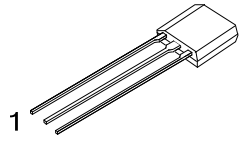
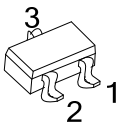
UH8104

CMOS IC

HALL EFFECT MICRO SWITCH IC



SIP-3



SOT-23
(EIAJ SC-59)

■ DESCRIPTION

The **UH8104** is a low power, pole independent Hall-effect switch with a latched digital output driver. It can work in 2.5V 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). It is designed with open drain configuration and connecting to a pull up resistor from Output to V_{DD} is necessary.

■ FEATURES

* Micro power operation
* 2.5V to 5.5V battery operation
* Offset Canceling Technology
* Independent of North or South Pole Magnet
* Superior temperature stability
* Extremely Low Switch-Point Drift

■ ORDERING INFORMATION

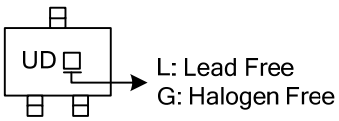
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UH8104L-AE3-R	UH8104G-AE3-R	SOT-23	O	I	G	Tape Reel
UH8104L-G03-B	UH8104G-G03-B	SIP-3	I	G	O	Tape Box
UH8104L-G03-K	UH8104G-G03-K	SIP-3	I	G	O	Bulk

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

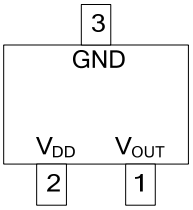
UH8104L-AE3-R
(1) Packing Type
(2) Package Type
(3) Halogen Free

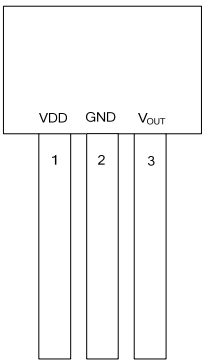
(1) R: Tape Reel, B: Tape Box, K: Bulk
(2) AE3: SOT-23, G03: SIP-3
(3) L: Lead Free, G: Halogen Free

■ MARKING



■ PIN CONFIGURATIONS



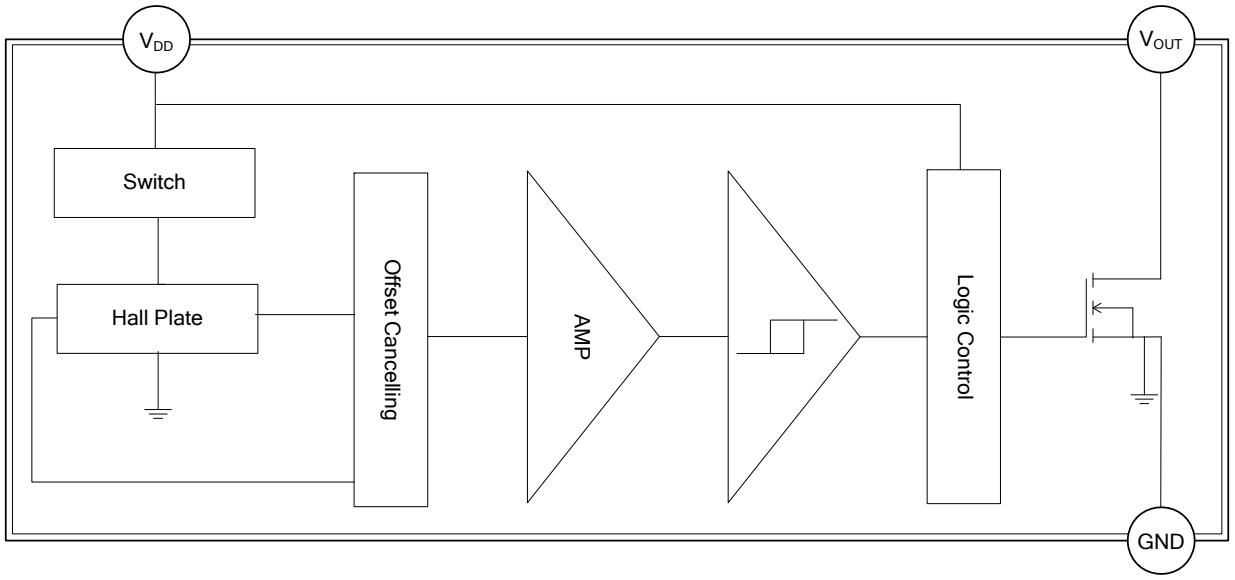


■ PIN DESCRIPTION

PIN NAME	PIN TYPE	PIN DESCRIPTION
V_{OUT}	O	Output Pin
V_{DD}	I	Power Supply
GND	G	Ground

