



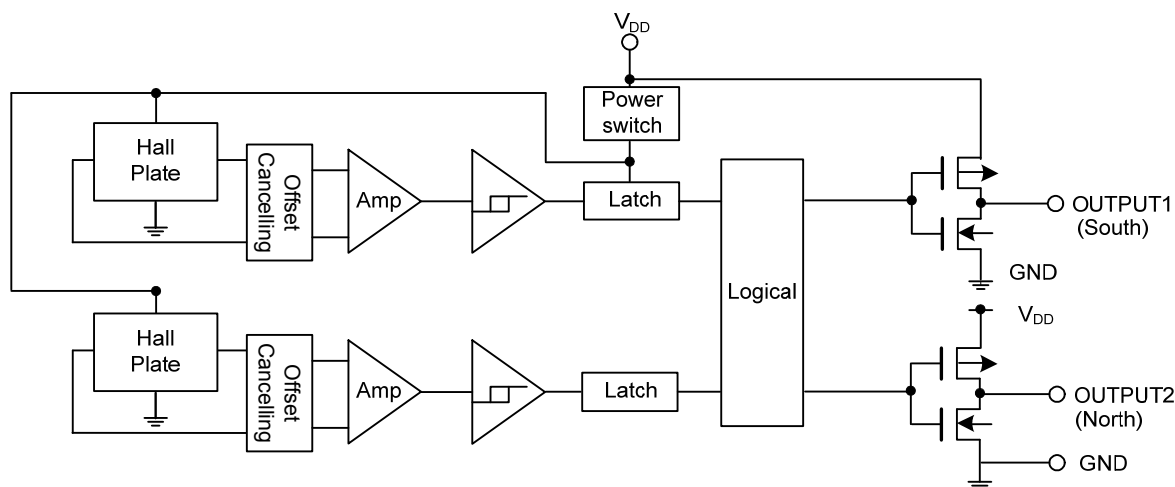
## Pin Descriptions

Package: SOT553

Pin Number	Pin Name	Function
1	OUTPUT2	North Pole Selecting Output Pin (active low)
2	GND	Ground
3	NC	No Connection (Note 5)
4	V <sub>DD</sub>	Power Supply Voltage
5	OUTPUT1	South Pole Detecting Output Pin (active low)

Note: 5. NC is "No Connection" pin and is not connected internally. This pin can be left open or tied to ground.

## Functional Block Diagram



## Absolute Maximum Ratings (Note 6) (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Symbol	Characteristics	Values	Unit
V <sub>DD</sub>	Supply Voltage (Note 7)	5	V
V <sub>DD_REV</sub>	Reverse Supply Voltage	-0.3	V
I <sub>OUTPUT</sub>	Output current (source and sink)	1	mA
B	Magnetic Flux Density	Unlimited	
P <sub>D</sub>	Package Power Dissipation	SOT553	230 mW
T <sub>s</sub>	Storage Temperature Range	-65 to +150	°C
T <sub>J</sub>	Maximum Junction Temperature	150	°C
ESD	Human Body Model ESD capability	4	kV

Notes: 6. 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.  
7. The absolute maximum V<sub>DD</sub> of 6V 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<sub>A</sub> = +25°C, unless otherwise specified.)

Symbol	Characteristic	Conditions	Rating	Unit
V <sub>DD</sub>	Supply Voltage	Operating	1.65 to 3.6	V
T <sub>A</sub>	Operating Temperature Range	Operating	-40 to +85	°C

**Electrical Characteristics** (Note 8) (@T<sub>A</sub> = +25°C, V<sub>DD</sub> = 1.8V, unless otherwise specified.)

Symbol	Characteristic	Conditions	Min	Typ	Max	Unit
V <sub>OH</sub>	OUTPUT1 and OUTPUT2 High Voltage (off)	I <sub>OUT</sub> = -0.5mA	V <sub>DD</sub> -0.2	—	—	V
V <sub>OL</sub>	OUTPUT1 and OUTPUT2 Low Voltage (on)	I <sub>OUT</sub> = 0.5mA	—	0.1	0.2	V
I <sub>DD</sub>	Supply Current	V <sub>DD</sub> = 1.8V Outputs Off	—	2.1	—	mA
		V <sub>DD</sub> = 3.6V Outputs Off	—	5	—	mA

