



UH8105

CMOS IC

HALL EFFECT MICRO SWITCH IC

DESCRIPTION

The **UH8105** is a low power, pole independent Hall-effect switch with a latched digital output driver. It can work in 2.5 volt supply. Either a north or south pole of sufficient flux will turn the output on; in the absence of a magnetic field, the output is off.

When a magnetic field enters the hall element and exceeds the operate point B_{OPS} (or less than B_{OPN}) the output turns on (output is low). When the magnetic field is below the release point B_{RPS} (or above B_{RPN}), the output turns off (output is high).

FEATURES

- *Micropower operation
- *2.5V to 5.0V battery operation
- *Offset Canceling Technology
- *Independent of North or South Pole Magnet,
- *Superior temperature stability
- *Extremely Low Switch-Point Drift

APPLICATIONS

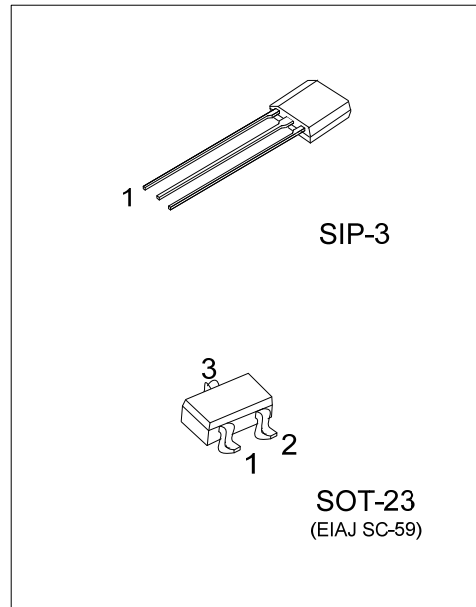
- *Micro Switch
- *Handheld Wireless Application Wake Up Switch
- *Clamp Shell Type Application Switch
- *Magnet Switch in Low Duty Cycle Applications

ORDERING INFORMATION

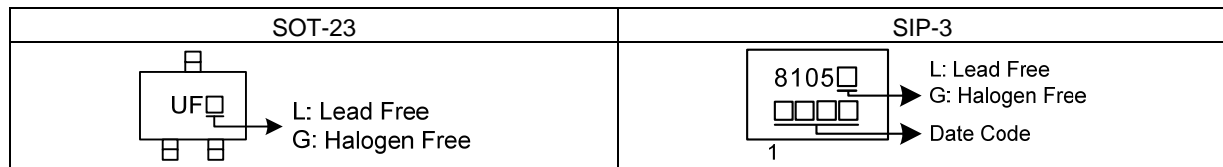
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UH8105L-AE3-R	UH8105G-AE3-R	SOT-23	I	O	G	Tape Reel
UH8105L-G03-B	UH8105G-G03-B	SIP-3	I	G	O	Tape Box
UH8105L-G03-K	UH8105G-G03-K	SIP-3	I	G	O	Bulk

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

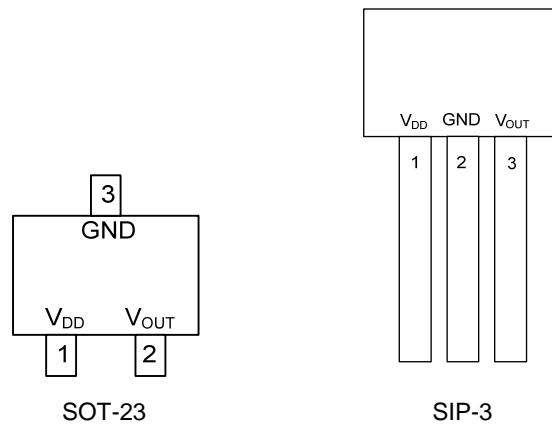
<p>UH8105G-AE3-R</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Green Package</p>	<p>(1) R: Tape Real, B: Tape Box, K: Bulk</p> <p>(2) AE3: SOT-23, G03: SIP-3</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING



