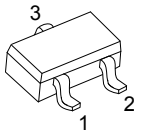
HALL EFFECT MICRO SWITCH IC



SOT-23
(EIAJ SC-59)

■ DESCRIPTION

The UH8103 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} , the output turns off (output is high). It is designed with open drain configuration and connecting a pull up resistor from Output to V_{DD} is necessary.

■ FEATURES

*Micropower 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

■ APPLICATIONS

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

■ ORDERING INFORMATION

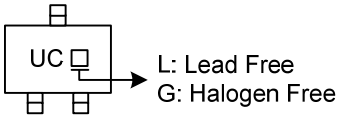
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UH8103L-AE3-R	UH8103G-AE3-R	SOT-23	I	O	G	Tape Reel

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

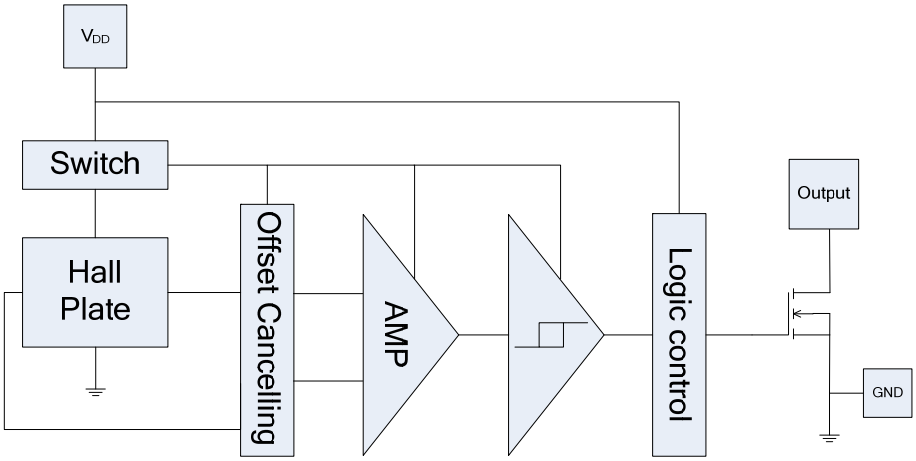
UH8103G-AE3-R
(1) Packing Type
(2) Package Type
(3) Green Package

(1) R: Tape Reel
(2) AE3: SOT-23
(3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



■ BLOCK DIAGRAM



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

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{DD}	7	V
Magnetic Flux Density	B	Unlimited	
Output current	I_{OUT}	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

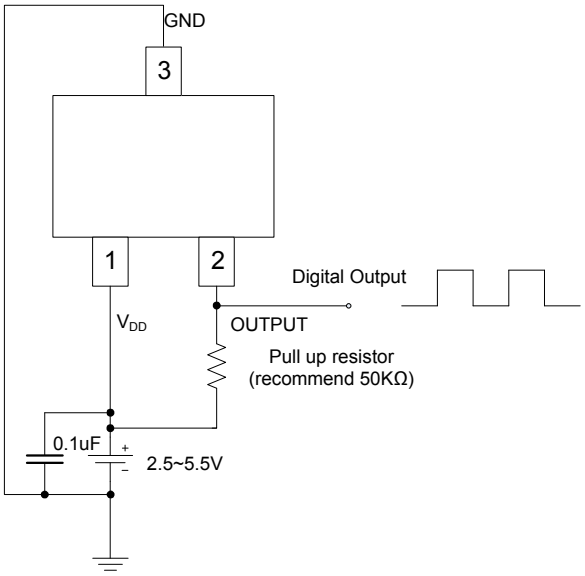
■ ELECTRICAL CHARACTERISTICS (V_{DD}=3V, T_A=25°C, unless otherwise specified)

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	μA
		Awake		1.2	2	mA
		Sleep		2	8	μA
Output Leakage Current	I_{OFF}	V_{OUT} = 3.5V, $B_{RPN}<B<B_{RPS}$			1	μA
Output Low Voltage	V_{OL}	I_{SINK} = 1mA		20	40	mV
Wake up Time	t_{awake}			180		μS
Period	t_{period}			60		mS
Duty cycle	d.c.			0.3		%

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

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Operation Points	B_{OPS}		50	75	Gauss
	B_{OPN}	-75	-50		
Release Points	B_{RPS}	10	35		
	B_{RPN}		-35	-10	
Hysteresis	B_{hys}		15		

■ TYPICAL CIRCUIT



■ MAGNETIC FLUX