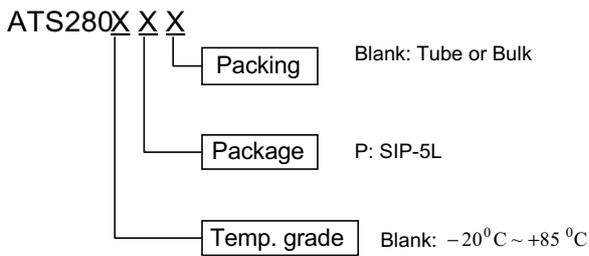


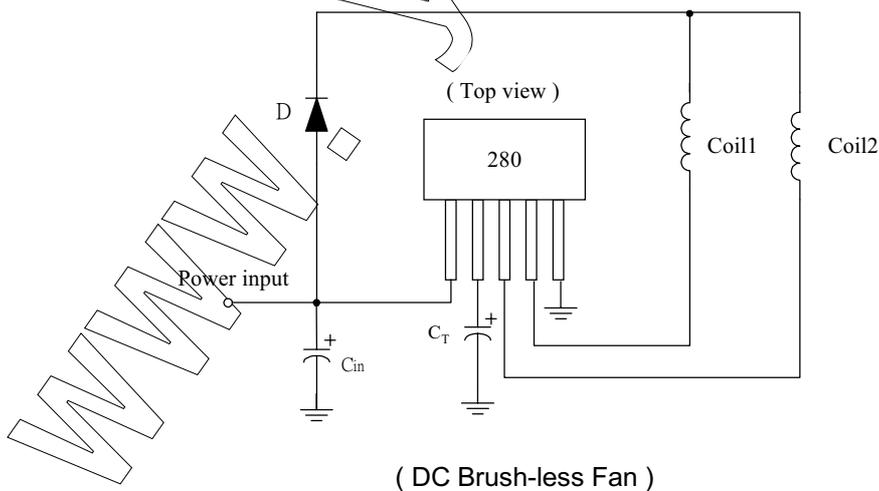
■ Features

- On chip Hall plate
- Built-in Zener protection for output driver
- Built in protection diode for power reverse connecting
- Rotor-locked detection
- Automatically restart after release of motor Locking
- Adjustable auto restart time
- Operating voltage: 3~20 V
- Output current: $I_{O(AVE)} = 500 \text{ mA}$
- Package: SIP-5L
- Less external component

