



UH81062

Advance

CMOS IC

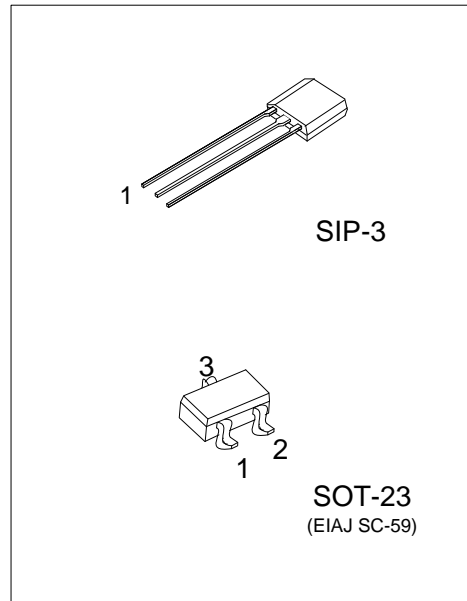
CMOS, OMNI-POLAR, LOW POWER HALL SENSOR

DESCRIPTION

UH81062 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.

There are three output types (Internal 100K pull-up resistor, NMOS open-drain and CMOS push-pull) and two ranks of magnetic characters for user to choose.



FEATURES

- *Omni-polar magnetic type
- *2.2V to 5.5V battery operation
- *Offset Canceling Technology
- *Independent of North or South Pole Magnet,
- *Superior temperature stability
- *Extremely Low Switch-Point Drift

APPLICATIONS

- *Micro Switch
- *Handheld Wireless Application Wake Up Switch
- *Clamp Shell Type Application Switch
- *Magnet Switch in Low Duty Cycle Applications

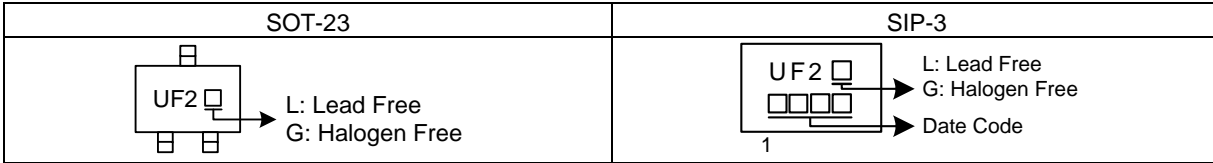
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UH81062XL-AE3-R	UH81062XG-AE3-R	SOT-23	I	O	G	Tape Reel
UH81062XL-G03-B	UH81062XG-G03-B	SIP-3	I	G	O	Tape Box
UH81062XL-G03-K	UH81062XG-G03-K	SIP-3	I	G	O	Bulk

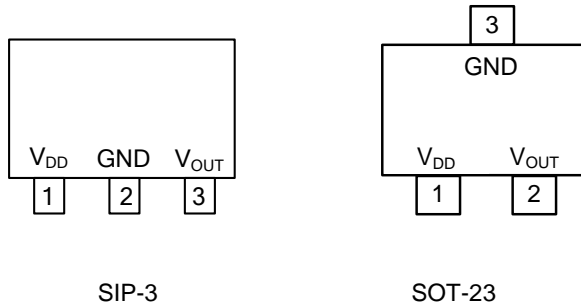
Note: Pin Assignment: I: V_{CC} O: V_{OUT} G: GND

<p>UH81062XG-AE3-R</p>	<p>(1) R: Tape Reel, B: Tape Box, K: Bulk</p> <p>(2) AE3: SOT-23, G03: SIP-3</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p> <p>(4) I: Internal, N: NMOS, C: CMOS</p>
------------------------	--

MARKING



PIN CONFIGURATION



PIN DESCRIPTION

PIN NAME	TYPE	DESCRIPTION
V _{DD}	P/I	Power Supply Input
V _{OUT}	O	Output
GND	P	Ground

Note: P: power supply, I: input, O: output

PRODUCT LIST

Internal pull-up resistor output

PRODUCT NAME	OUTPUT	V _{OUT} (When B > B _{OP})	B _{OP}
UH81062I-1	Internal pull-up resistor	LOW	1.3~2.3 mT
UH81062I-2	Internal pull-up resistor	LOW	1.0~4.0 mT

