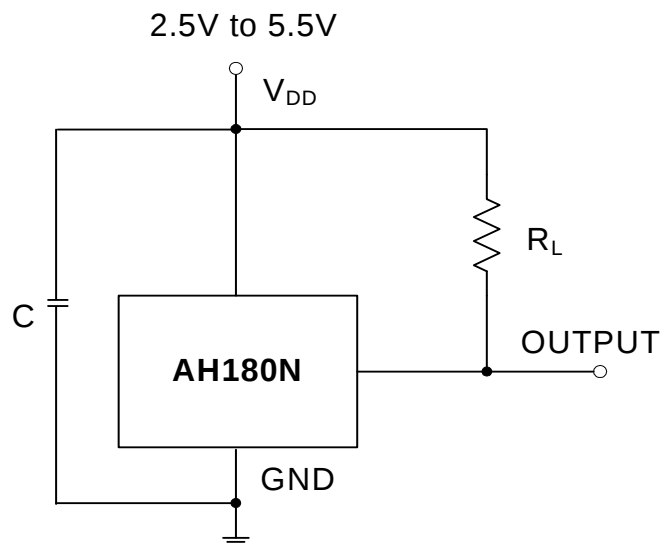


Typical Applications Circuit

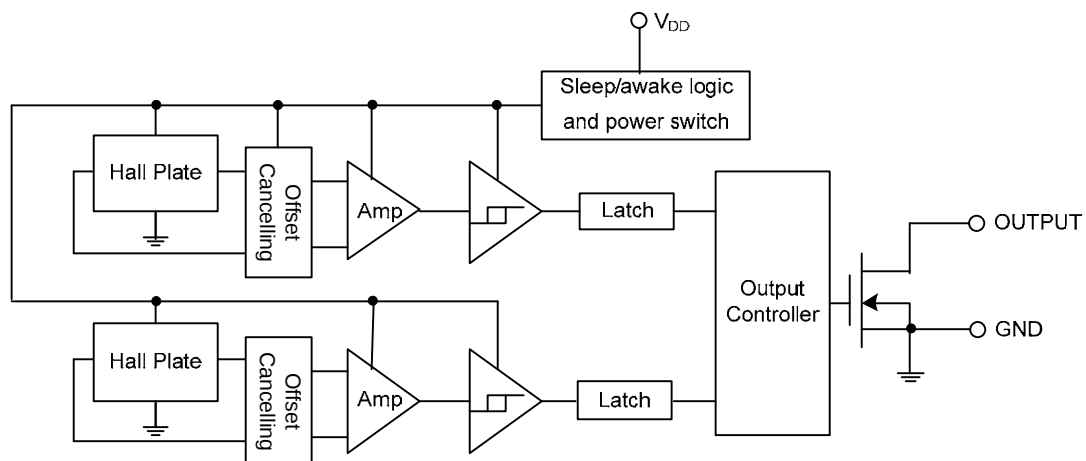


Note: C is for power stabilization and to strengthen the noise immunity, the recommended capacitance is 10nF ~ 100nF.
RL is the pull-up resistor, the recommended resistance is 10kOhm ~ 100kOhm.

Pin Descriptions

Pin Name	P/I/O	Function
V _{DD}	P/I	Power Supply Input
GND	P/I	Ground
Output	O	Output Pin

Functional Block Diagram



Absolute Maximum Ratings (Note 4) (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Symbol	Parameter	Ratings	Unit
V_{DD}	Supply Voltage (Note 5)	7	V
B	Magnetic Flux Density	Unlimited	
P_D	Package Power Dissipation	SC59	230
		TSOT23	230
		SOT553	230
T_s	Storage Temperature Range	-65 to +150	$^\circ\text{C}$
T_J	Maximum Junction Temperature	150	$^\circ\text{C}$

- Notes:
- Stresses greater than the 'Absolute Maximum Ratings' specified above, may cause permanent damage to the device. These are stress ratings only; functional operation of the device at these or any other conditions exceeding those indicated in this specification is not implied. Device reliability may be affected by exposure to absolute maximum rating conditions for extended periods of time.
 - The absolute maximum V_{DD} of 7V is a transient stress rating and is not meant as a functional operating condition. It is not recommended to operate the device at the absolute maximum rated conditions for any period of time.