PIN CONFIGURATIONS

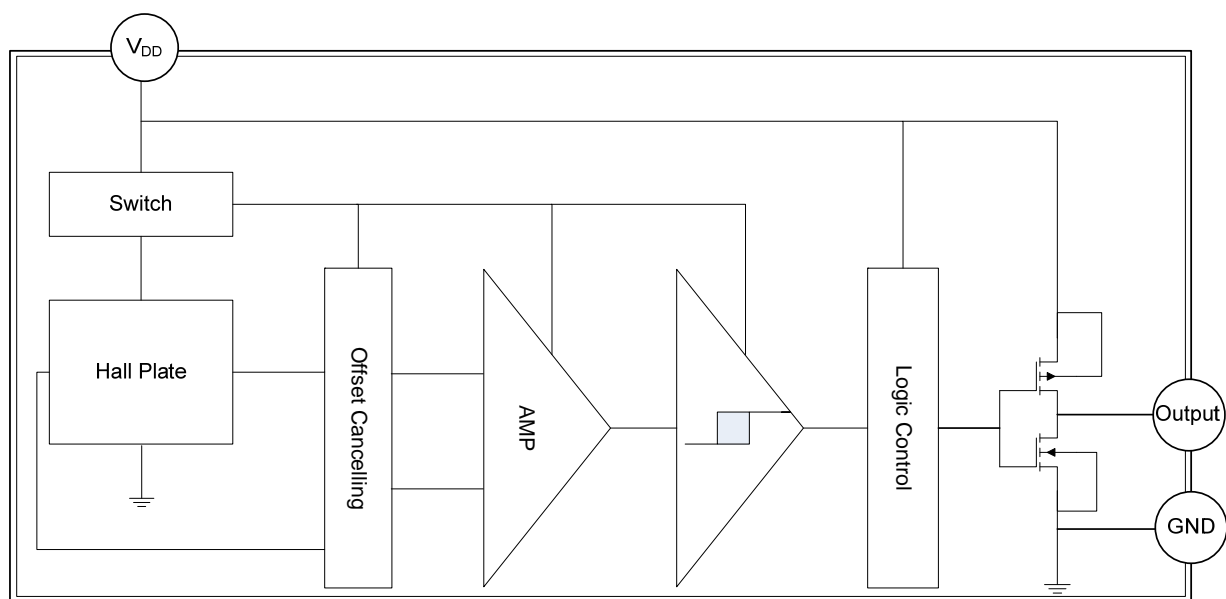


PIN DESCRIPTION

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

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

BLOCK DIAGRAM



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

PARAMETER	SYMBOL	RATINGS	UNIT
Magnetic Flux Density	B	Unlimited	mT
Supply Voltage	V _{DD}	5.5	V
Output Current	I _O	1	mA
Power Dissipation	SIP-3	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	2.5	-	5.5	V
Ambient Temperature	T _A		-40		85	°C

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

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage Range	V _{DD}	Operating	2.5		5.5	V
Supply Current	I _{DD}	Average		5	10	uA
		Awake		1.2	2	mA
		Sleep		2	8	uA
Output Leakage Current	I _{OFF}	V _{out} = 5.5V, B _{RPN} <B<B _{RPS}			1	uA
Output Low Voltage	V _{OL}	I _{SINK} = 1mA		20	40	mV
Output High Voltage	V _{OH}		V _{OUT} -0.4V			V
Wake up Time	t _{AWAKE}			60		uS
Period	t _{PERIOD}			60		mS
Duty cycle	d.c.			0.1		%

