

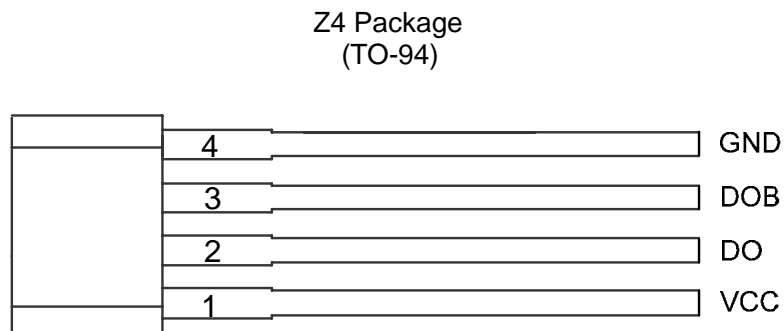
Two Phase Dual-coil High Voltage Smart Fan Motor Driver**AH9280****Pin Configuration**

Figure 2. Pin Configuration of AH9280 (Front View)

Pin Description

Pin Number	Pin Name	Function
1	VCC	Power supply pin
2	DO	Output pin 1
3	DOB	Output pin 2
4	GND	Ground pin

Two Phase Dual-coil High Voltage Smart Fan Motor Driver AH9280

Functional Block Diagram

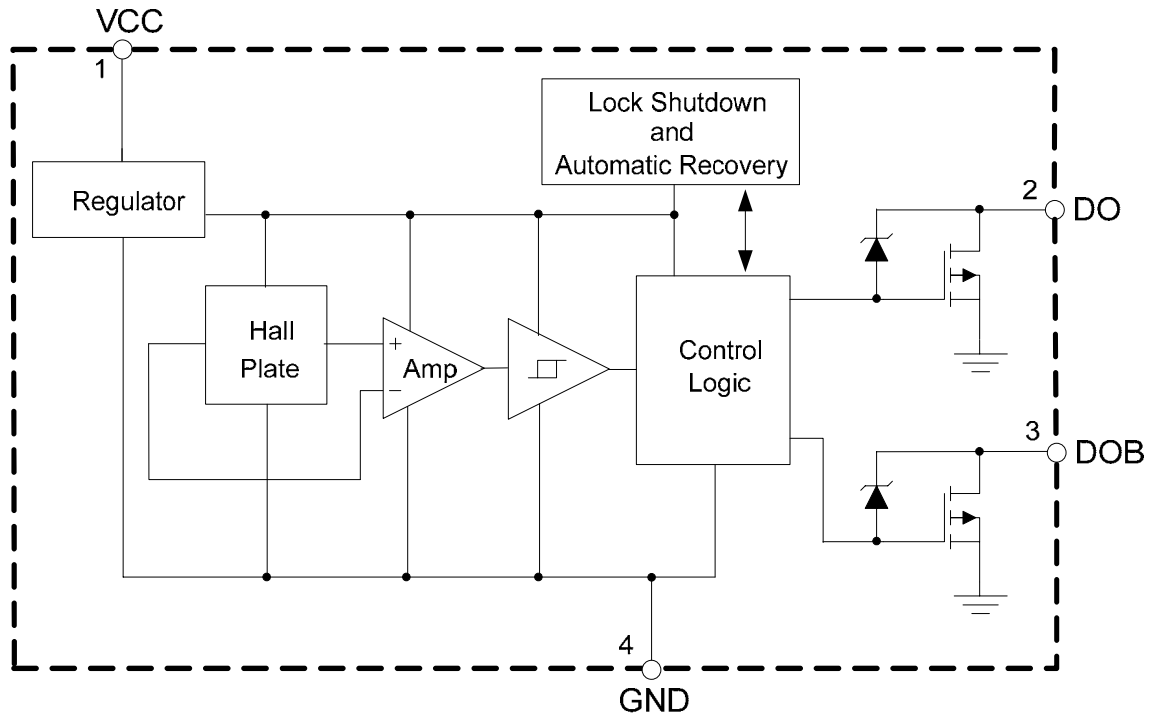
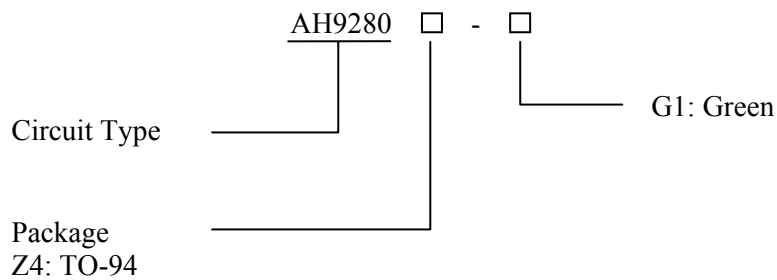