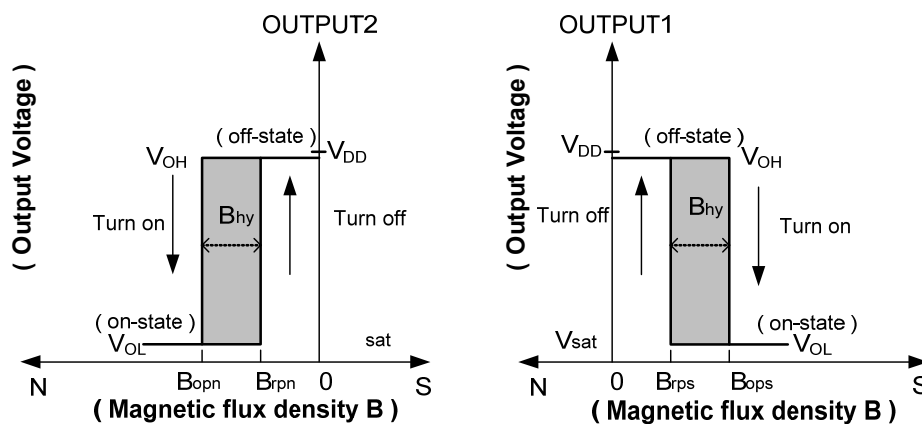
Note: 8. When power is initially turned on, the operating V<sub>DD</sub> (1.65V to 3.6V) must be applied to guaranteed the output.

**Magnetic Characteristics** (Note 9, 10, 11) (@T<sub>A</sub> = +25°C, V<sub>DD</sub> = 1.8V, unless otherwise specified.)

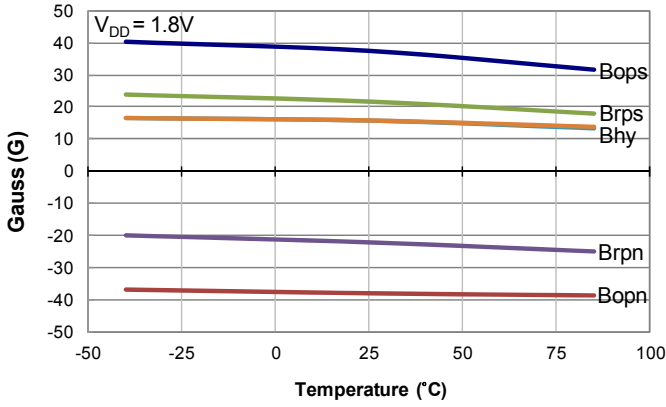
(1mT=10 Gauss)

Output	Symbol	Characteristic	Min	Typ	Max	Unit
OUTPUT1	Bops (South pole to part marking side)	Operation Point	—	35	50	Gauss
	Brps (South pole to part marking side)	Release point	6	20	—	
OUTPUT2	Bopn (North pole to part marking side)	Operation Point	-50	-35	—	
	Brpn (North pole to part marking side)	Release point	—	-20	-6	
	Bhy ( Bopx - Brpx )	Hysteresis	—	8	—	

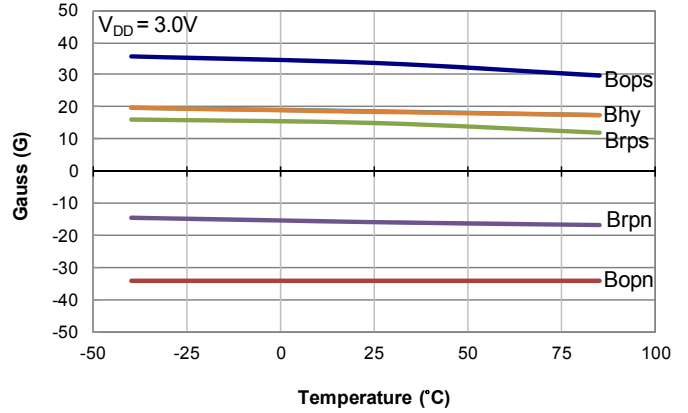
Notes: 9. Typical data is at T<sub>A</sub> = +25°C, V<sub>DD</sub> = 3V, and for design information only.  
 10. Bops and Brps for OUTPUT1 pin responds to South pole only; Bopn and Brpn for OUTPUT2 pin responds to North pole only.  
 11. Magnetic characteristics may vary with operating temperature and after soldering.



