



UH8104

CMOS IC

HALL EFFECT MICRO SWITCH IC

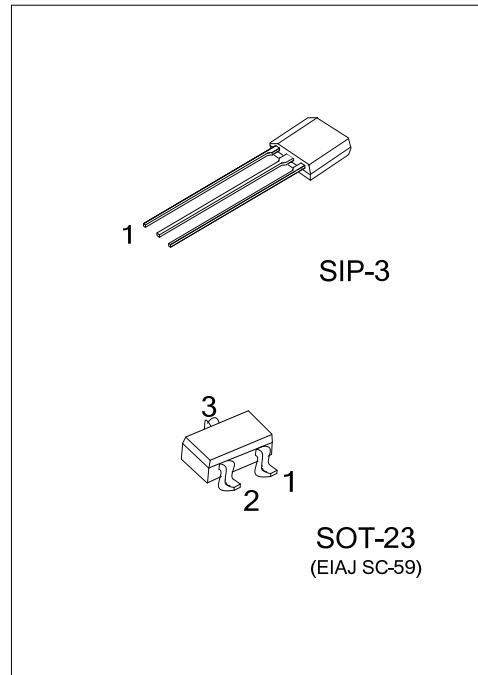
DESCRIPTION

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



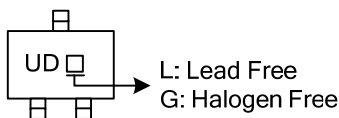
ORDERING INFORMATION

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

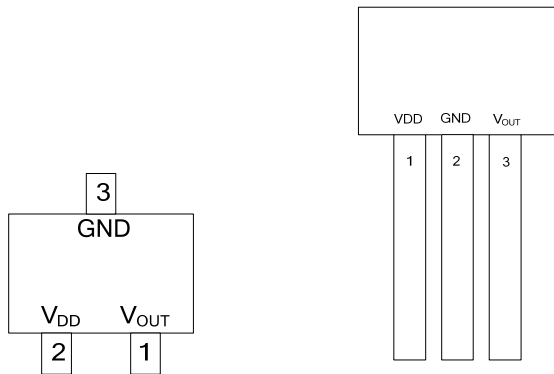
Note: Pin Assignment : O: V_{OUT} , I: V_{DD} , G: GND

<p>UH8104L-AE3-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Halogen Free</p>	<p>(1) R: Tape Reel, B: Tape Box, K: Bulk</p> <p>(2) AE3: SOT-23, G03: SIP-3</p> <p>(3) L: Lead Free, G: Halogen Free</p>
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MARKING



■ PIN CONFIGURATIONS

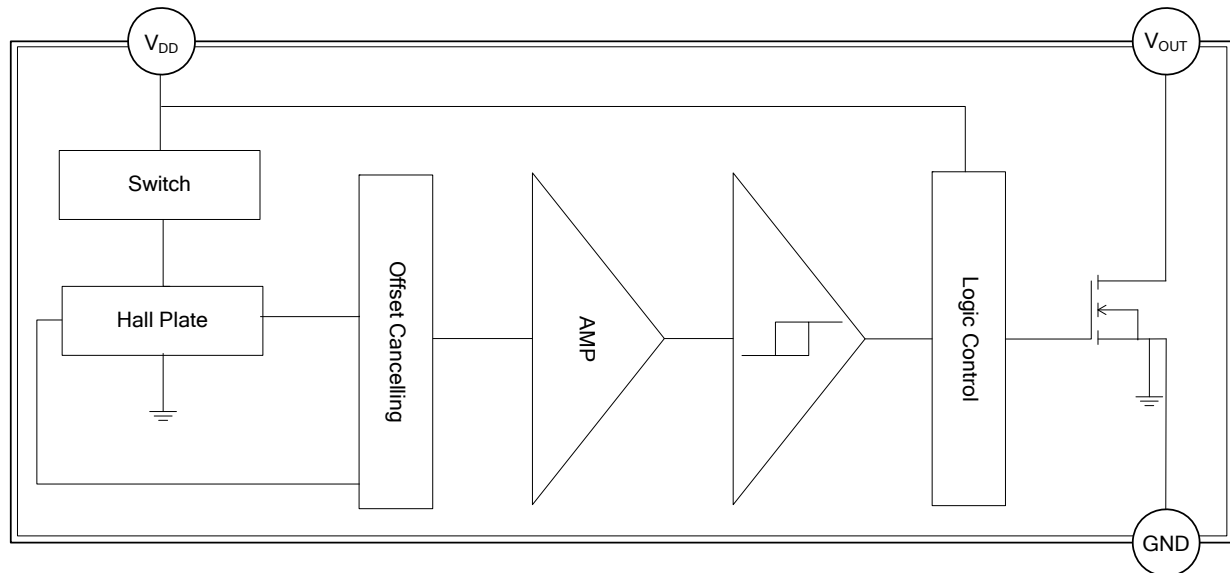


■ PIN DESCRIPTION

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 ($T_A=25^{\circ}\text{C}$, 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	$^{\circ}\text{C}$
Operation Temperature	T_{OPR}	-40 ~ +85	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-65 ~ +150	$^{\circ}\text{C}$

