DD}=3V,UH8100A			0.1		%
		V_{DD}=3V,UH8100B			25		%

■ MAGNETIC CHARACTERISTICS (T_A=25°C, V_{DD}=3V, unless otherwise specified)

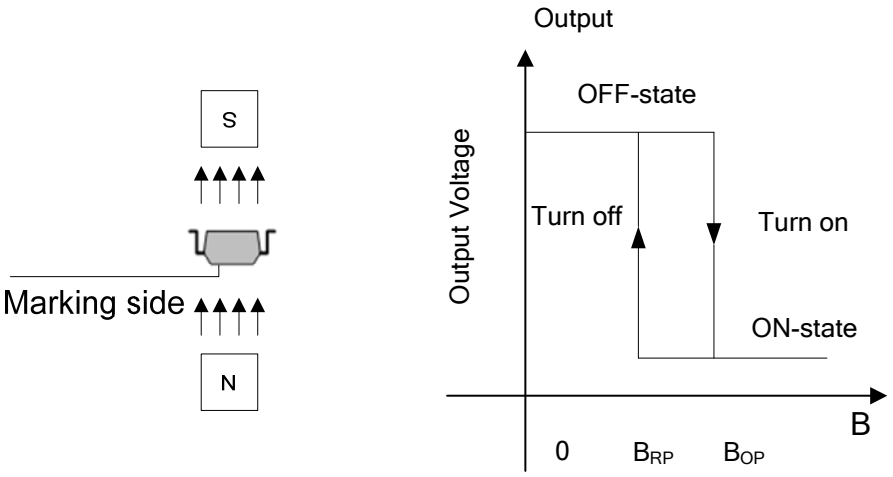
PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Operation Points	$\|B_{OP}\|$		40	60	Gauss
Release Points	$\|B_{RP}\|$	10	30		
Hysteresis	$\|B_{OP}–B_{RP}\|$		10		

FLYING 汎翊國際有限公司 www.flying1688.com

■ TYPICAL APPLICATION CIRCUIT



■ MAGNETIC FLUX



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.