



## UH200

Preliminary

LINEAR INTEGRATED CIRCUIT

### 2-PHASE DC MOTOR DRIVE IC

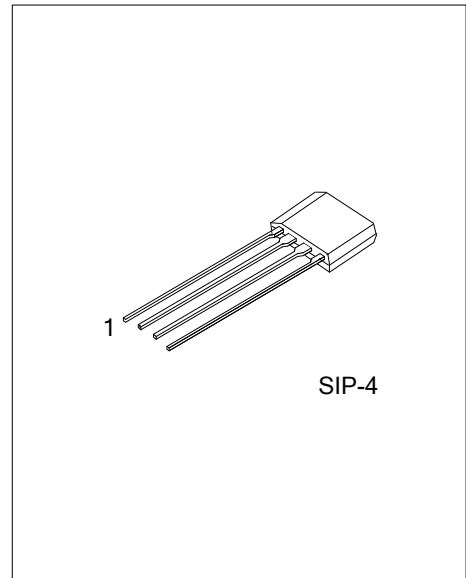
#### DESCRIPTION

The UTC **UH200** is a Latch-Type Hall Effect sensor with built-in output drivers. An internal bandgap voltage regulator is used to provide temperature compensated source and allows a wide operating supply range.

Open-collector drivers can provide a large sinking current for brush-less DC fan and Motor Driver.

#### FEATURES

- \* Wide power supply range: 2.0V~20V
- \* Built-in hall sensor/ drivers
- \* Excellent hysteresis with temperature compensation
- \* Output sink current up to 0.45A
- \* Reverse power protection

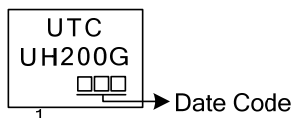


#### ORDERING INFORMATION

Ordering Number	Package	Packing
UH200G-G04-K	SIP-4	Bulk

<p>UH200G-G04-K</p>	<p>(1) K: Bulk (2) G04: SIP-4 (3) G: Halogen Free and Lead Free</p>
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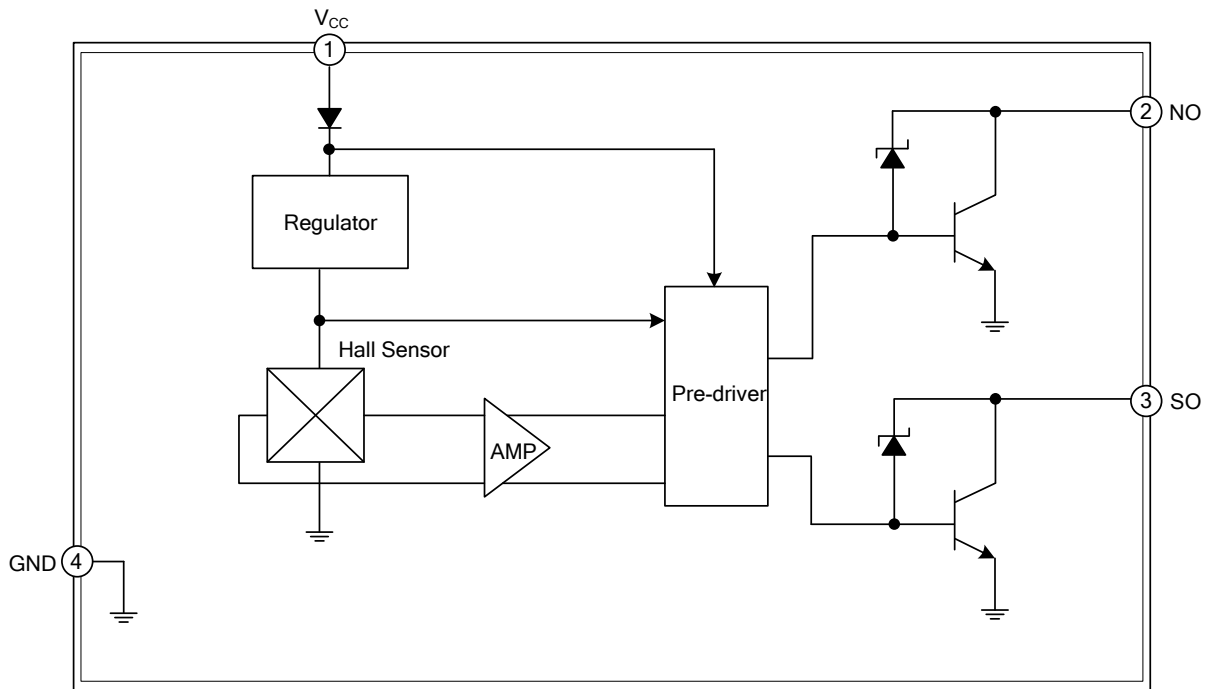
#### MARKING