Figure 3. Functional Block Diagram of AH9280

Ordering Information



Package	Temperature Range	Part Number	Marking ID	Packing Type
TO-94	-40 to 125°C	AH9280Z4-G1	9280Z4-G1	Bulk

BCD Semiconductor's Pb-free products, as designated with "G1" suffix in the part number, are RoHS compliant and green.

**Two Phase Dual-coil High Voltage Smart Fan Motor Driver****AH9280****Absolute Maximum Ratings (Note 1, T_A=25°C)**

Parameter	Symbol	Value	Unit
Supply Voltage	V _{CC}	18	V
Peak Output Current	I _{OUT_P}	1200	mA
Continuous Output Current	I _{OUT_C}	600	mA
Supply Current (Fault)	I _{CC}	6	mA
Power Dissipation	P _D	600	mW
Thermal Resistance (Junction to Ambient)	θ _{JA}	208	°C/W
Storage Temperature	T _{STG}	-55 to 150	°C
ESD (Human Body Model)	ESD	6000	V
ESD (Machine Model)	ESD	400	V

Note 1: Stresses greater than those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under “Recommended Operating Conditions” is not implied. Exposure to “Absolute Maximum Ratings” for extended periods may affect device reliability.

Recommended Operating Conditions

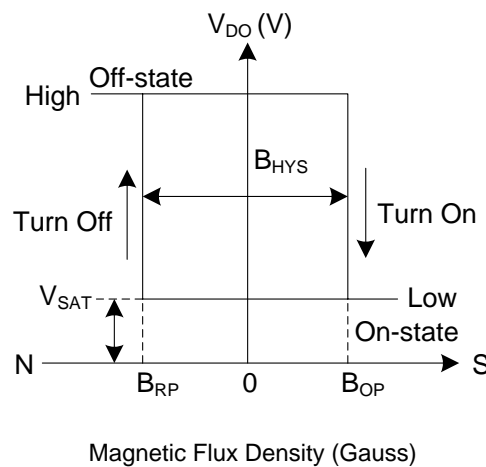
Parameter	Symbol	Min	Max	Unit
Supply Voltage	V _{CC}	2.5	16	V
Ambient Temperature	T _A	-40	125	°C

Two Phase Dual-coil High Voltage Smart Fan Motor Driver
AH9280
Electrical Characteristics
 $V_{CC}=12V$, $T_A=25^{\circ}C$, unless otherwise specified.

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Supply Voltage	V_{CC}	Operating	2.5	12	16	V
Supply Current	I_{CC}	Average		4	6	mA
Output Current	I_{OUT}				500	mA
Output Leakage Current	$I_{LEAKAGE}$			0.1	10	μA
Saturation Voltage	V_{SAT}	$I_{OUT}=350mA$		600	1000	mV
Output On Time	T_{ON}			0.8		s
Output Off Time	T_{OFF}			5		s
Output Zener Break-down Voltage	V_Z			35		V

Magnetic Characteristics
 $V_{CC}=12V$, $T_A=25^{\circ}C$, unless otherwise specified.

Parameter	Symbol	Min	Typ	Max	Unit
Operating Point	B_{OP}		20	50	Gauss
Releasing Point	B_{RP}	-50	-20		Gauss
Hysteresis	B_{HYS}		40		Gauss



