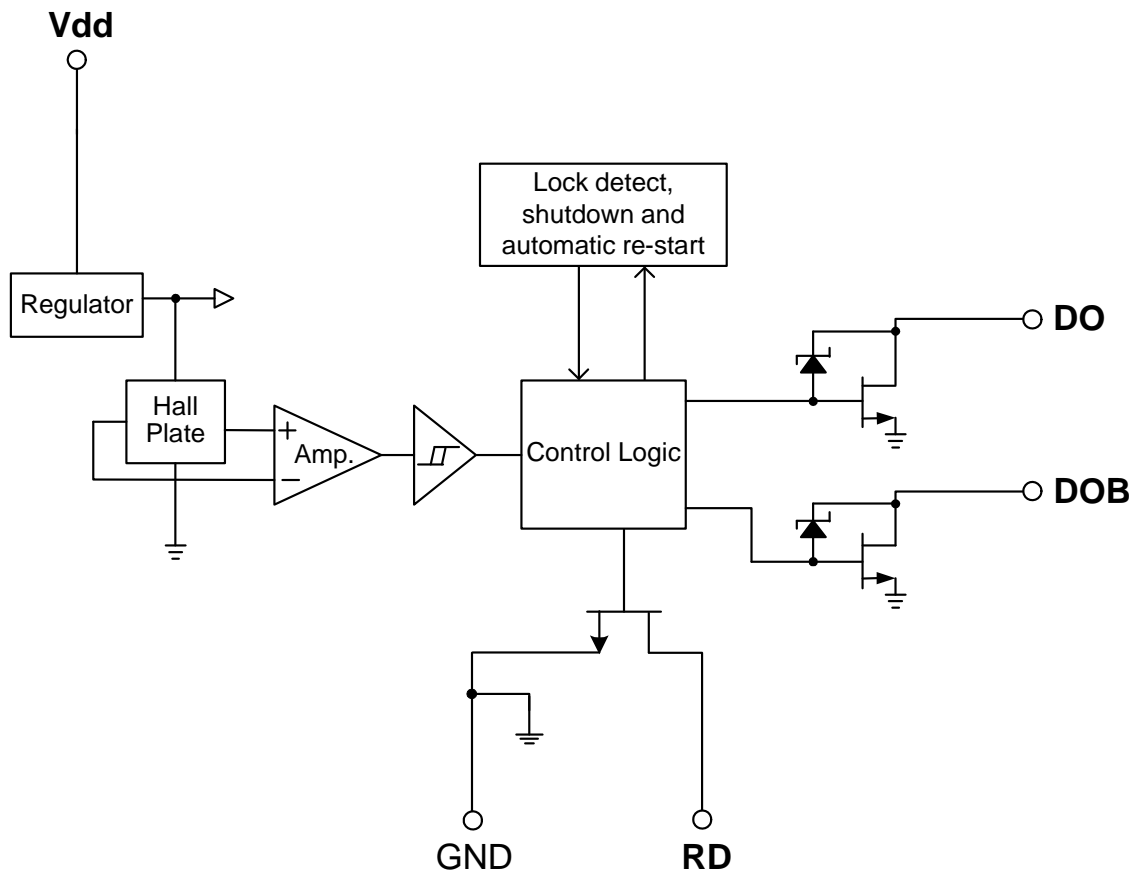




**Pin Descriptions**

Pin Name	Description
RD	Rotor-State Detection
Vdd	Input Power
DO	Output Pin
DOB	Output Pin
GND	Ground

**Functional Block Diagram**



### Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$ )

Symbol	Characteristics	Rating	Unit
V <sub>DD</sub>	Operating Supply Voltage	8	V
I <sub>O(AVE)</sub>	Output Current	400	mA
I <sub>O(PEAK)</sub>	Output Current	700	mA
P <sub>D</sub>	Power Dissipation	800	mW
T <sub>ST</sub>	Storage Temperature	-55 ~ 150	°C
T <sub>J</sub>	Maximum Junction Temperature	150	°C

### Recommended Operating Conditions

Symbol	Characteristic	Conditions	Min	Max	Unit
V <sub>DD</sub>	Supply Voltage (Note 2)	Operating	1.8	5.75	V
T <sub>A</sub>	Operating Ambient Temperature	Operating	-20	100	°C

Notes: 2. The output of IC will be switched after the supply voltage is over 1.8V, but the magnetic characteristics won't be normal until the supply is over 2.0V.

