DESCRIPTION

AH8102 is with two Hall effect plates and a CMOS output driver, mainly designed for battery–powered, hand-held equipment (such as Cellular and Cordless Phone, PDA). E.g. as an On/Off switch in Cellular Flip-Phones, with battery operating voltages of 2.4V-5.5V.

Either north or south pole of sufficient strength will turn the output on. The output will be turned off under no magnetic field. While the magnetic flux density (B) is larger than operate point (Bop), the output will be turned on (low), the output is held until B is lower than release point (Brp) ,then turned off.

The AH8102 is available in SOT-553 package.

ORDERING INFORMATION

Package Type	Part Number	
SOT-553	CX	AH8102CXR
		AH8102CXVR
Note	V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products Suffix " V" means Halogen free Package		

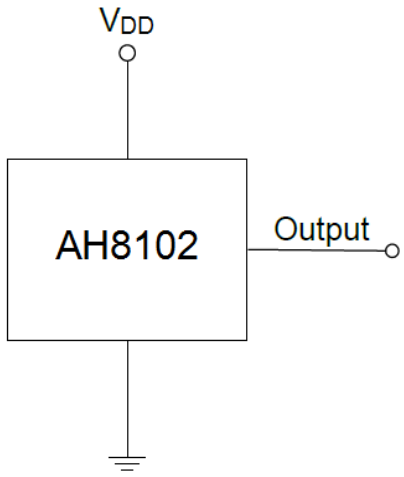
FEATURES

- Micropower operation
- Operation with North or South Pole
- 2.4V to 5.5V battery operation
- Chopper stabilized
- Superior temperature stability
- Extremely Low Switch-Point Drift
- Insensitive to Physical Stress
- Good RF noise immunity
- ESD > 4KV in human body mode
- Lead Free Finish
- Available in SOT-553 Package

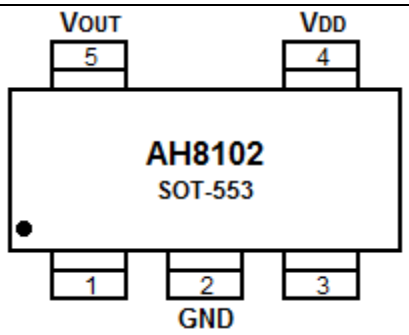
APPLICATION

- Cover switch in clam-shell cellular phones
- Cover switch in Notebook PC/PDA
- Contact-less switch in consumer products

TYPICAL APPLICATION



PIN DESCRIPTION



Top View

Pin #	Symbol	Function
1	N.C.	No Connection
2	GND	Ground Pin
3	N.C.	No Connection
4	V_{DD}	Input Voltage Pin
5	V_{OUT}	Output Voltage Pin

ABSOLUTE MAXIMUM RATINGS

V_{DD}, Supply voltage	-0.3V ~ 6.0V
I_S, Operating current	-1 to 5.0mA
V_Q, Output voltage	-0.3V ~ 6.0V
I_Q, Output current	-1 ~ 2.0mA
T_S, Storage temperature range	-40°C ~ +150°C
T_J ,Maximum junction temperature	150°C
ESD Protection	4000V