■ Ordering Information



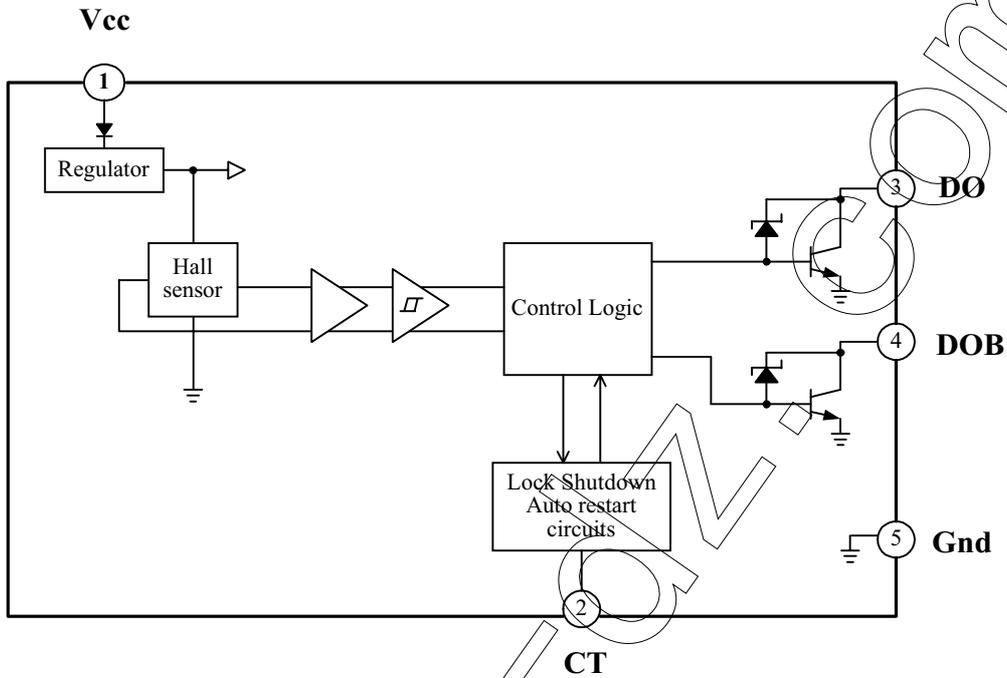
■ Application Circuit



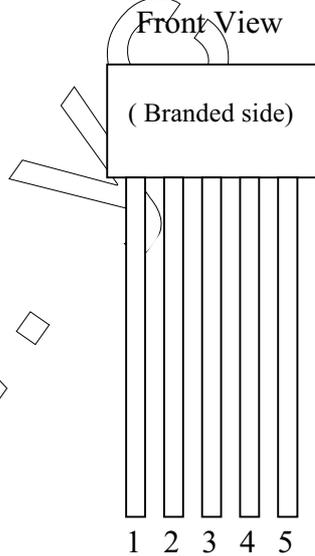
■ General Description

ATS280 is the integrated Hall sensor owned two complementary outputs for motor's coil driving, auto locked shutdown and auto restart functions. Functional block diagram includes that a regulator with temperature-compensated band-gap, an on-chip Hall voltage generator, a comparator, a Schmitt trigger and two current output drivers. The regulator can provide wide operational voltage range. The Hall voltage generator is to amplify the Hall voltage due to Hall effect. A Schmitt trigger is to provide switching Hysteresis for noise rejection. To avoid coil burning, rotor-lock detection circuit will shutdown the output driver if detect rotor-lock status. A rotation recovery circuit is to restart the motor after rotor-lock is removed. In addition, the auto re-start time is flexible by adjusting the capacitance (C_T).

■ **Block Diagram**



■ **Pin Assignments**



Symbol	P/I/O	Pin #	Description
VCC	P	1	Positive power supply
CT	I	2	Timing cap.
DO	O	3	Driver output
DOB	O	4	Driver inverted output
GND	P	5	Ground

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

Characteristics	Symbol	Rating	Unit
Internal Zener-protected Voltage	VCB	46	V
Operating Supply Voltage	$V_{CC\text{ opr}}$	20	V
Output Current	I_O (AVE)	500	mA
	I_O (PEAK)	800	
Power Dissipation	P_D	700	mW
Operating Temperature	T_{OPR}	-20~85	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~150	$^\circ\text{C}$

■ **Electrical Characteristics** ($T_A=25^\circ\text{C}$, $V_{CC}=12\text{V}$, $C_T=1\mu\text{F}$)