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 ($T_A=25^{\circ}\text{C}$)

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

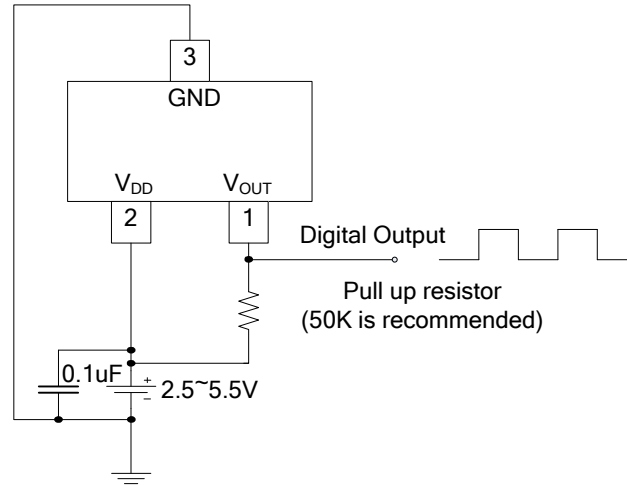
■ ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$, $V_{DD}=3\text{V}$)

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

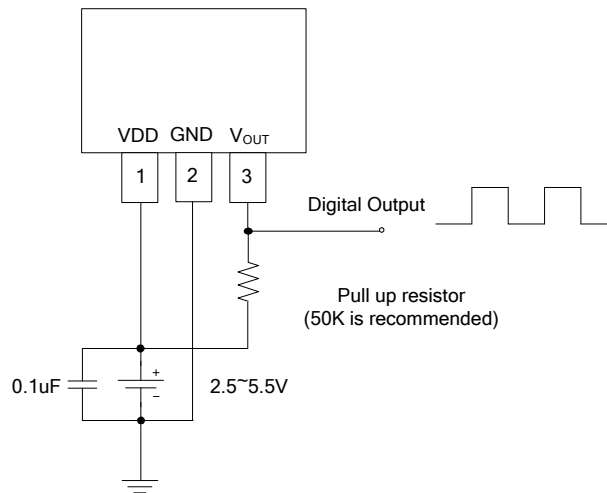
■ MAGNETIC CHARACTERISTICS ($T_A=25^{\circ}\text{C}$, $V_{DD}=3\text{V}$, $1\text{mT}=10\text{Gauss}$)

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

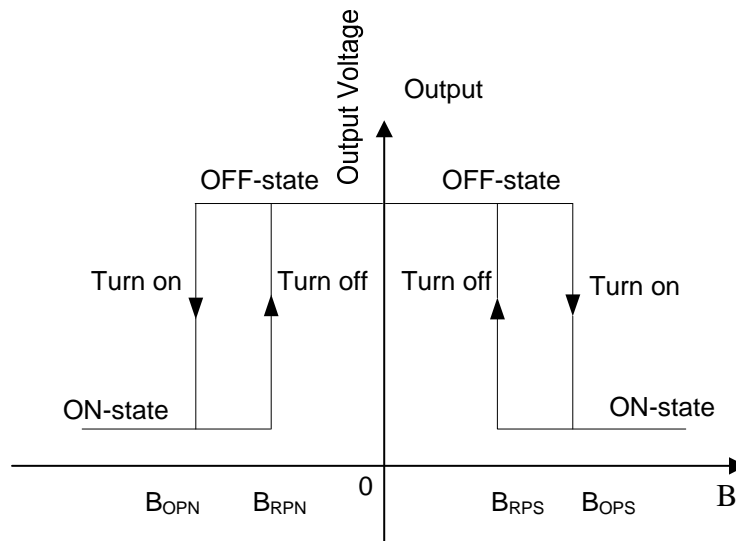


SOT-23



SIP-3

■ MAGNETIC FLUX



SOT-23 / SIP-3

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