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	V <sub>CC</sub>	Power Supply
2	NO	Output pin
3	SO	Output pin
4	GND	Ground

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified)

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	Peak Current	$I_O$	$1A \leq 100\mu s$	
	Continuous Current		450	mA
Power Dissipation		$P_D$	500	mW
Junction Temperature		$T_J$	+150	$^{\circ}\text{C}$
Operating Temperature Range		$T_{OPR}$	-20~+85	$^{\circ}\text{C}$
Storage Temperature		$T_{STG}$	-65~+150	$^{\circ}\text{C}$

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.

■ THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	$\theta_{JA}$	0.15	$^{\circ}\text{C}/\text{mW}$

■ DC ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Minimum Operating Voltage	$V_{CC}$	No Use Pin is Open (Fig 1)		2.0		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 $V_{CC}$ , 2.0V~20V (Fig 1)	4	16	20	mA
NO/SO Saturation Voltage	$V_{SAT}$	$I_O=450\text{mA}$ (Fig 1)			1.1	V

■ NO/SO SATURATION VOLTAGE  $V_S$ . OUTPUT CURRENT ( $I_O$ )

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
NO/SO Saturation Voltage		$V_{CC}=5\text{V}$ , $T_{EMP.}=25^{\circ}\text{C}$	$I_O=250\text{mA}$			0.37	V
			$I_O=300\text{mA}$			0.48	V
			$I_O=350\text{mA}$			0.55	V
			$I_O=400\text{mA}$			0.65	V
			$I_O=450\text{mA}$			0.76	V
			$I_O=500\text{mA}$			0.86	V

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

■ AC ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified)

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

■ MAGNETIC CHARACTERISTICS ( $T_A = -20^{\circ}\text{C} \sim +85^{\circ}\text{C}$ , unless otherwise specified)

## A grade

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Operate Point	$B_{OP}$	5		65	G
Release Point	$B_{RP}$	-65		-5	G
Hysteresis	$B_{HYS}$	10		130	G

