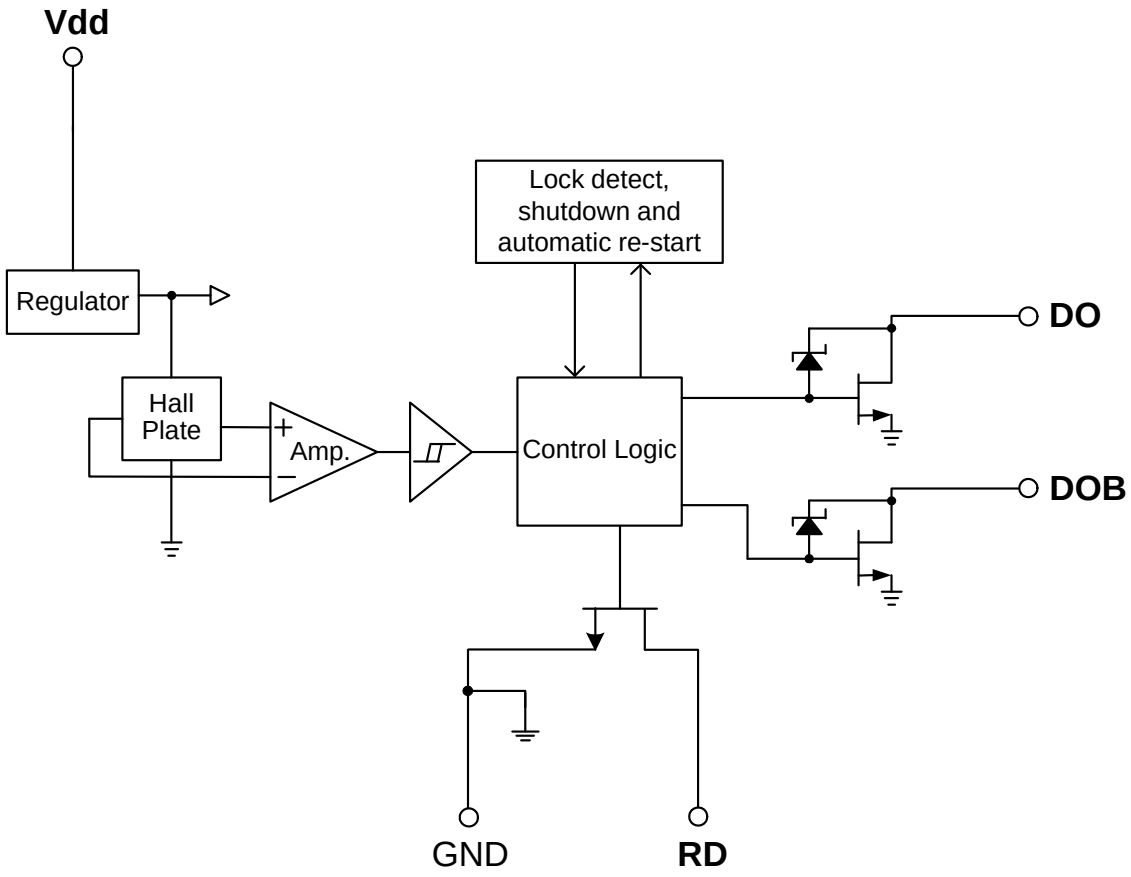
Pin Descriptions

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°C)

Symbol	Characteristics	Rating	Unit
Vdd	Operating Supply Voltage	8	V
$I_{O(AVE)}$	Output Current	400	mA
$I_{O(PEAK)}$	Output Current	700	mA
P_D	Power Dissipation	800	mW
T_{ST}	Storage Temperature	-55 ~ 150	°C
T_J	Maximum Junction Temperature	150	°C

Recommended Operating Conditions

Symbol	Characteristic	Conditions	Min	Max	Unit
Vdd	Supply Voltage (Note 2)	Operating	1.8	5.75	V
T_A	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 °C, Vdd = 5V, unless otherwise specified)

Symbol	Characteristics	Conditions	Min	Typ.	Max	Unit
Idd	Supply current	Operating	-	2.6	4.0	mA
T_{RLP-ON}	Rotor Lock Protection On Time		-	0.4	-	Sec
$T_{RLP-OFF}$	Rotor Lock Protection Off Time		2.4	3	3.6	Sec
$V_{OUT(SAT)}$	Output Saturation Voltage	I_O = 180mA	-	300	-	mV
		I_O = 350mA	-	600	-	mV
$R_{DS(ON)}$	Output On Resistance		-	1.75	-	ohm
V_{OL}	RD Output Vds	I_O = 10mA	-	0.5	-	V
Vz	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)

