

AH201 Unipolar Hall-Effect Switches

AH201 is the magnetic sensor that consists of voltage regulator, hall voltage generator, differential amplifier, Schmitt trigger and open collector output. When it detects the magnetic flux of density, it outputs a digital voltage signal. It is the magnetic-sensing circuit that works by unipolar, and is suitable for the rectangular magnet and the column magnet.

FEATURES

Wide Supply Voltage Range
 Fast Response Time
 Wide Frequency (DC~100KHz)
 Long Operating Life, Small Size,
 Convenient Installing
 Direct connect with the transistor, TTL and MOS.

TYPICAL APPLICATIONS

Contactless Switch	Position Control
Speed Measurement	Isolation Measurement
Brushless DC Motor	Electric current sensor
Automotive Ignitor	Alarm system

ABSOLUTE MAXIMUM RATING

Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	24	V
Magnetic Flux Density	B	Unlimited	mT
Output breakdown reverse voltage	V_{ce}	40	V
Continuous Output Current	I_{OL}	25	mA
Operating Temperature Range	T_A	-40~125	°C
Storage Temperature Range	T_S	150	°C

ELECTRICAL CHARACTERISTICS

$T_A=25^{\circ}C$

Parameter	Symbol	Test condition	Type and Value			Unit
			min	typ	max	
Supply Voltage	V_{CC}		4.5	-	24	V
Output Off Voltage	V_{OL}	$I_{out}=15mA$ $B>B_{OP}$	--	200	400	mV
Output Current	I_{OH}	$V_{out}=24V$ $B<B_{RP}$	--	0.1	10	μA
Supply Current	I_{CC}	$V_{CC}=24V$ Open output	--	-	10	mA
Output Rise Time	t_r	$R_L=820\Omega$ $C_L=20PF$	--	0.12	-	μS
Output Fall Time	t_f	$R_L=820\Omega$ $C_L=20PF$	-	0.18	-	μS

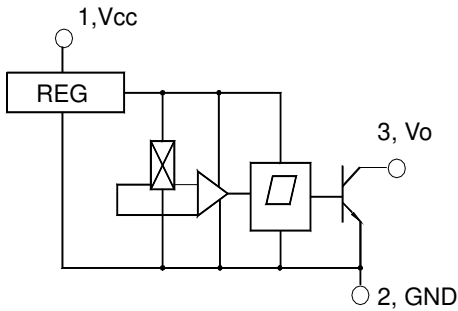
MAGNETIC CHARACTERISTICS

$V_{CC}=4.5\sim 24V$

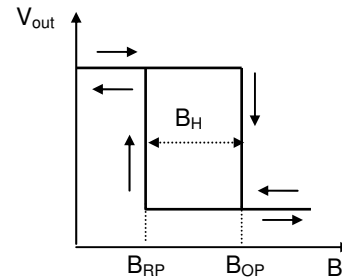
Parameter	Symbol	Type and Value			Unit
		min	typ	max	
Operate Point	B_{OP}	-	-	11	mT
Release Point	B_{RP}	1.0	-	-	mT
Hysteresis	B_H	2.0	-	-	mT

1mT=10Gs

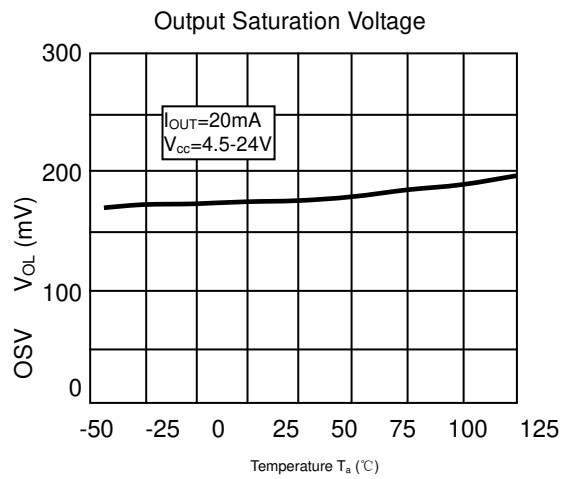
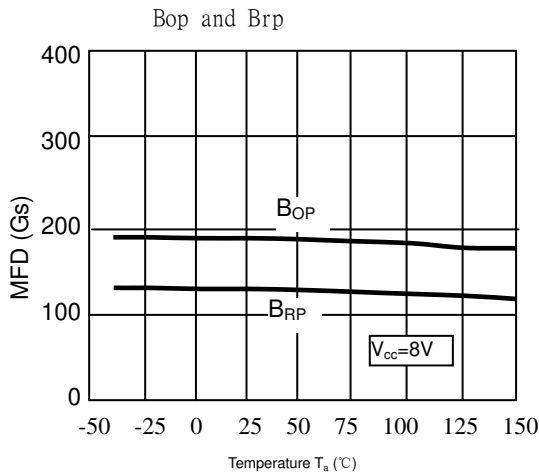
BLOCK DIAGRAM



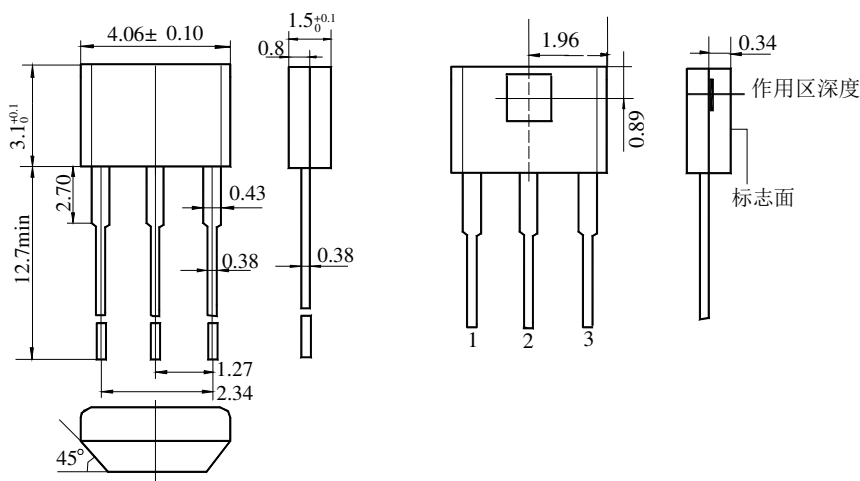
MAGNETIC-ELECTRICAL TRANSFER CHARACTERISTIC



TYPICAL OPERATING CHARACTERISTICS as a function of temperature



DIMENSIONS (in mm)



Pin designator

- 1. Supply
- 2. Ground
- 3. Output

TO-92UA Package and Active Area

Cautions

- 1. When install, should as full as possible decrease the mechanical stress acting on the Hall IC, to avoid the influence of the operate point and release point.
- 2. On the premise of ensuring welding quality, use as possible as low welding temperature as short time