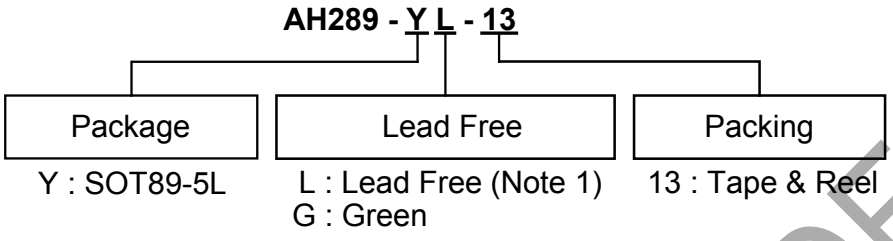
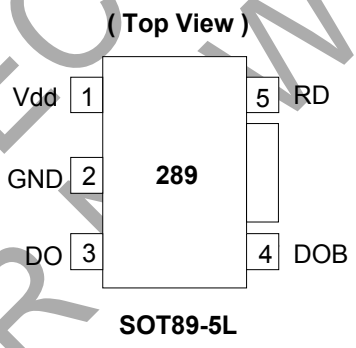
Ordering Information



Device	Package Code	Packaging (Note 3)	13" Tape and Reel	
			Quantity	Part Number Suffix
AH289-YL-13	Y	SOT89-5L	2500/Tape & Reel	-13
AH289-YG-13	Y	SOT89-5L	2500/Tape & Reel	-13

Notes:
1. AH289-YL-13 will be replaced by AH289-YG-13
2. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied. Please visit our website at http://www.diodes.com/products/lead_free.html.
3. 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.
4. 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.