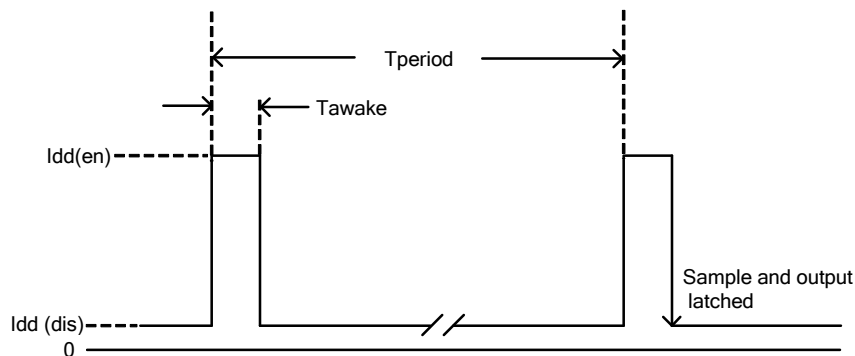
Recommended Operating Conditions (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Symbol	Parameter	Conditions	Rating	Unit
V_{DD}	Supply Voltage	Operating	2.5 to 5.5	V
T_A	Operating Temperature Range	Operating	-40 to +85	$^\circ\text{C}$

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, $V_{DD} = 3\text{V}$, unless otherwise specified.)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_{OUT}	Output On Voltage	$I_{OUT} = 1\text{mA}$	—	0.1	0.3	V
I_{off}	Output Leakage Current	$V_{OUT} = 5.5\text{V}$, Output Off	—	<0.1	1	μA
$I_{dd(en)}$	Supply Current	Chip Enable, $T_A = +25^\circ\text{C}$, $V_{DD} = 3\text{V}$	—	3	6	mA
$I_{dd(en)}$		Chip Enable, $T_A = -40$ to $+85^\circ\text{C}$, $V_{DD} = 2.5\text{V}$ to 5.5V	—	3	12	mA
$I_{dd(dis)}$		Chip Disable, $T_A = +25^\circ\text{C}$, $V_{DD} = 3\text{V}$	—	5	10	μA
$I_{dd(dis)}$		Chip Disable, $T_A = -40$ to 85°C , $V_{DD} = 2.5\text{V}$ to 5.5V	—	5	28	μA
$I_{dd(ave)}$		Average Supply Current, $T_A = +25^\circ\text{C}$, $V_{DD} = 3\text{V}$	—	8	16	μA
$I_{dd(ave)}$		Average Supply Current, $T_A = -40$ to $+85^\circ\text{C}$, $V_{DD} = 2.5\text{V}$ to 5.5V	—	8	40	μA
T_{wake}	Awake Time	(Note 6)	—	75	125	μs
T_{period}	Period	(Note 6)	—	75	125	ms
D.C.	Duty Cycle		—	0.1	—	%

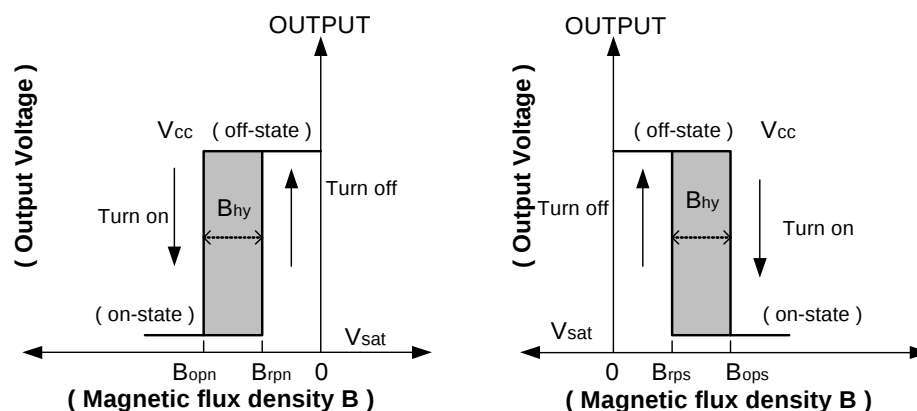
- Notes:
- When power is initially turned on, V_{DD} must be within its correct operating range (2.5V to 5.5V) to guaranteed the output sampling. The output state is valid after the second operating cycle (typical 150ms).



Magnetic Characteristics (Note 7 & 8) (@ $T_A = +25^\circ\text{C}$, $V_{DD} = 3\text{V}$, unless otherwise specified.)