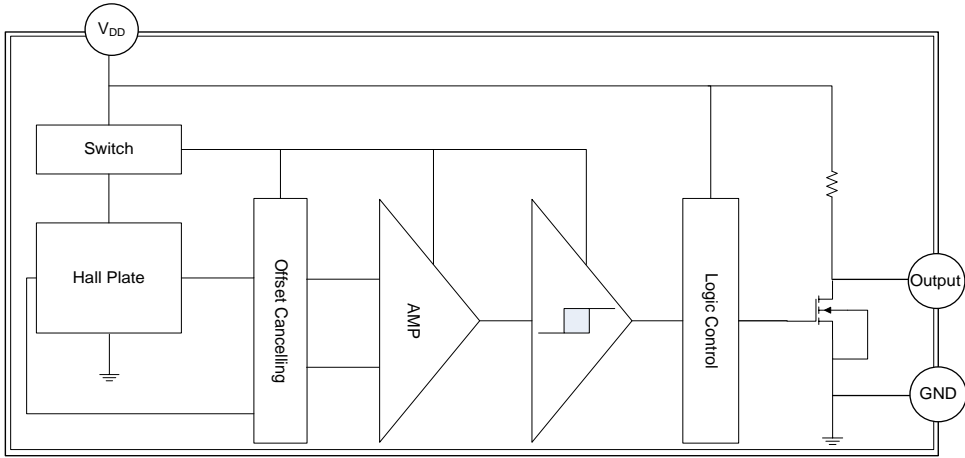
NMOS open-drain output

PRODUCT NAME	OUTPUT	V _{OUT} (When B > B _{OP})	B _{OP}
UH81062N-1	NMOS open-drain	LOW	1.3~2.3 mT
UH81062N-2	NMOS open-drain	LOW	1.0~4.0 mT

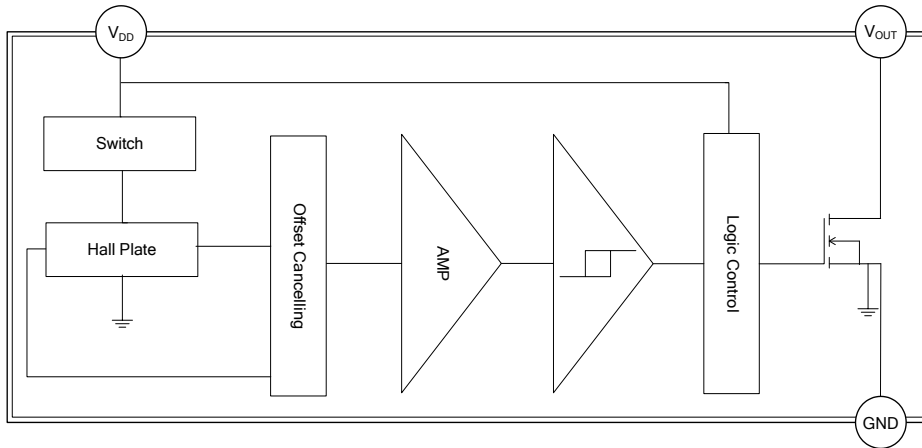
CMOS push-pull output

PRODUCT NAME	OUTPUT	V _{OUT} (When B > B _{OP})	B _{OP}
UH81062C-1	CMOS push-pull	LOW	1.3~2.3 mT
UH81062C-2	CMOS push-pull	LOW	1.0~4.0 mT

