



UH210

Preliminary

LINEAR INTEGRATED CIRCUIT

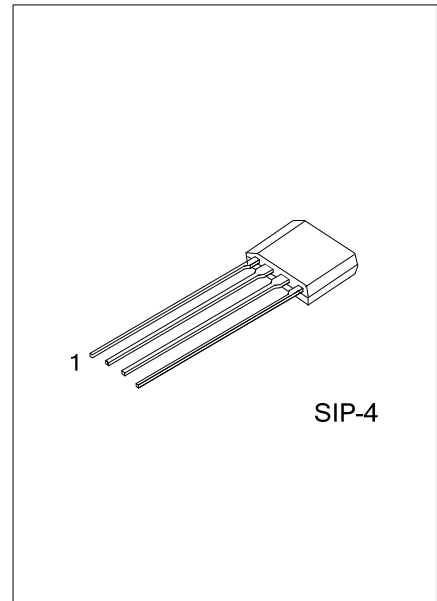
2-PHASE DC MOTOR DRIVE IC

DESCRIPTION

The UTC **UH210** is a Latch-Type Hall Effect sensor with built-in complementary output drivers. It's designed with internal temperature compensation circuit, the hysteresis Characteristic is excellent. It has built-in diode prevent reverse power fault and the application is aimed for brush-less DC Fan.

FEATURES

- * On-chip Hall Sensor
- * Wide Operating Power Range: 2.8V~20V
- * Excellent Hysteresis Characteristic
- * Built-in output driver up to 0.45A

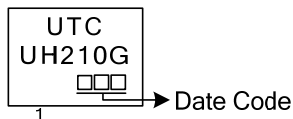


ORDERING INFORMATION

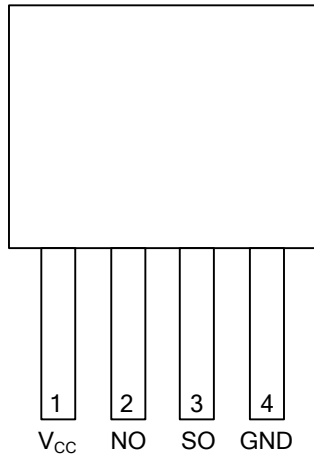
Ordering Number	Package	Packing
UH210G-G04-K	SIP-4	Bulk

<p>UH210G-G04-K</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) K: Bulk (2) G04: SIP-4 (3) G: Halogen Free and Lead Free</p>
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MARKING



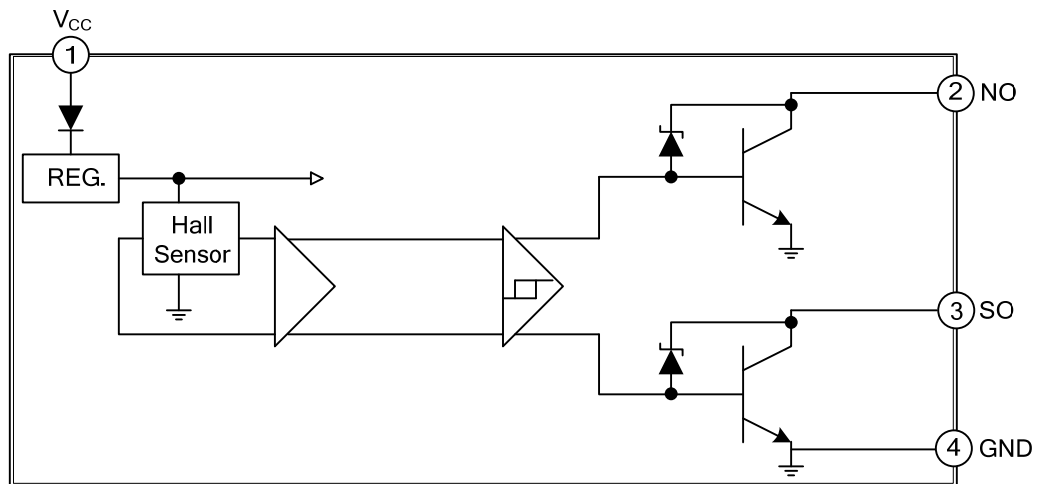
■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	V _{CC}	Power Supply
2	NO	Output pin. Low at N magnetic field
3	SO	Output pin. Low at S magnetic field
4	GND	Ground

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING

PARAMETER		SYMBOL	RATINGS	UNIT
Zener Breakdown Voltage		V_Z	35	V
NO/SO Pin Voltage			30	V
VCC Pin Voltage			20	V
Peak Sink Current	Hold Current	I_O	700	mA
	Continuous Current	I_O	450	mA
Power Dissipation	$T_A=25^\circ\text{C}$	P_D	850	mW
	$T_A=85^\circ\text{C}$	P_D	450	mW
Thermal Resistance		θ_{JA}	0.15	$^\circ\text{C}/\text{W}$
Operational Temperature Range		T_{OPR}	-20~+100	$^\circ\text{C}$
Storage Temperature Range		T_{STG}	-65~+150	$^\circ\text{C}$
Junction Temperature		T_J	+150	$^\circ\text{C}$
Lead Temperature (Soldering, 10 sec)		T_L	+230	$^\circ\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ DC ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Minimum Operating Voltage	V_{CC}	No use pin is open (Fig. 1)		2.8		V
Maximum Operating Voltage	V_{CC}	$I_{CC}<20\text{mA}$ No use pin is open (Fig. 1)		20.0		V
Quiescent Supply Current	I_{CC}	No use pin is open $V_{CC}: 3.0\text{V}\sim 20\text{V}$ (Fig. 1)		18	20	mA
NO/SO Saturation Voltage	V_{SAT}	$I_O=450\text{mA}$ (Fig. 1)			1.0	V

Note: Fig 1 The IC output state is under N magnetic field.