### Electrical Characteristics ( $T_A = 25^\circ\text{C}$ , V<sub>DD</sub> = 5V, unless otherwise specified)

Symbol	Characteristics	Conditions	Min	Typ.	Max	Unit
I <sub>DD</sub>	Supply current	Operating	-	2.6	4.0	mA
T <sub>RLP-ON</sub>	Rotor Lock Protection On Time		-	0.4	-	Sec
T <sub>RLP-OFF</sub>	Rotor Lock Protection Off Time		2.4	3	3.6	Sec
V <sub>OUT(SAT)</sub>	Output Saturation Voltage	I <sub>O</sub> = 180mA	-	300	-	mV
		I <sub>O</sub> = 350mA	-	600	-	mV
R <sub>DS(ON)</sub>	Output On Resistance		-	1.75	-	ohm
V <sub>OL</sub>	RD Output V <sub>ds</sub>	I <sub>O</sub> = 10mA	-	0.5	-	V
V <sub>Z</sub>	Output Zener-Breakdown Voltage		-	15	-	V

### Truth Table (Note 3)

IN-	IN+	CT	OUT1	OUT2	RD	Mode
H	L	L	H	L	L	Rotating
L	H	L	L	H	L	Rotating
-	-	H	off	off	off	Lockup protection activated

Notes: 3. Latch-type RD output is low during rotor rotation and high when the rotor is locked (not rotating)

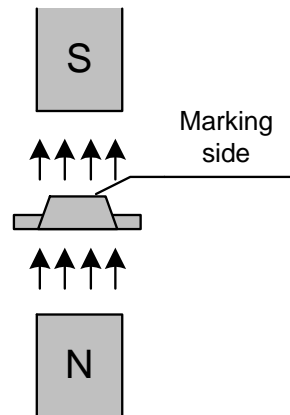
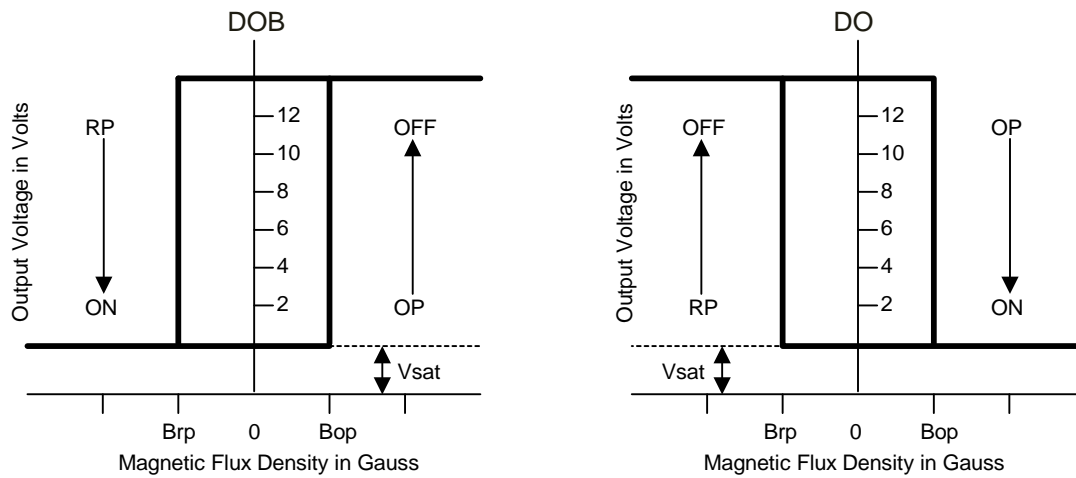
**Magnetic Characteristics** ( $T_A = 25\text{ }^\circ\text{C}$ ,  $V_{dd} = 5\text{V}$ , unless otherwise specified, Note 4)

(1mT = 10 Gauss)

Symbol	Characteristics	Min	Typ.	Max	Unit
Bop	Operation Point	-	30	60	Gauss
Brp	Release Point	-60	-30	-	Gauss
Bhy	Hysteresis	-	60	-	Gauss

Notes: 4. The magnetic characteristics may vary with supply voltage, operating temperature and after soldering.