Pin Assignments

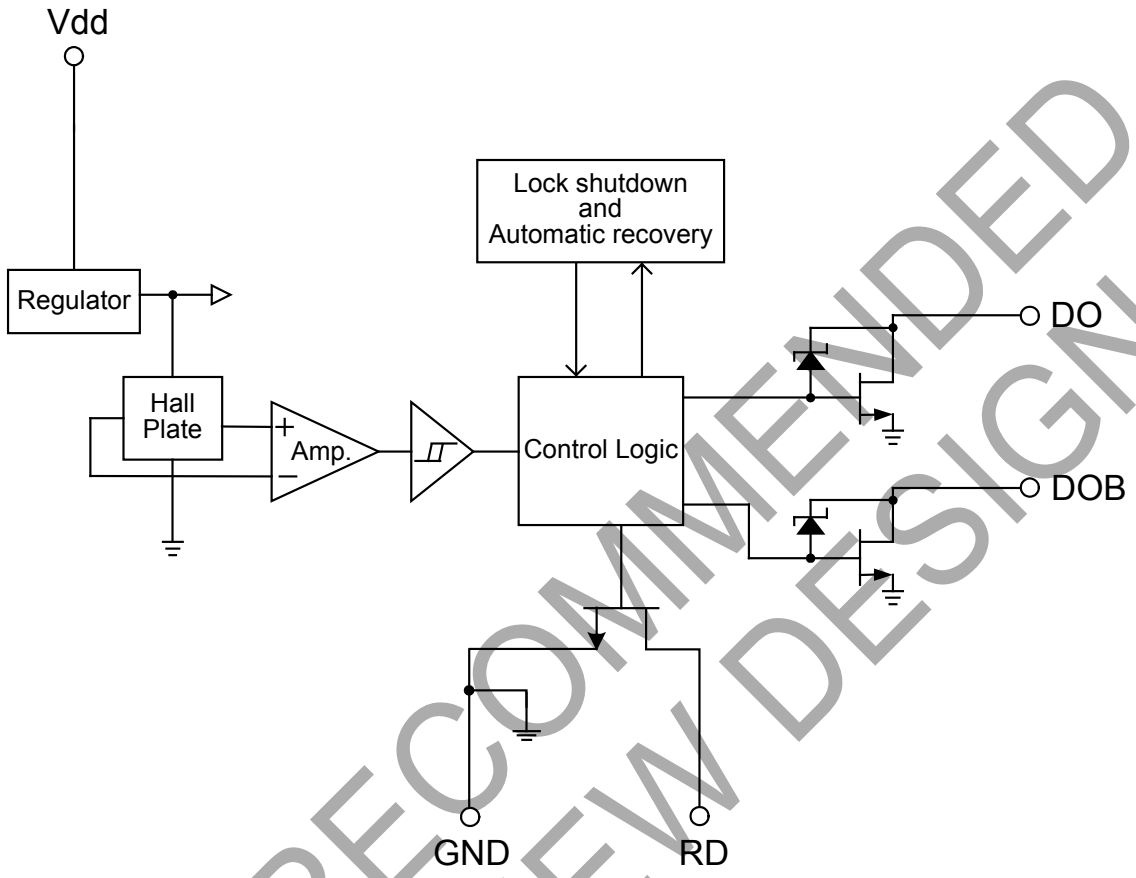


SOT89-5L

Pin Descriptions

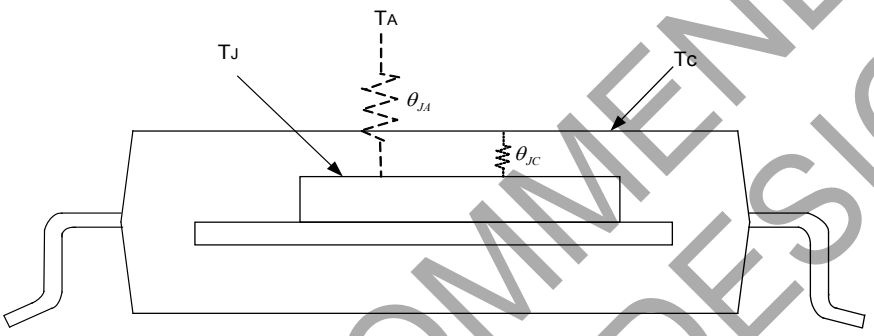
Pin Name	Pin No.	Description
Vdd	1	Input power
GND	2	Ground
DO	3	Output pin
DOB	4	Output pin
RD	5	Rotor-State Detection

Block Diagram



Absolute Maximum Ratings (T_A = 25°C)

Symbol	Parameter		Rating	Unit
Vdd	Supply Voltage		30	V
I_O	Output Current	$I_{O\ (AVE)}$	400	mA
		$I_{O\ (PEAK)}$	700	mA
P_D	Power Dissipation		800	mW
T_{ST}	Storage Temperature		-55 ~ 150	°C
T_J	Maximum Junction Temperature		150	°C
θ_{JA}	Thermal Resistance Junction-to-Case (Note 5)		156	°C/W



Notes: 5. θ_{JA} should be confirmed with what heat sink thermal resistance. If no heat sink contacting, θ_{JA} is almost the same as θ_{JC}..

Recommended Operating Conditions

Symbol	Characteristic	Conditions	Min	Max	Unit
Vdd	Supply Voltage (Note 6)	Operating	3.8	28	V
T_A	Operating Ambient Temperature	Operating	-40	100	°C

Notes: 6. Please watch the current limit issue when the operation voltage is over 26.4V, because of the different efficiency in the coil.

Electrical Characteristics (T_A = 25 °C, Vdd = 24V, unless otherwise specified)

Symbol	Parameter	Conditions	Min	Typ.	Max	Unit
Idd	Supply Current	Operating	-	2.0	4.0	mA
I_{OFF}	Output Leakage Current	V_{OUT} = 24V	-	< 0.1	10	μA
T_{LRP-ON}	Locked Protection On		0.4	0.46	0.6	Sec
$T_{LRP-OFF}$	Locked Protection Off		2.4	2.76	3.6	Sec
$V_{OUT(SAT)}$	Output Saturation Voltage	I_O = 200mA	-	450	700	mV
		I_O = 300mA	-	680	800	
$R_{DS(ON)}$	Output On Resistance	I_O = 200mA	-	2.25	3.5	ohm
V_{OL}	RD Output Vds	I_O = 10mA	-	0.3	0.5	V
Vz	Output Zener-Breakdown Voltage		42	55	65	V

Truth Table (Note 7)

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

Notes: 7. Latch-type RD output is low during rotation and high during stop.