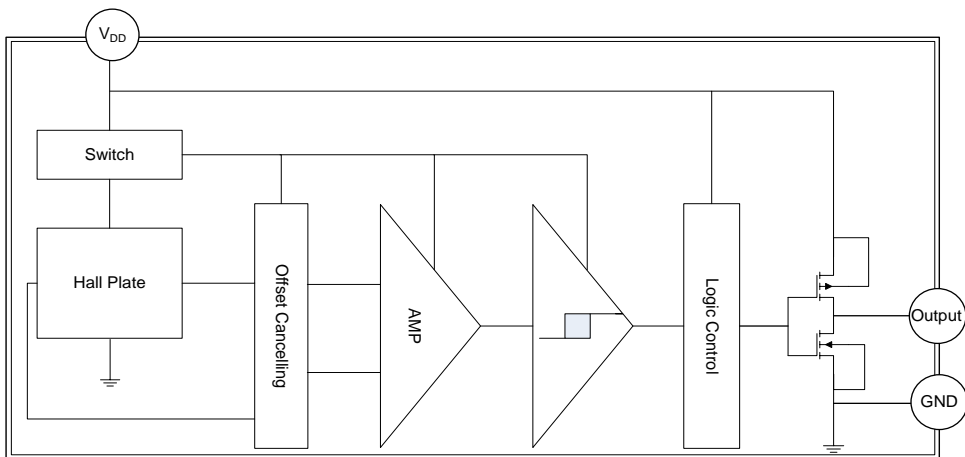
■ TYPICAL CIRCUIT



Internal pull-up resistor output



NMOS open-drain output



CMOS push-pull output

■ 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	1	mA
Power Dissipation	SIP-3	P _D	400	mW
	SOT-23		200	mW
Maximum Junction Temp		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	2.2		5.5	V
Ambient Temperature	T _A		-40		85	°C

■ ELECTRICAL CHARACTERISTICS

V_{DD}=2.2V to 5.5V, T_A=25°C, unless otherwise specified

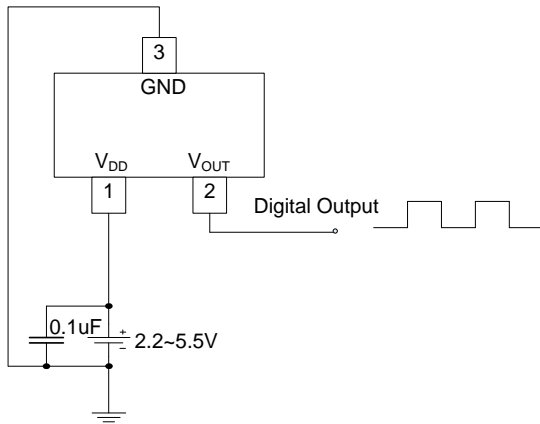
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage Range	V _{DD}	Operating	2.2		5.5	V
Supply Current	I _{DD}	Average (B < Brp , V _{DD} =3.0V) (UH81062N & UH81062C)		1.5	3.5	uA
		Average (B < Brp , V _{DD} =3.0V) (UH81062I)		32	60	uA
Output Leakage Current	I _{OFF}	V _{OUT} = 5V, only for UH81062N			0.1	uA
Output Low Voltage	V _{OL}	I _{SINK} = 1mA, B > Bop		0.02	0.4	V
Output High Voltage	V _{OH}	I _{SOURCE} = 1mA, B < Brp , only for UH81062C	V _{DD} -0.4			V
Wake up Time	t _{AWAKE}			50		uS
Period	t _{PERIOD}			70		mS
Duty cycle	d.c.			0.07		%

■ MAGNETIC CHARACTERISTICS

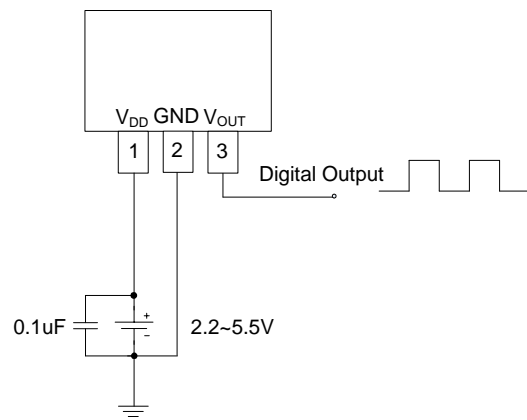
(V_{DD}=2.2V to 5.5V, 1mT=10Gauss, T_A=25°C, unless otherwise specified)

RANK	PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
1	Operation Points	B _{OP}	B > B _{OP}	13	18	23	Gauss
	Release Points	B _{RP}	B < B _{RP}	5	10	15	Gauss
	Hysteresis	B _{HYS}	B _{OPX} -B _{RPX}		8		Gauss
2	Operation Points	B _{OP}	B > B _{OP}		30	40	Gauss
	Release Points	B _{RP}	B < B _{RP}	5	20		Gauss
	Hysteresis	B _{HYS}	B _{OPX} -B _{RPX}		10		Gauss