Note: O: Output, I: Power Supply, G: Ground

■ 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}	7	V
Package Power Dissipation	P_D	230	mW
Junction Temperature	T_J	150	℃
Operation Temperature	T_{OPR}	-40 ~ +85	℃
Storage Temperature	T_{STG}	-65 ~ +150	℃

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)

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

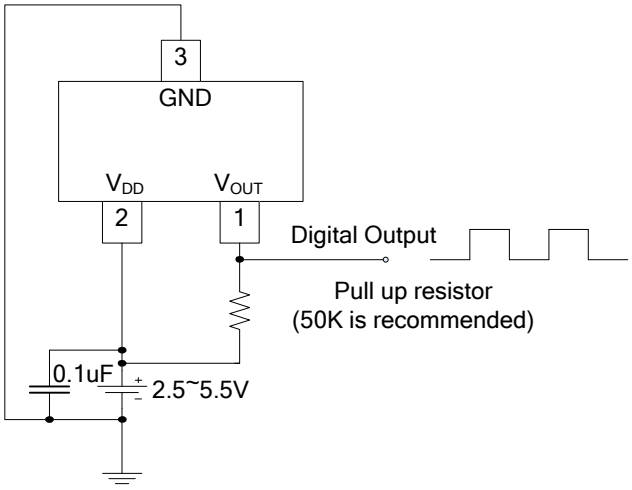
■ ELECTRICAL CHARACTERISTICS (T_A=25°C, V_{DD}=3V)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Output Low Voltage	V_{OL}	I_{SINK} = 1mA		20	40	mV
Output Leakage Current	I_{OFF}	V_{OUT} = 5.5V, B_{RPN}<B<B_{RPS}			1	uA
Supply Current	I_{DD}	Average		5	10	uA
		Awake		1.2	2	mA
		Sleep		2	8	uA
Awake Time	T_{AWAKE}			75	125	uS
Period	T_{PERIOD}			75	125	mS
Duty Cycle	D.C.			0.1		%

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

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Operation Points	B_{OPS}		40	60	Gauss
	B_{OPN}	-60	-40		
Release Points	B_{RPS}	10	30		
	B_{RPN}		-30	-10	
Hysteresis	$\|B_{OPX}–B_{RPX}\|$		10		

■ TYPICAL APPLICATION CIRCUIT



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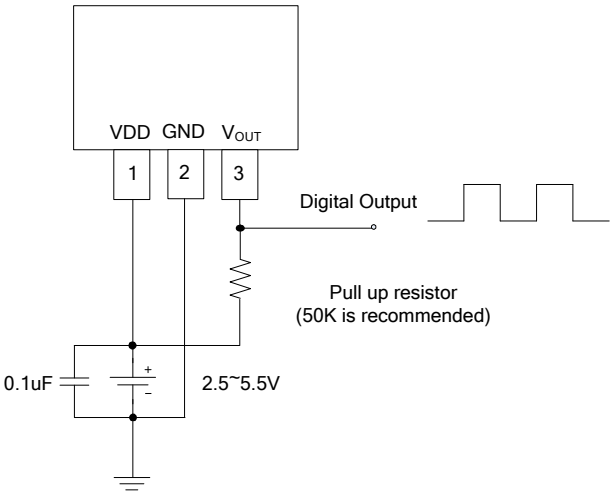
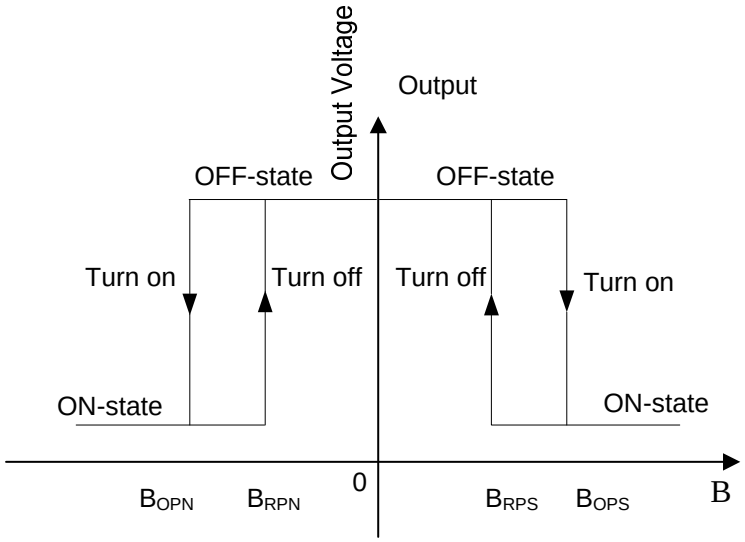


SIP-3

■ MAGNETIC FLUX



SOT-23 / SIP-3