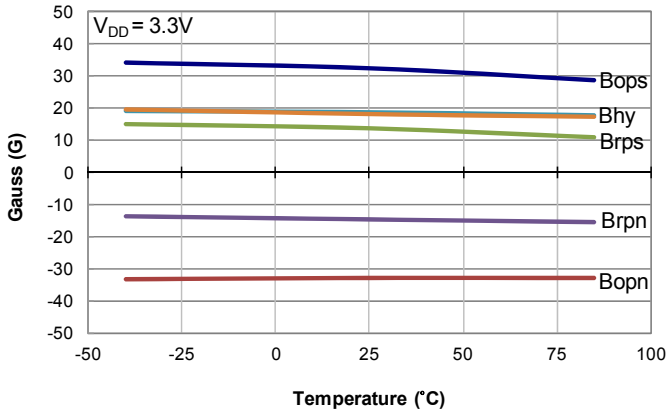
**Typical Operating Characteristics**



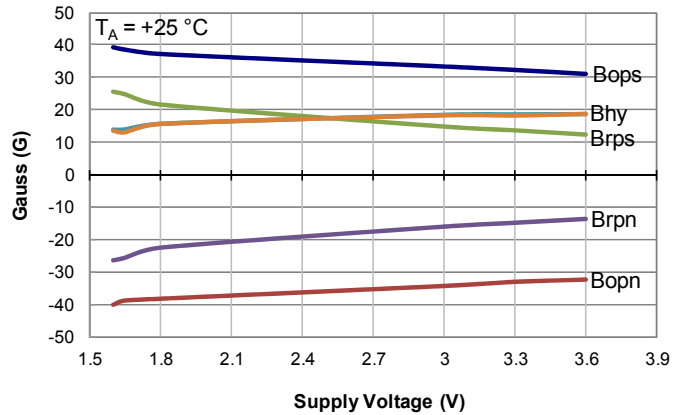
Switch Points vs Temperature



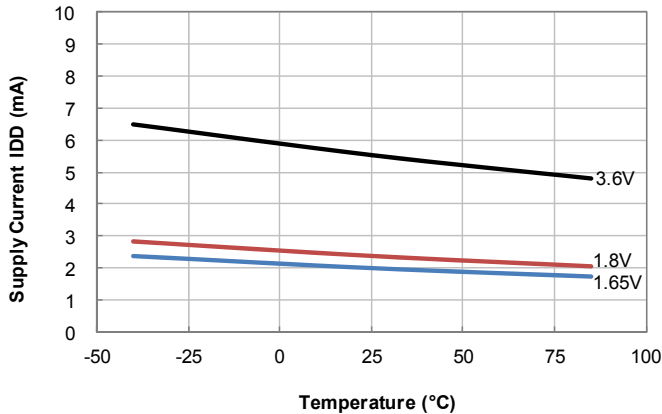
Switch Points vs Temperature



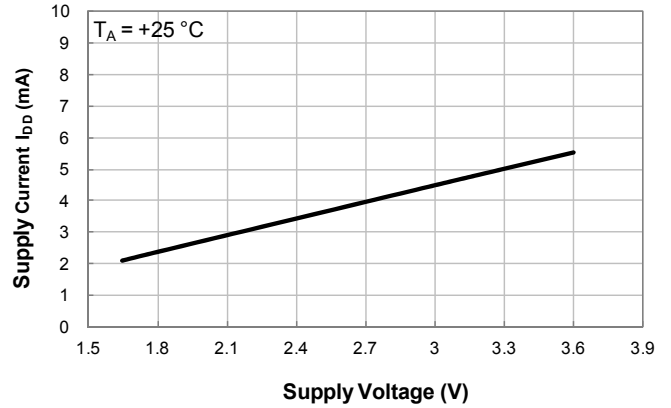
Switch Points vs Temperature



Switch Points vs Supply Voltage



Supply Current vs. Temperature

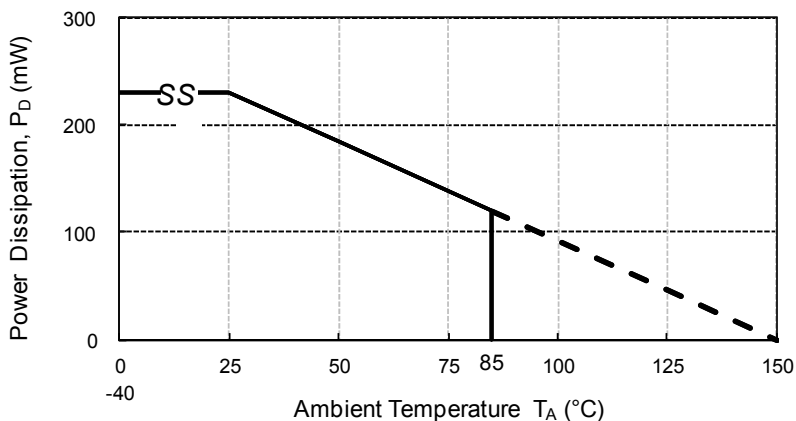


Supply Current vs. Supply Voltage

NEW PRODUCT

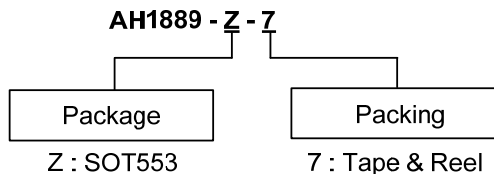
**Thermal Performance Characteristics**

T <sub>A</sub> (°C)	25	50	60	70	80	85	90	100	110	120	130	140	150
P <sub>D</sub> (mW)	230	184	166	147	129	120	110	92	74	55	37	18	0



**Power Dissipation Curve**

**Ordering Information**

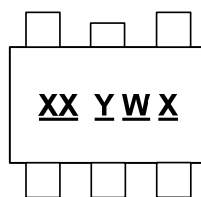


Part Number	Package Code	Packaging	7" Tape and Reel	
			Quantity	Part Number Suffix
AH1889-Z-7	Z	SOT553	3000/Tape & Reel	-7

**Marking Information**

(1) Package Type: SOT553

( Top View )