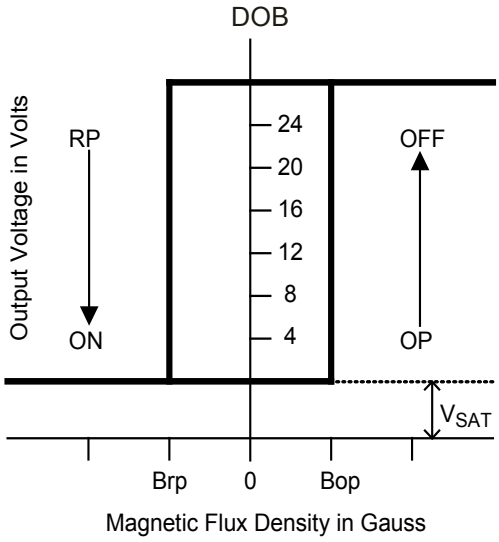
Magnetic Characteristics (T_A = 25 °C, Vdd = 24V, unless otherwise specified, Note 8)

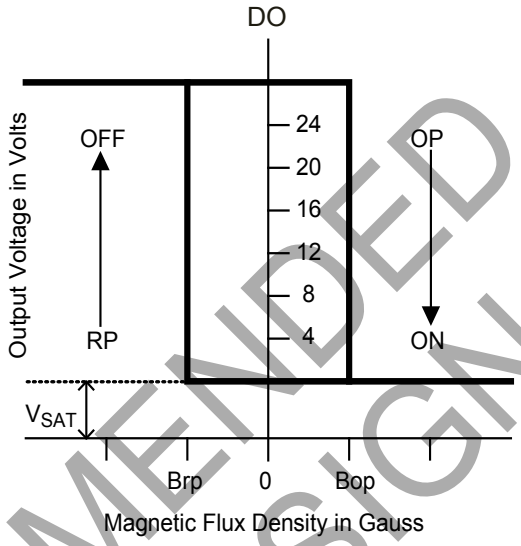
(1mT = 10 Gauss)

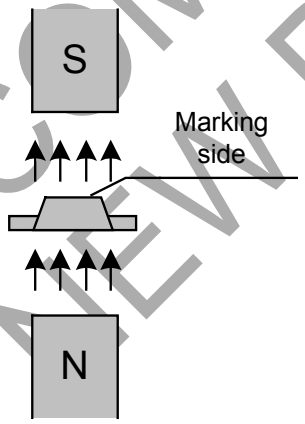
Symbol	Characteristics	Min	Typ.	Max	Unit
Bop	Operation Point	10	30	60	Gauss
Brp	Release Point	-60	-30	-10	Gauss
Bhy	Hysteresis	--	60	--	Gauss

Notes: 8. Magnetic characteristics are for design information, which will vary with supply voltage, operating temperature and after soldering.

Operating Characteristics



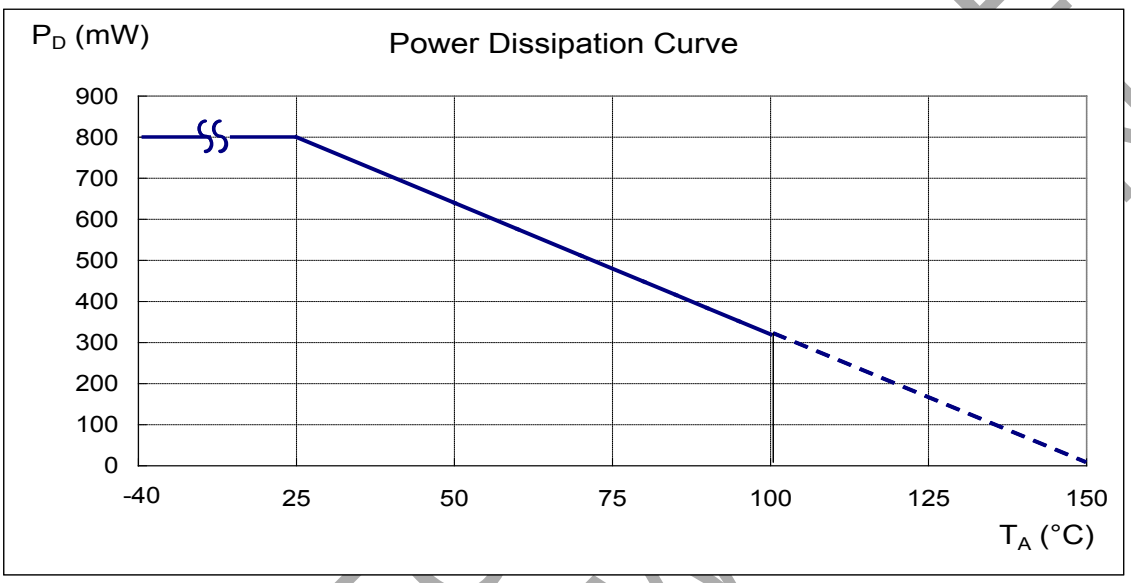




(SOT89-5L)