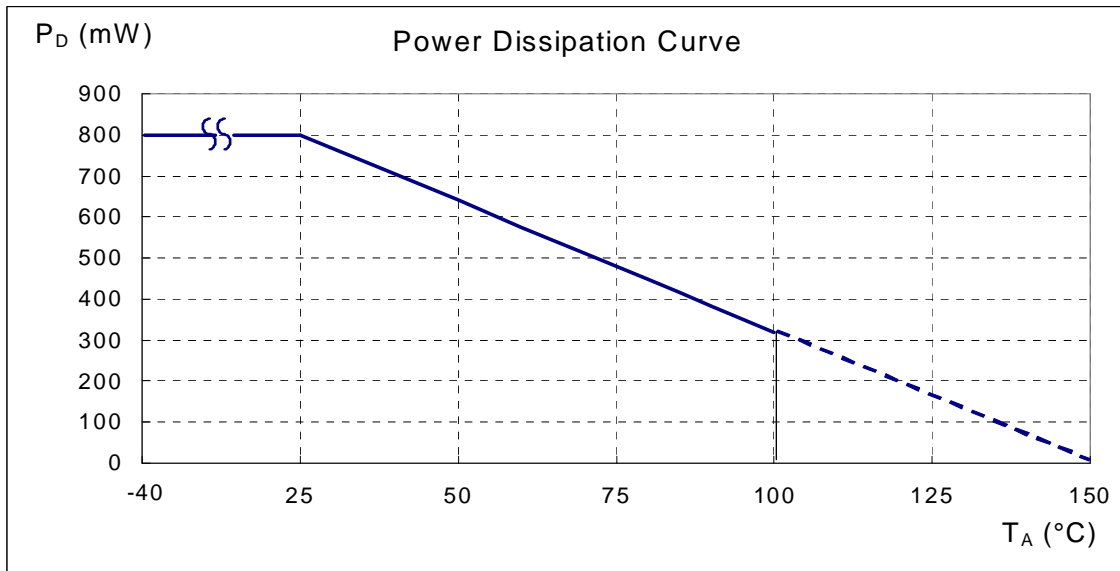
**Operating Characteristics**



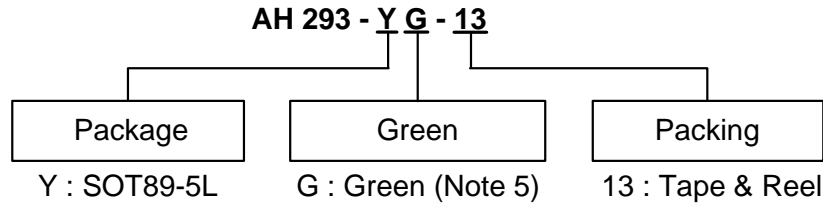
( SOT89-5L )

**Performance Characteristics**

<b>T<sub>A</sub> (°C)</b>	<b>25</b>	<b>50</b>	<b>60</b>	<b>70</b>	<b>75</b>	<b>80</b>	<b>85</b>	<b>90</b>	<b>95</b>	<b>100</b>
P <sub>D</sub> (mW)	800	640	576	512	480	448	416	384	352	320
<b>T<sub>A</sub> (°C)</b>	<b>105</b>	<b>110</b>	<b>115</b>	<b>120</b>	<b>125</b>	<b>130</b>	<b>135</b>	<b>140</b>	<b>145</b>	<b>150</b>
P <sub>D</sub> (mW)	288	256	224	192	160	128	96	64	32	0



**Ordering Information**



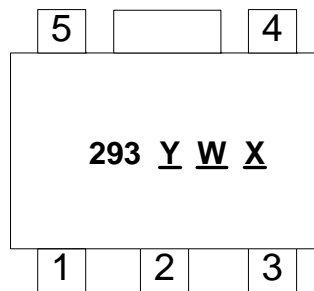
Device	Package Code	Packaging (Note 6, 7)	Bulk		13" Tape and Reel	
			Quantity	Part Number Suffix	Quantity	Part Number Suffix
AH293-YG-13	Y	SOT89-5L	NA	NA	2500/Tape & Reel	-13



- Notes:
5. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied. Please visit our website at [http://www.diodes.com/products/lead\\_free.html](http://www.diodes.com/products/lead_free.html).
  6. Pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  7. Reverse taping as shown on Diodes Inc. Surface Mount (SMD) Packaging document AP02007, which can be found on our website <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**

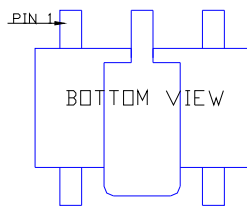
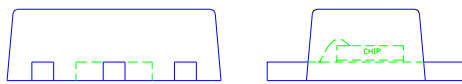
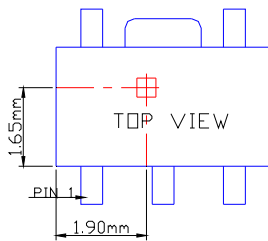
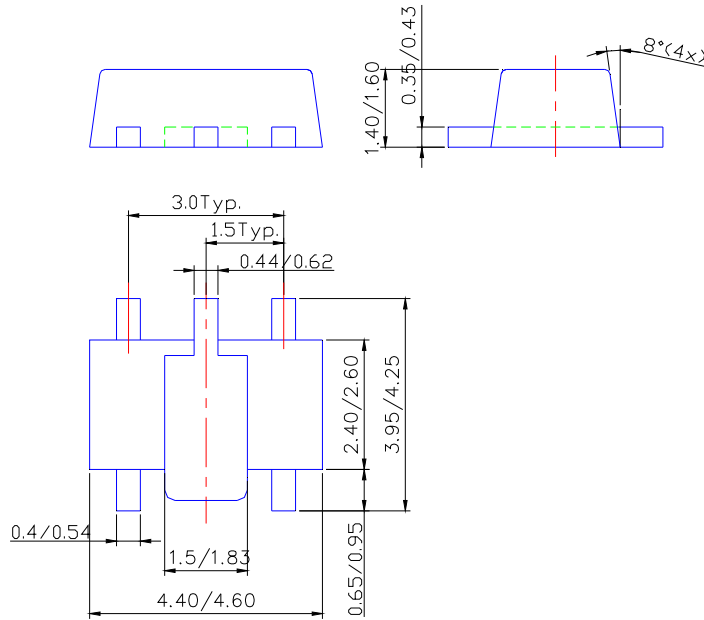
**(Top View)**



**SOT89-5L**

- Y : Year : 0~9
- W : Week : A~Z : 1~26 week;  
a~z : 27~52 week;  
z represents 52 and 53 week
- X : Internal code  
A~Z : Green

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



**Sensor Location**

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