■ NO/SO SATURATION VOLTAGE VS. OUTPUT CURRENT(I_O) ($V_{CC}=12\text{V}$, $T_A=25^\circ\text{C}$)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Saturation Voltage	$V_{O(SAT)}$	$I_{OUT}=200\text{mA}$		0.30		V
		$I_{OUT}=300\text{mA}$		0.47		V
		$I_{OUT}=400\text{mA}$		0.66		V
		$I_{OUT}=500\text{mA}$		0.88		V
		$I_{OUT}=600\text{mA}$		1.09		V
		$I_{OUT}=700\text{mA}$		1.31		V

■ AC ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Rise Time	t_R	$R_L=100\Omega(5\text{W})$, $C_L=20\text{pF}$ (Fig 1)		10		μs
Fall Time	t_F	$R_L=100\Omega(5\text{W})$, $C_L=20\text{pF}$ (Fig 1)		300		nS

■ MAGNETIC CHARACTERISTICS ($T_A=-20\sim 100^\circ\text{C}$)

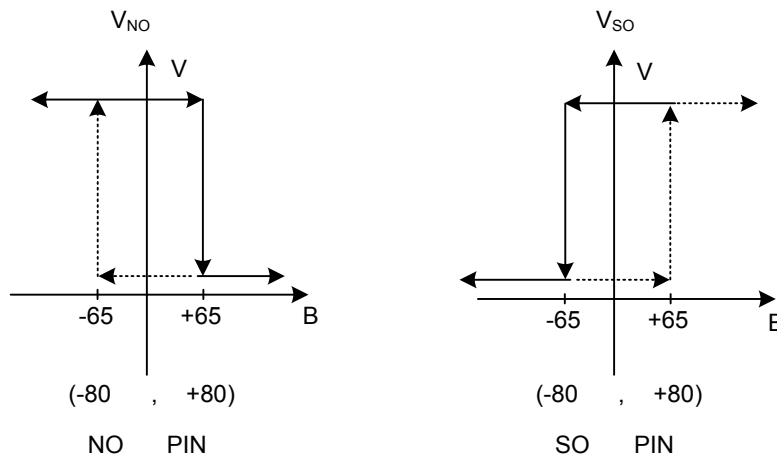
A grade

PARAMETR	SYMBOL	MIN	TYP	MAX	UNIT
Operate Point	B_{OP}	+10		+65	G
Release Point	B_{RP}	-65		-10	G
Hysteresis	B_{HYS}	20		130	G

B grade

PARAMETR	SYMBOL	MIN	TYP	MAX	UNIT
Operate Point	B_{OP}	+5		+80	G
Release Point	B_{RP}	-80		-5	G
Hysteresis	B_{HYS}	10		160	G

■ CHYSTERESIS CHARACTERISTICS



■ TEST CIRCUIT

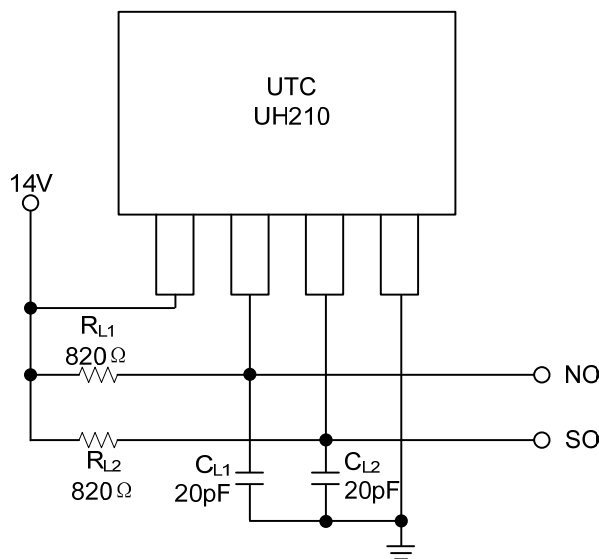
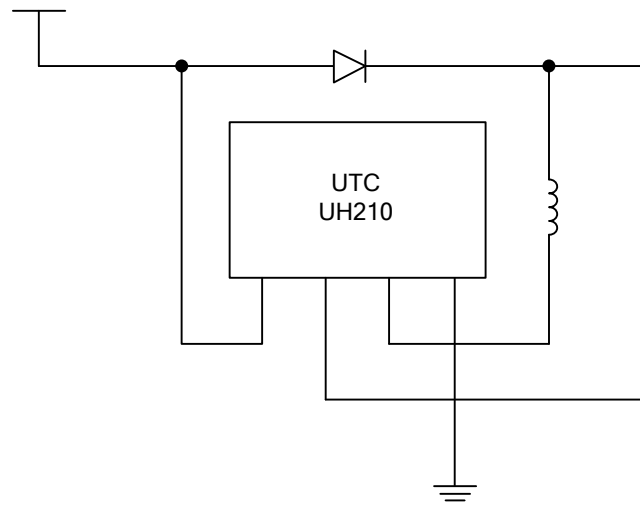


Fig. 1

■ TYPICAL APPLICATION CIRCUIT



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