Performance Characteristics (SOT89-5L)

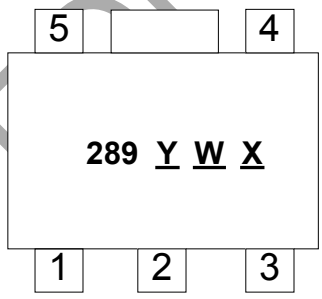
T_A (°C)	25	50	60	70	75	80	85	90	95	100
P_D (mW)	800	640	576	512	480	448	416	384	352	320
T_A (°C)	105	110	115	120	125	130	135	140	145	150
P_D (mW)	288	256	224	192	160	128	96	64	32	0



Marking Information

(1) SOT89-5L

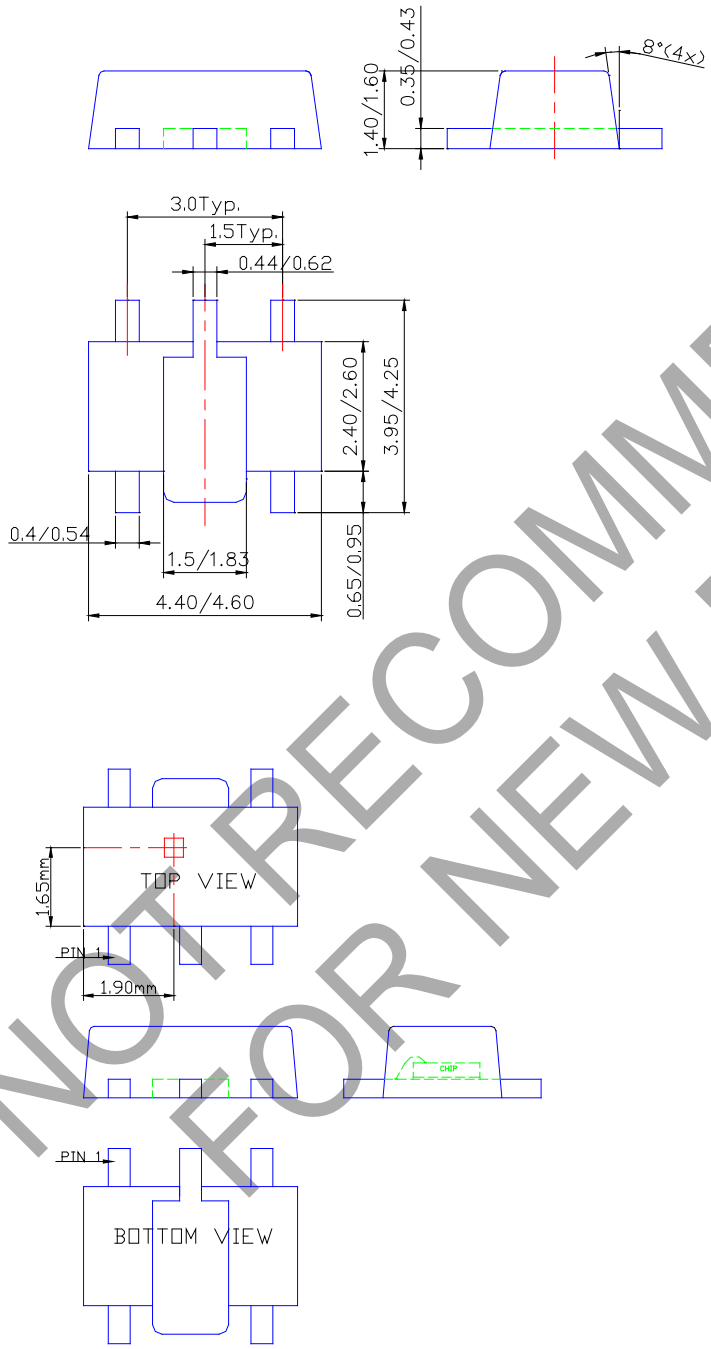
(Top View)



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
a~z : Lead Free

Package Information (All Dimensions in mm)

(1) Package type: SOT89-5L



Sensor Location

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