## B grade

PARAMETER	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

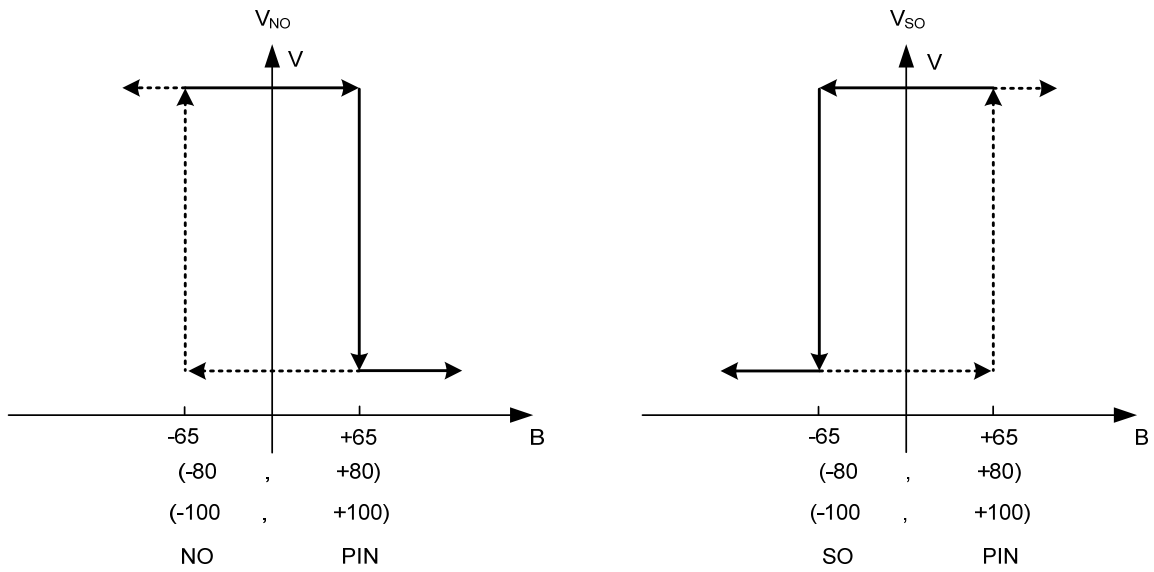
## Bu grade

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Operate Point	$B_{OP}$			80	G
Release Point	$B_{RP}$	-80			G
Hysteresis	$B_{HYS}$			160	G

## C grade

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Operate Point	$B_{OP}$			100	G
Release Point	$B_{RP}$	-100			G
Hysteresis	$B_{HYS}$			200	G

■ HYSTERESIS CHARACTERISTICS



■ TEST CIRCUIT

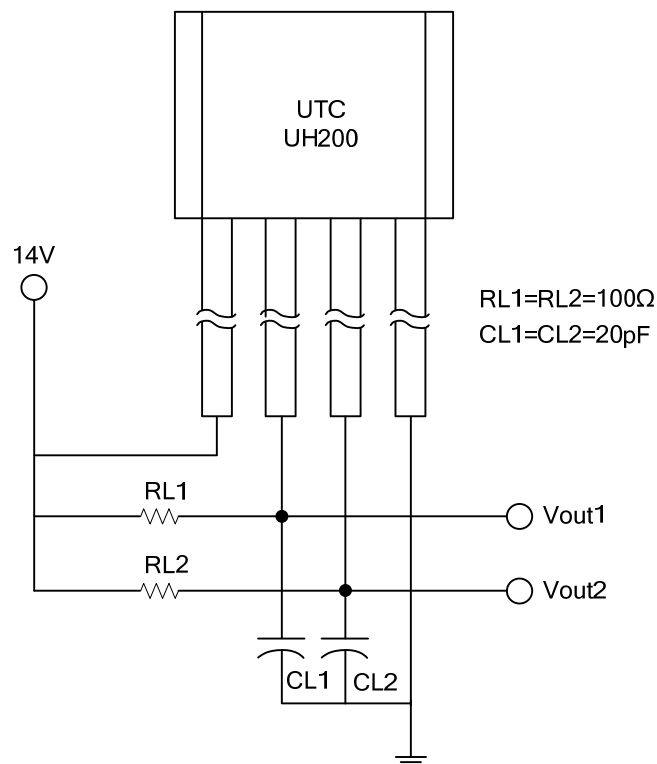
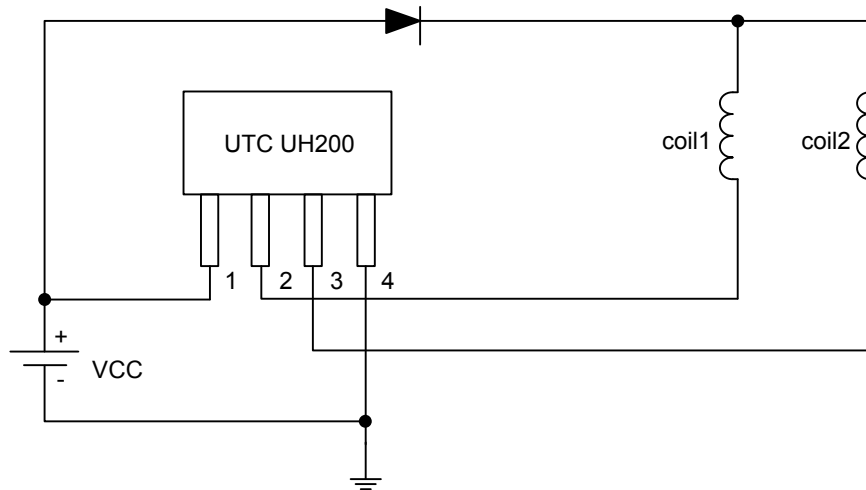


Fig 1

## ■ TYPICAL APPLICATION CIRCUIT



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