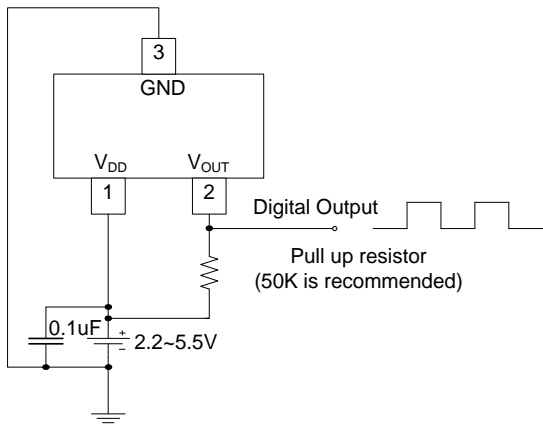
■ TYPICAL CIRCUIT



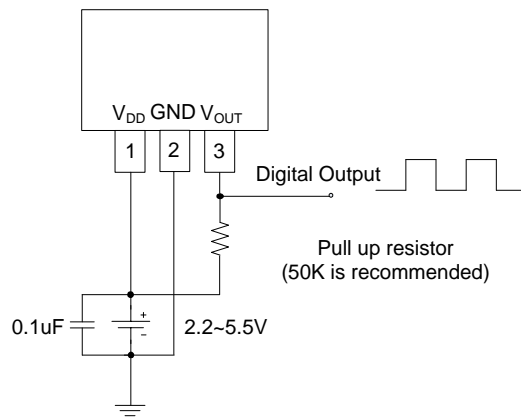
SOT-23 (Internal pull-up resistor output)



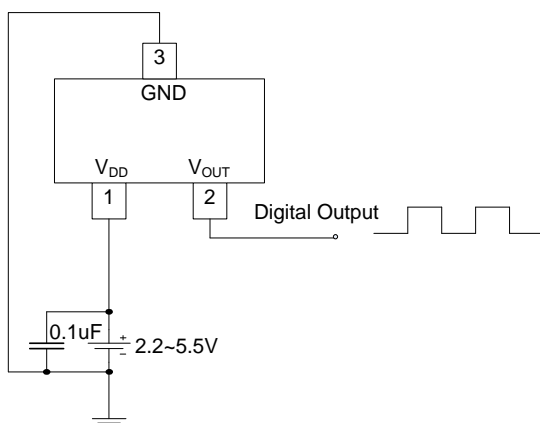
SIP-3 (Internal pull-up resistor output)



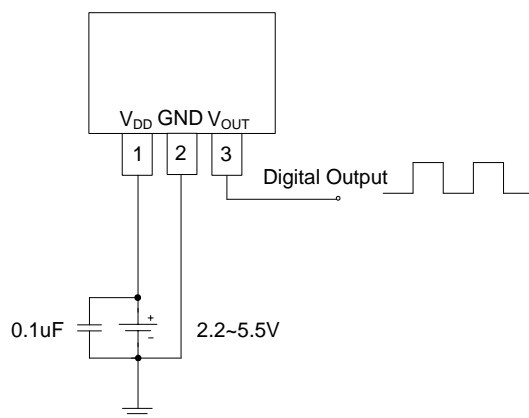
SOT-23 (NMOS open-drain output)



SIP-3 (NMOS open-drain output)

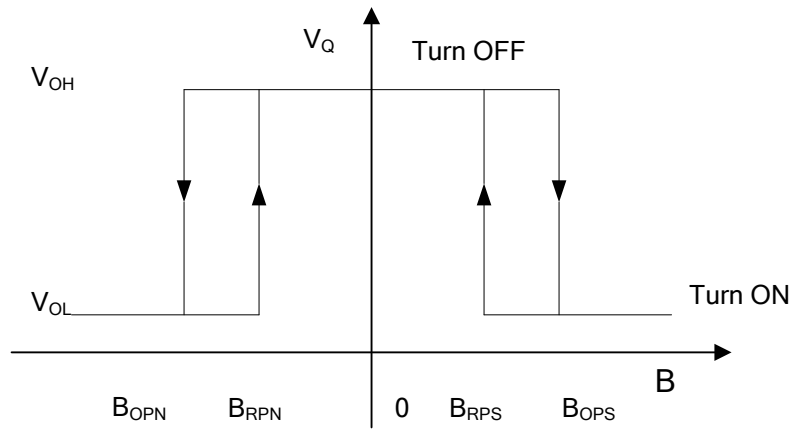


SOT-23 (CMOS push-pull output)



SIP-3 (CMOS push-pull output)

■ MAGNETIC FLUX



SOT-23 / SIP-3

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.