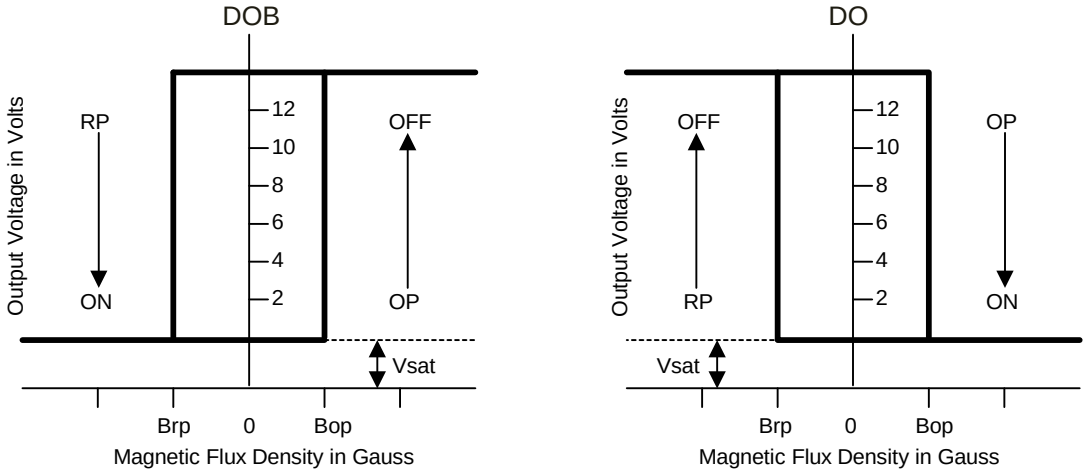
Magnetic Characteristics (T_A = 25 °C, Vdd = 5V, unless otherwise specified, Note 4)

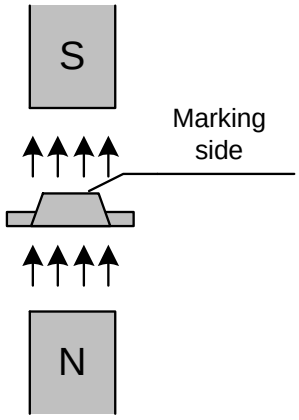
(1mT = 10 Gauss)

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

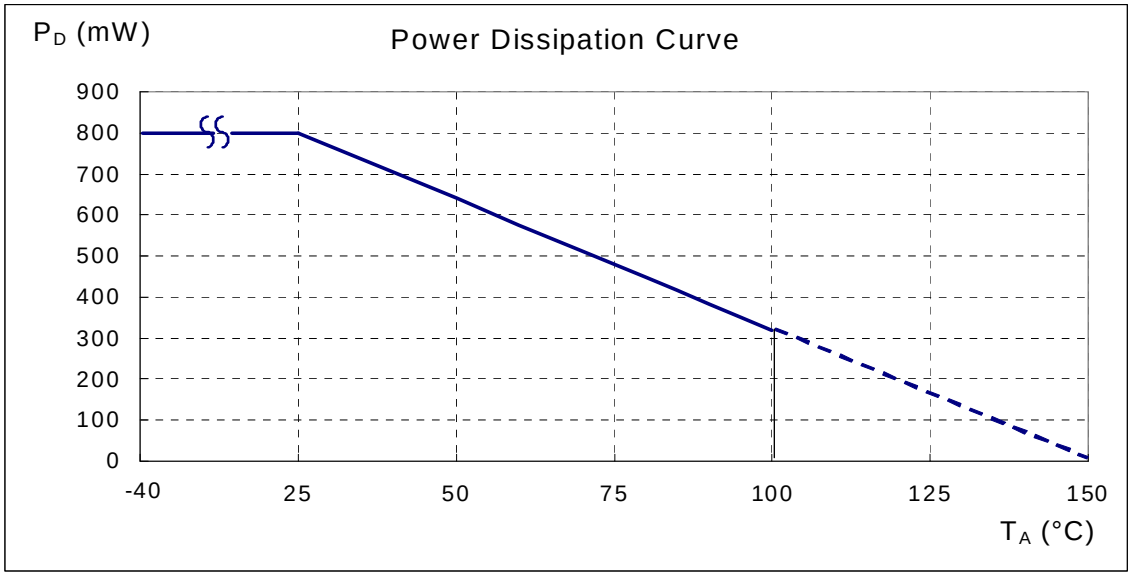




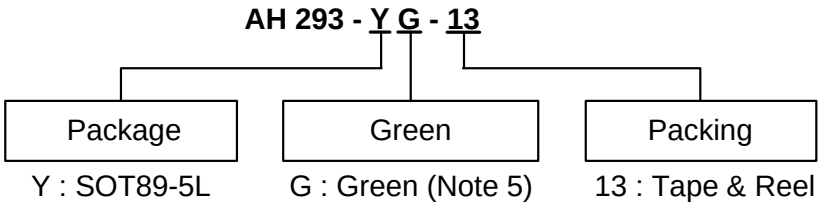
(SOT89-5L)