Test Circuit

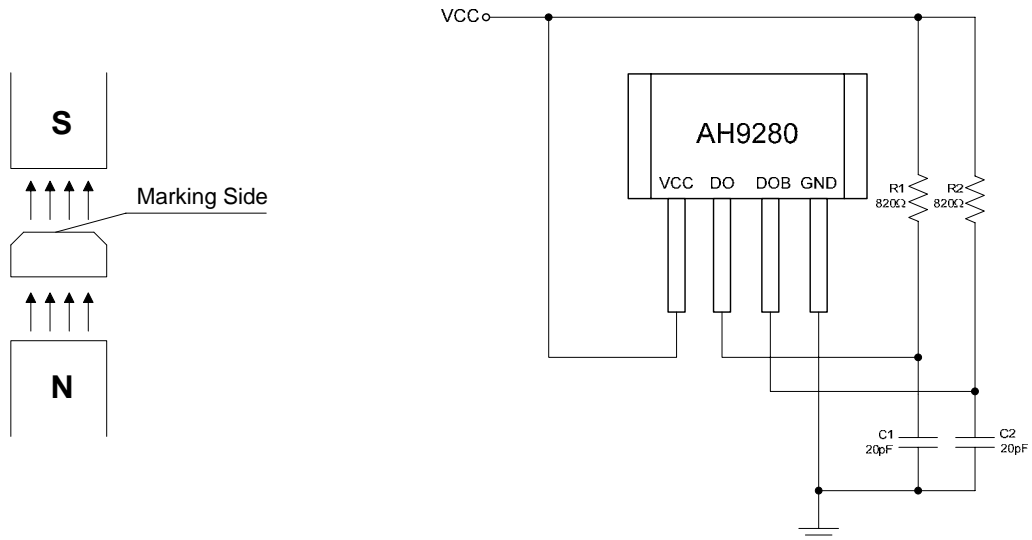


Figure 4. Basic Test Circuit of AH9280

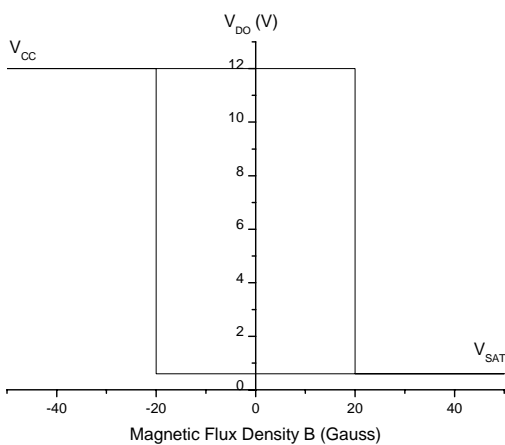


Figure 5. V_{DO} vs. Magnetic Flux Density

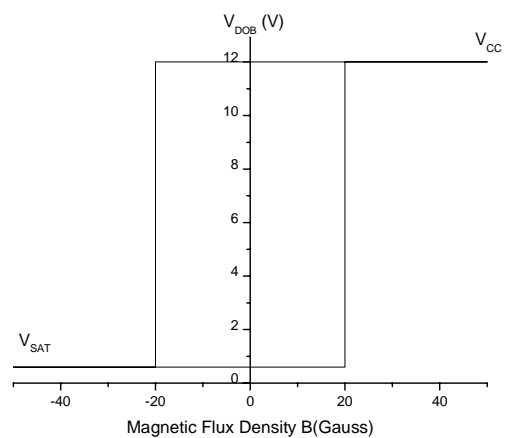


Figure 6. V_{DOB} vs. Magnetic Flux Density

Typical Performance Characteristics

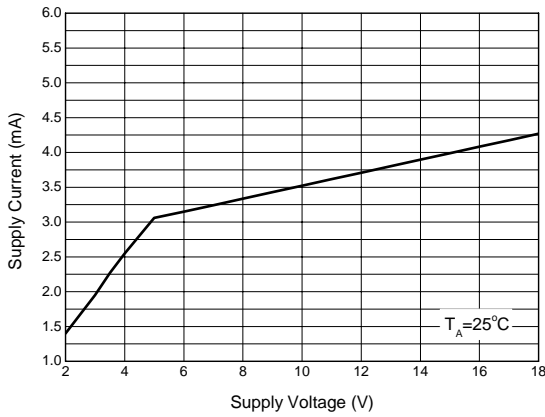


Figure 7. Supply Current vs. Supply Voltage

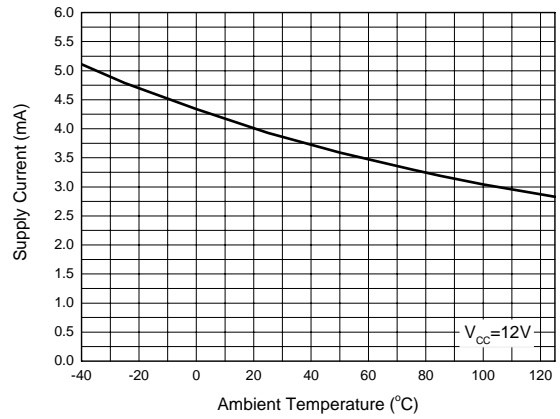


Figure 8. Supply Current vs. Ambient Temperature

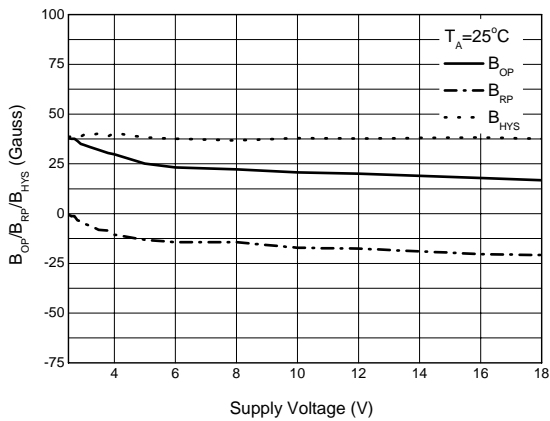


Figure 9. B_{OP}/B_{RP}/B_{HYS} vs. Supply Voltage

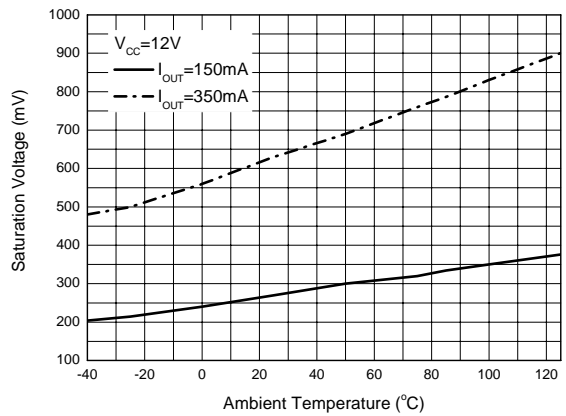


Figure 10. Saturation Voltage vs. Ambient Temperature

Typical Performance Characteristics (Continued)