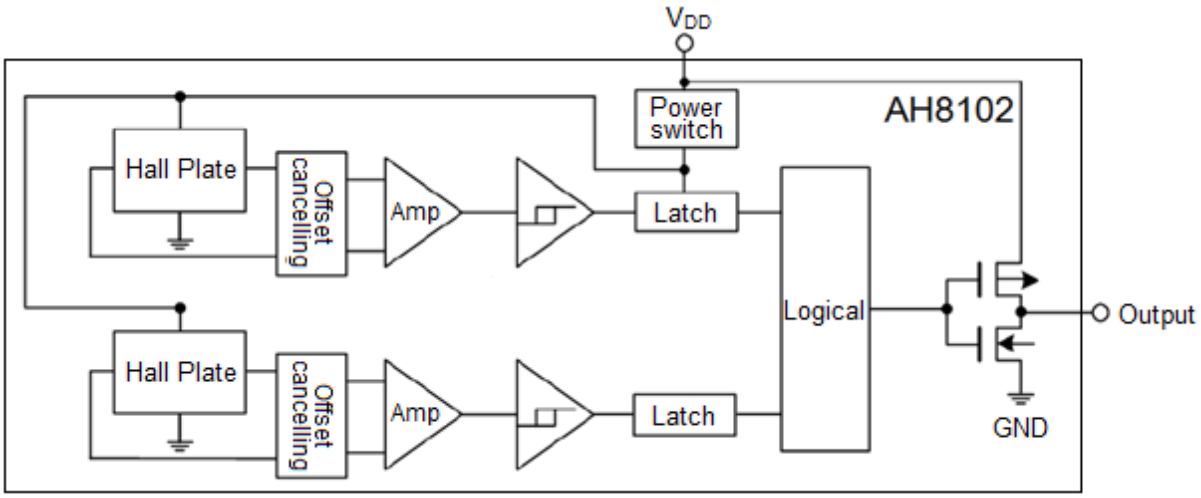
Stress beyond above listed “Absolute Maximum Ratings” may lead permanent damage to the device. These are stress ratings only and operations of the device at these or any other conditions beyond those indicated in the operational sections of the specifications are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ELECTRICAL CHARACTERISTICS

AC/DC Characteristics ,T_A=+25℃,V_{DD}=3.0V,Unless otherwise specified

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Supply voltage	V_{DD}		2.4		6.0	V
Averaged supply current	I_{SAVG}		1	4	10	uA
Averaged current during operating time	I_{SOPAVG}		0.5	2.0	3.5	mA
Peak current during operating time	I_{SOPT}				4.5	mA
Supply current in standby time	I_{SSTB}		1	1.9	8	uA
Output on voltage(high side)	V_{OH}	I_Q=-0.5mA	2.7	2.9		V
Output on voltage (low side)	V_{OL}	I_Q=0.5mA		0.1	0.3	V
Output rise time	t_R	R_L=2.7KΩ, C_L=10pF		0.5	1	us
Output fall time	r_F	R_L=2.7KΩ, C_L=10pF		0.1	1	us
Operating time	t_{OP}		25	100	160	us
Standby time	t_{STB}			50	100	ms
Start-up time of IC	t_{STU}			12	20	us