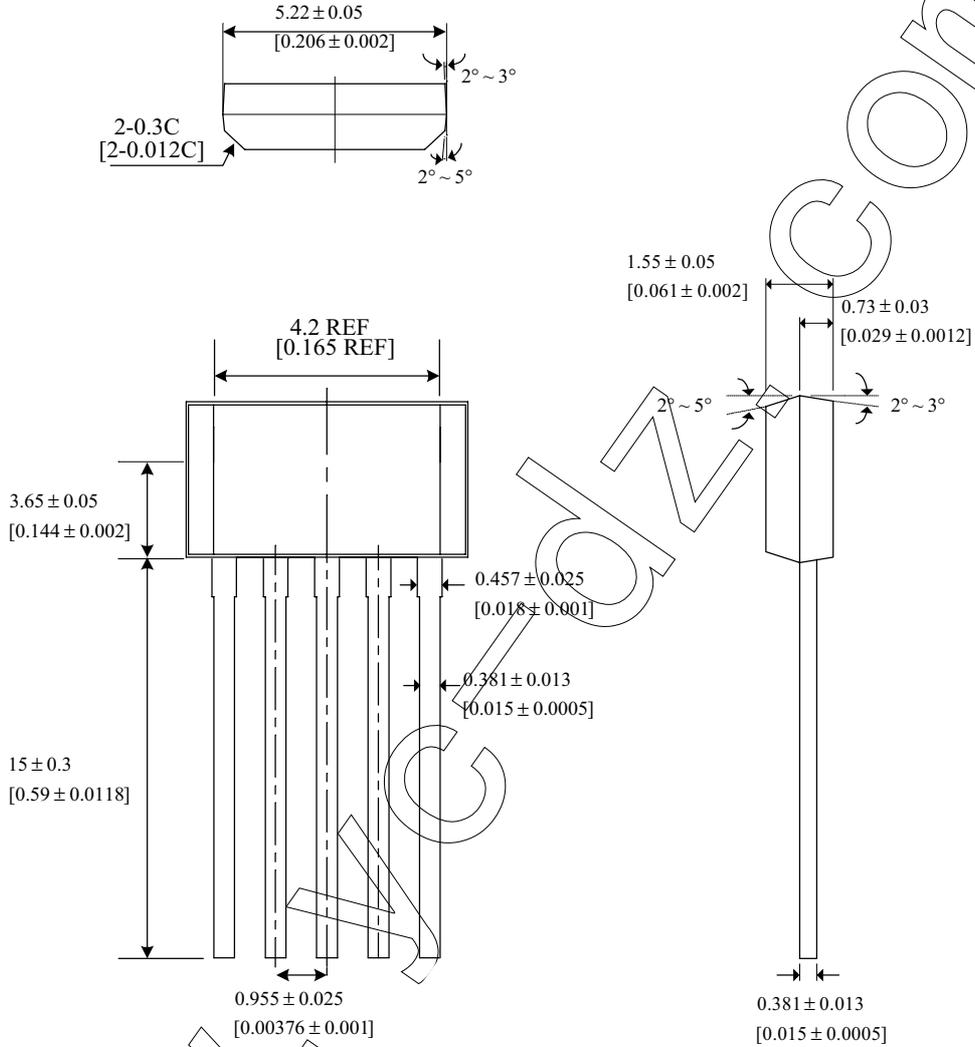
Characteristics		Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Quiescent current		I_Q	$V_{CC}=5\text{V}$ Output1 "ON"	10	15	20	mA
			$V_{CC}=12\text{V}$ Output1 "ON"	10	17	20	
Output saturation voltage	DO DOB		$I_O=0.2\text{A}$, $T_J=25^\circ\text{C}$	-	0.5	1.0	V
			$I_O=0.4\text{A}$, $T_J=25^\circ\text{C}$	-	0.9	1.5	
			$I_O=0.8\text{A}$, $T_J=25^\circ\text{C}$	-	1.0	2.0	
Automatic self-rotation recovery circuit	Charge current	I_{CT}	-	-	1.6	-	μA
	Limiting voltage	V_{CTL}	Continuous rotation	-	0.62	-	V
			Holding state	-	0.84	-	
	Recovery voltage	V_{CTR}	-	-	1.5	-	
	On time	T_{ON}	$C_T=1\mu\text{f}$	-	250	-	ms
Duty ratio	D_R	T_{OFF} / T_{ON}	4	5	6	-	

■ **Magnetic Characteristics**

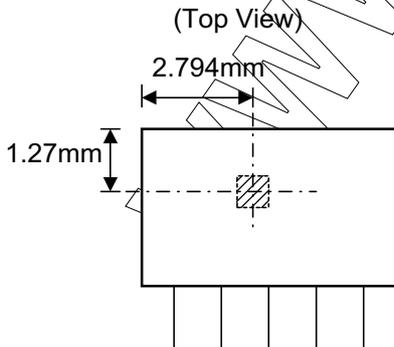
Characteristics	Symbol	$T_A = -20^\circ\text{C}$ to $+85^\circ\text{C}$			Unit	
		Min.	Typ.	Max.		
Operate Point	ATS280	B_{OP}	0	-	100	G
Release Point	ATS280	B_{RP}	-100	-	0	G
Hysteresis	ATS280	B_{HYS}	-	200	-	G

■ **Package Information**

Package Type: SIP-5L unit: mm / [inch]



■ **Location of sensing point**



■ **Marking Information**