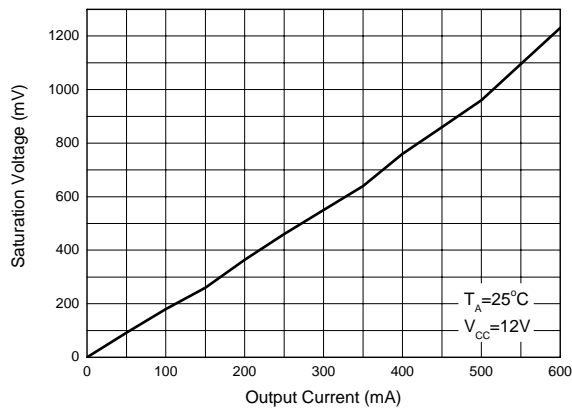


Figure 11. Saturation Voltage vs. Output Current

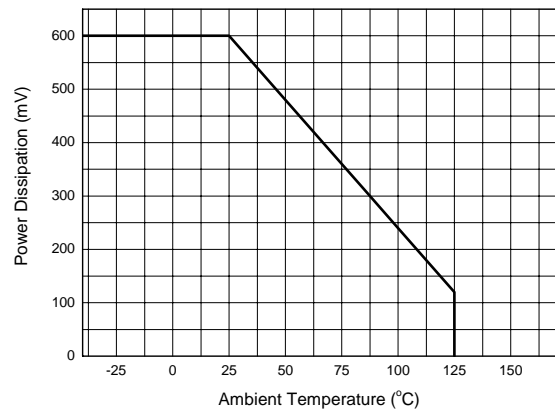


Figure 12. Power Dissipation vs. Ambient Temperature

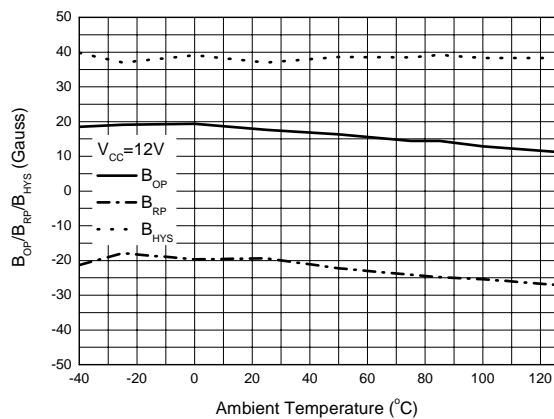


Figure 13. B_{OP}/B_{RP}/B_{HYS} vs. Ambient Temperature

Typical Application

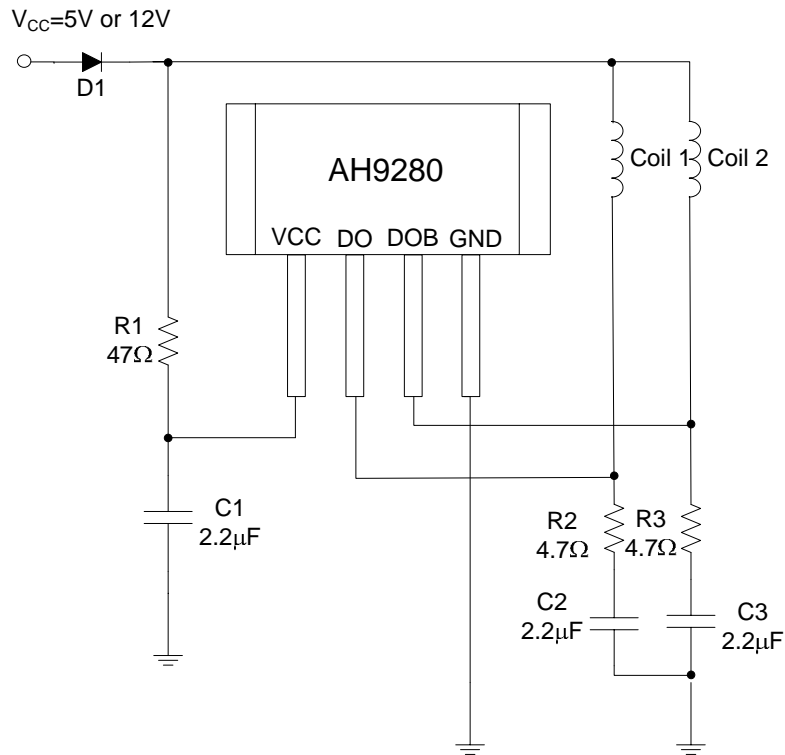


Figure 14 Typical Application 1 of AH9280 (Note 2)

Note 2:

1. D1 is an ordinary diode used to filter the noise from VCC and protect IC if VCC and GND are plugged reversed.
2. R1=47Ω typical.