BLOCK DIAGRAM



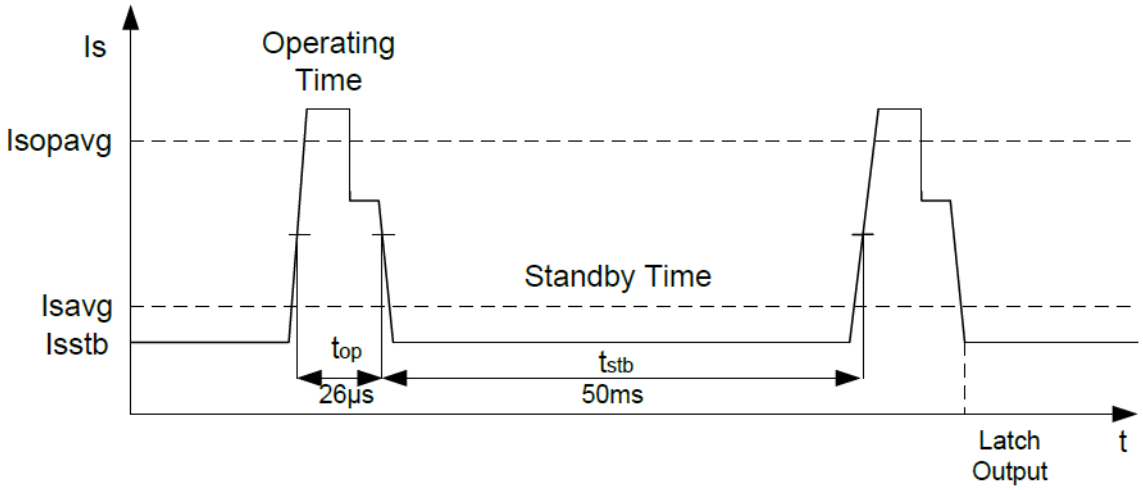
DETAILED INFORMATION

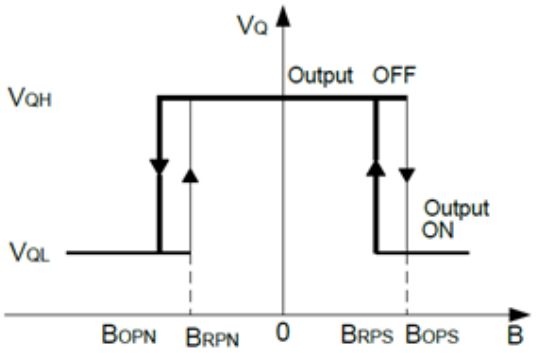
Mangentic Characteristics

T_A=+25℃,V_{DD}=3.0V, Unless otherwise specified[NOTE1]

Symbol	Min	Typ	Max	Unit
BOPS	2	3.5	5	mT
BOPN	-5	-3.0	-2	mT
BRPS	1.2	3.7	4.2	mT
BRPN	-4.2	-2.6	-1.2	mT
BHYS	0.2	0.8	1.6	mT

NOTE1: Typical data is at T_A=25℃,V_{DD}=3V,and for design information only.

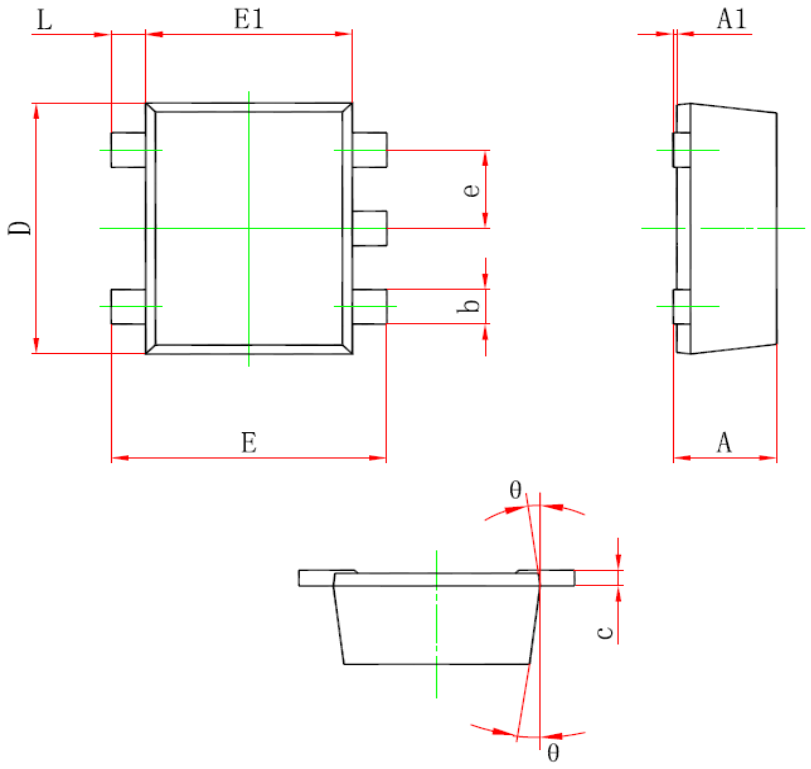




V_Q as function of the applied B-Field

PACKAGE INFORMATION

Dimension in SOT-553 (Unit: mm)



Symbol	Min	Max
A	0.525	0.600
A1	0.000	0.050
e	0.450	0.550
c	0.090	0.160
D	1.500	1.700
b	0.170	0.270
E1	1.100	1.300
E	1.500	1.700
L	0.100	0.300
θ	7° REF.	

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