Symbol	Parameter	Min	Typ	Max	Unit
Bops(south pole to brand side)	Operation Point	—	35	50	Gauss
Bopn(north pole to brand side)		-50	-35	—	
Brps(south pole to brand side)	Release Point	10	25	—	
Brpn(north pole to brand side)		—	-25	-10	
Bhy(Bopx - Brpx)	Hysteresis	—	10	—	

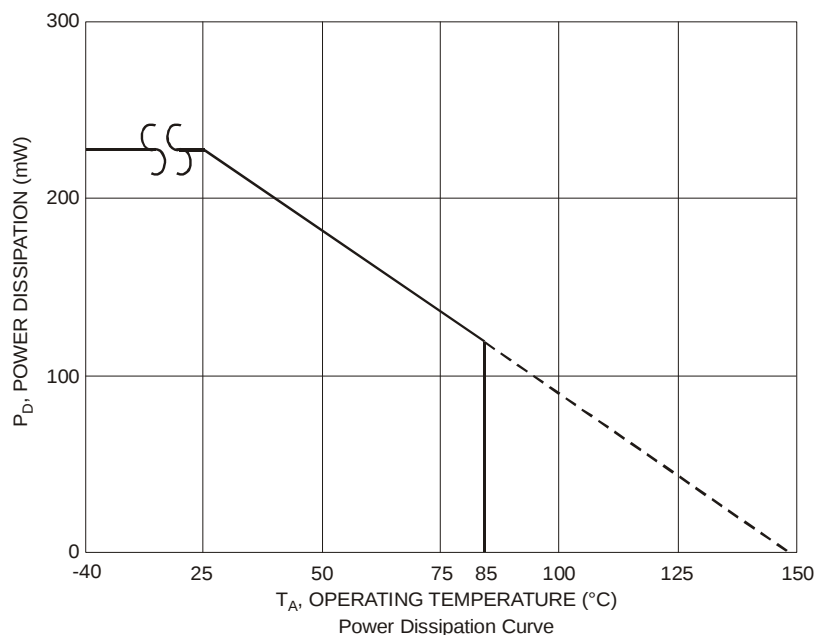
Notes: 7. Typical data is at $T_A = +25^\circ\text{C}$, $V_{DD} = 3\text{V}$, and for design information only.
8. The magnetic characteristics may vary with supply voltage, operating temperature and after soldering.



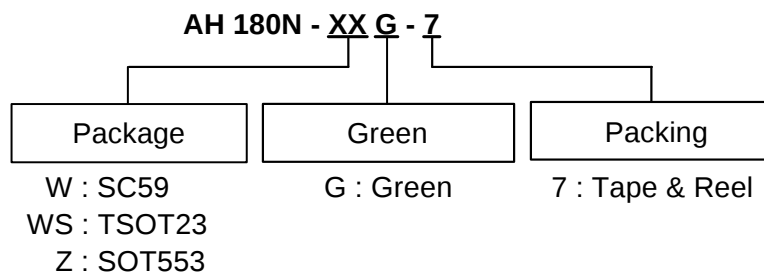
Performance Characteristics

(1) SC59 (commonly known as SOT23 in Asia), TSOT23, and SOT553

T_A ($^\circ\text{C}$)	25	50	60	70	80	85	90	100	110	120	130	140	150
P_D (mW)	230	184	166	147	129	120	110	92	74	55	37	18	0



Ordering Information

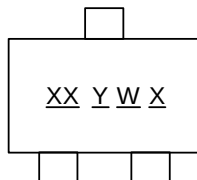


Device	Package Code	Packaging	7" Tape and Reel	
			Quantity	Part Number Suffix
AH180N-WG-7	W	SC59	3000/Tape & Reel	-7
AH180N-WSG-7	WS	TSOT23	3000/Tape & Reel	-7
AH180N-ZG-7	Z	SOT553	3000/Tape & Reel	-7

Marking Information

(1) SC59 (commonly known as SOT23 in Asia) and TSOT23

(Top View)

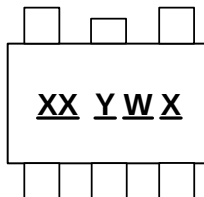


XX : Identification code
Y : Year 0 to 9
W : Week : A to Z : 1 to 26 week;
a to z : 27 to 52 week; z represents 52 and 53 week
X : A to Z : Green

Part Number	Package	Identification Code
AH180N	SC59	K9
AH180N	TSOT23	N9

(2) SOT553

(Top View)