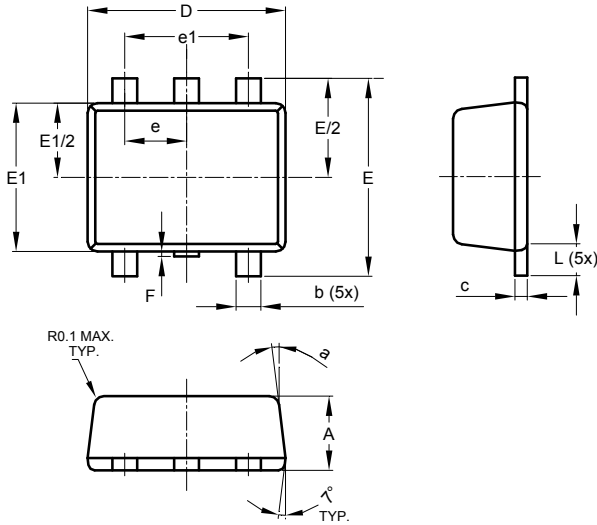
**XX** : Identification Code  
**Y** : Year : 0 to 9  
**W** : Week : A to Z : 1~26 week;  
 a to z : 27~52 week; z represents  
 52 and 53 week  
**X** : Internal code

Part Number	Package	Identification Code
AH1889	SOT553	KX

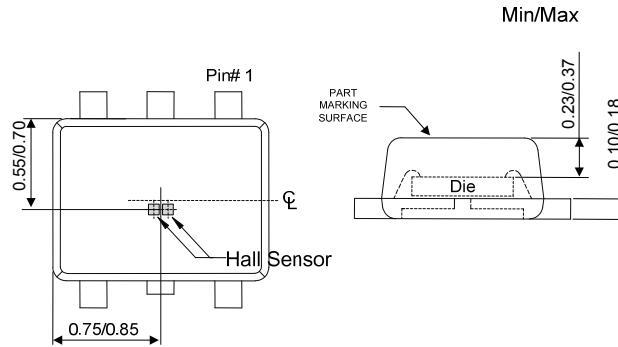
**Package Outline Dimensions** (All dimensions in mm.)

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

(1) Package Type: SOT553



SOT553			
Dim	Min	Max	Typ
A	0.55	0.62	0.60
b	0.15	0.30	0.20
c	0.10	0.18	0.15
D	1.50	1.70	1.60
E	1.55	1.70	1.60
E1	1.10	1.25	1.20
e	0.50 BSC		
e1	1.00 BSC		
F	0.00	0.10	—
L	0.10	0.30	0.20
a	6°	8°	7°
<b>All Dimensions in mm</b>			

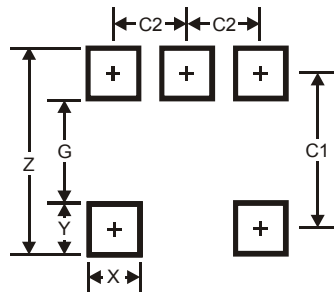


**Sensor Location**

**Suggested Pad Layout**

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.

(1) Package Type: SOT553



Dimensions	Value (in mm)
Z	2.2
G	1.2
X	0.375
Y	0.5
C1	1.7
C2	0.5

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