Performance Characteristics

T_A (°C)	25	50	60	70	75	80	85	90	95	100
P_D (mW)	800	640	576	512	480	448	416	384	352	320
T_A (°C)	**105**	**110**	**115**	**120**	**125**	**130**	**135**	**140**	**145**	**150**
P_D (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

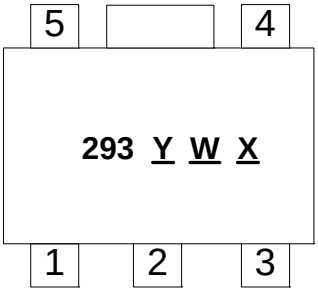
Notes: 5. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied. Please visit our website at http://www.diodes.com/products/lead_free.html.

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

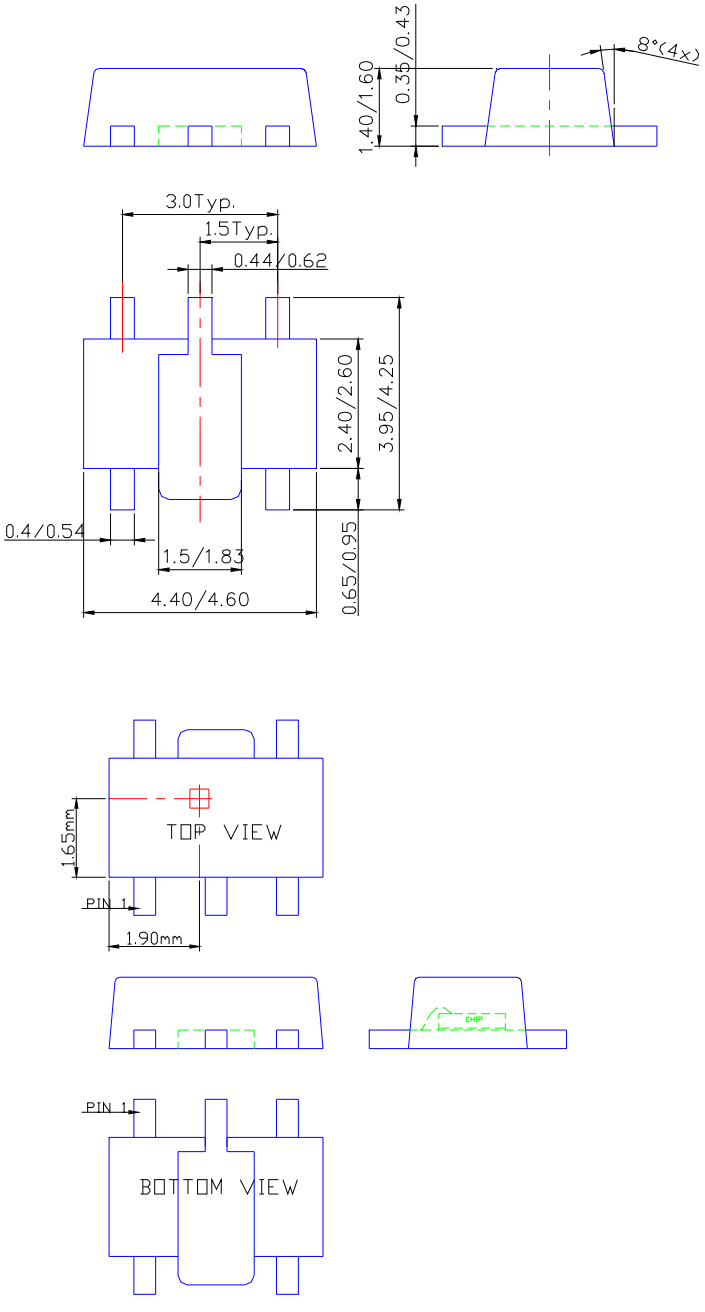
(Top View)



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

SOT89-5L

Package Outline Dimensions (All Dimensions in mm)



Sensor Location

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