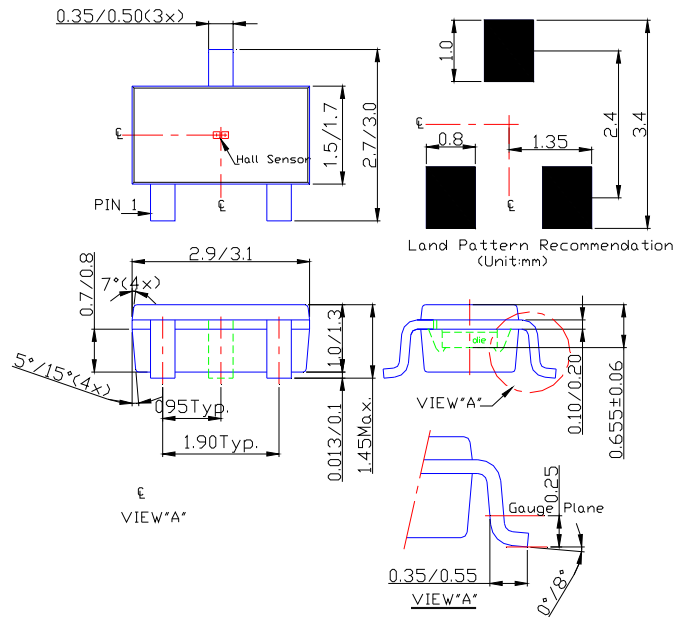
XX : Identification Code
Y : Year : 0 to 9
W : Week : A to Z : 1~26 week;
a to z : 27~52 week; z represents 52 and 53 week
X : A to Z : Green

Part Number	Package	Identification Code
AH180N	SOT553	K9

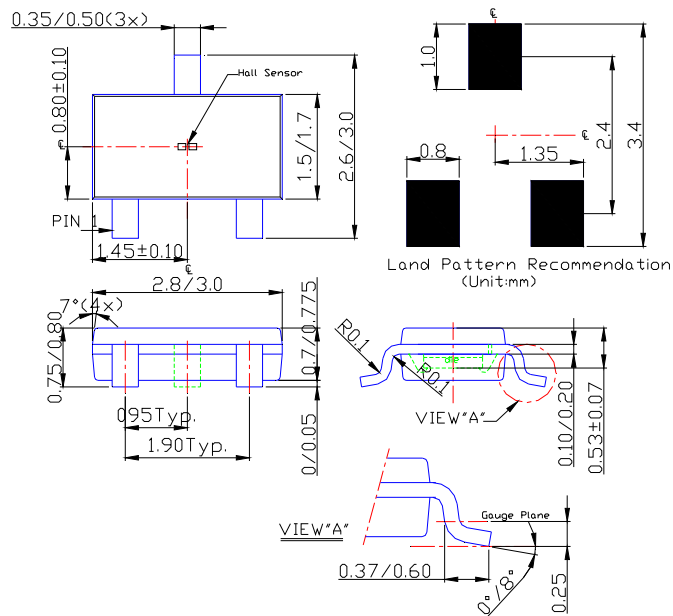
Package Outline Dimensions (All dimensions in mm.)

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.

(1) Package Type: SC59

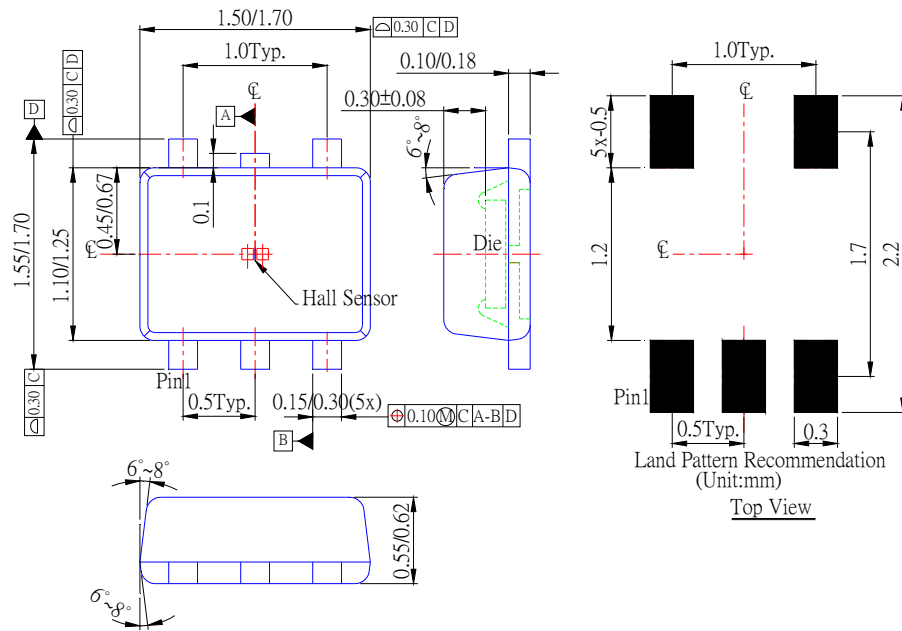


(2) Package Type: TSOT23



Package Outline Dimensions (Continued) (All dimensions in mm.)

(3) Package Type: SOT553



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