3. C1=C2=C3=2.2μF typical, electrolytic capacitors are better. They should be fine tuned based on system design.
4. R2=R3=4.7Ω typical. They can be removed according to system requirement.

Typical Application (Continued)

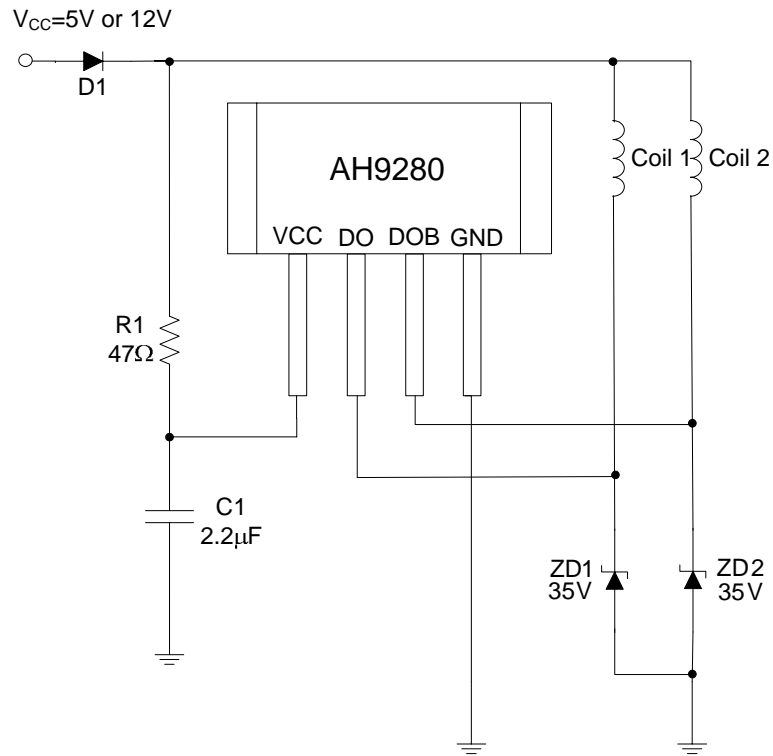


Figure 15. Typical Application 2 of AH9280 (Note 3)

Note 3:

1. D1 is an ordinary diode used to filter the noise from VCC and protect IC if VCC and GND are plugged reversed.
2. R1=47Ω typical.
3. C1 =2.2μF typical, electrolytic capacitors are better. They should be fine tuned based on system design.
4. ZD1 and ZD2 breakdown voltage are 35V.