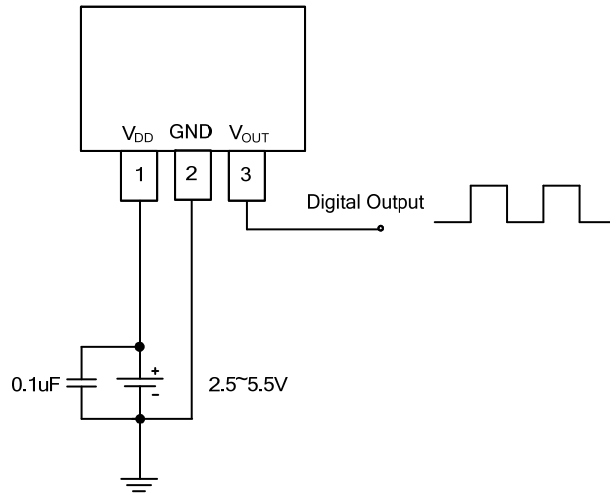
■ MAGNETIC CHARACTERISTICS (V_{DD}=3V, 1mT=10Gauss, T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Operation Points	B _{OPS}	15	30	45	Gauss
	B _{OPN}	-45	-30	-15	
Release Points	B _{RPS}	10	20	40	
	B _{RPN}	-40	-20	-10	
Hysteresis	B _{hys}		10		

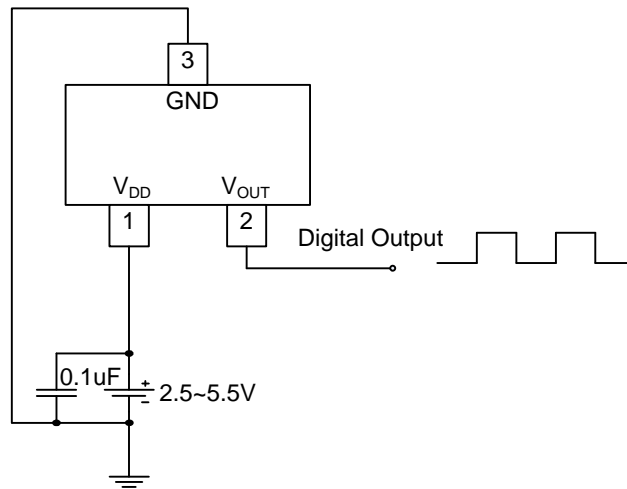
A grade

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Operation Points	B _{OPS}	15	25	35	Gauss
	B _{OPN}	-35	-25	-15	
Release Points	B _{RPS}	10	20	30	
	B _{RPN}	-30	-20	-10	
Hysteresis	B _{hys}		10		

■ TYPICAL CIRCUIT

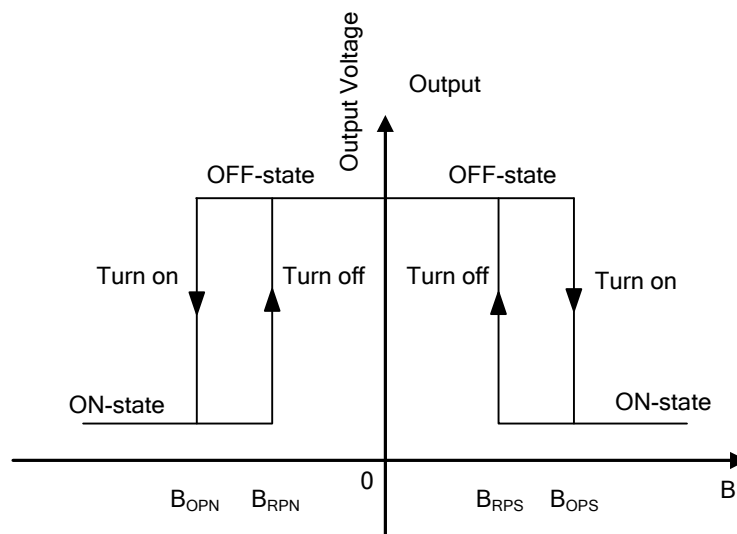


SIP-3



SOT-23

■ MAGNETIC FLUX



SOT-23 / SIP-3

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