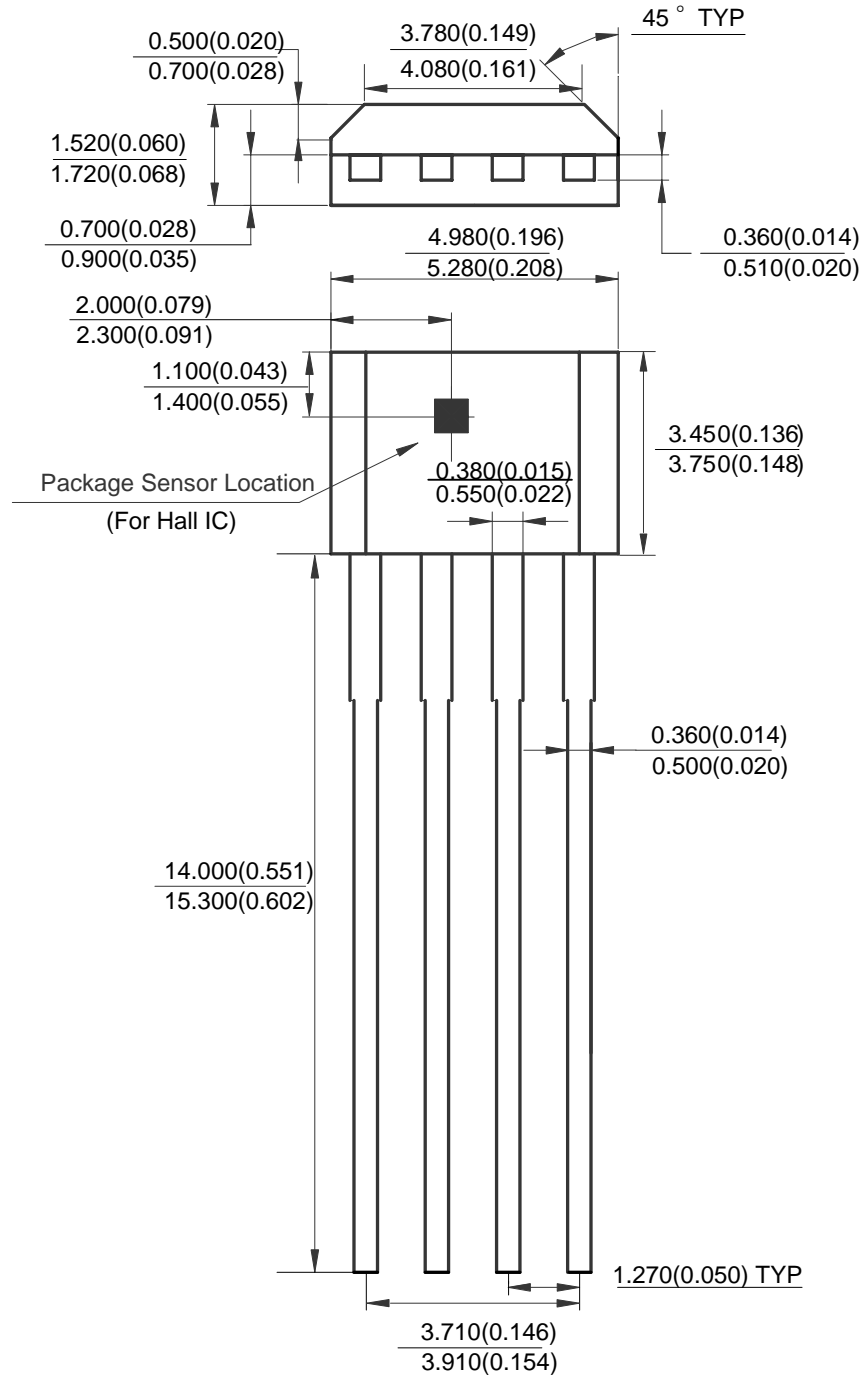
Two Phase Dual-coil High Voltage Smart Fan Motor Driver

AH9280

Mechanical Dimensions

TO-94

Unit: mm(inch)





BCD Semiconductor Manufacturing Limited

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