



UHC1377

Advance

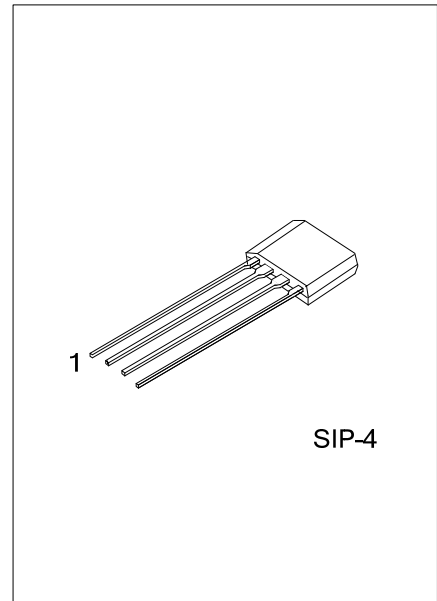
CMOS IC

COMPLEMENTARY OUTPUT HALL EFFECT FAN DRIVER

DESCRIPTION

UTC **UHC1377** is a motor driver for the brushless DC motor. It is designed by advanced CMOS process, could worked in high voltage up to 20V.

UTC **UHC1377** includes the regulator, protecting diode, Hall plate, Chopper for offset cancellation amplifier, comparator, and a pair of complementary open-Drain outputs (DO, DOB).



FEATURES

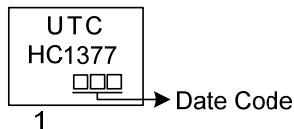
- * Built in Hall sensor
- * Wide operating voltage range: 3.5V~20V
- * Output sink current up to 0.6A
- * Built-in protecting diode only for chip reverse power connecting

ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
UHC1377L-G04-K	UHC1377G-G04-K	SIP-4	Bulk

<p>UHC1377G-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, L: Lead Free</p>
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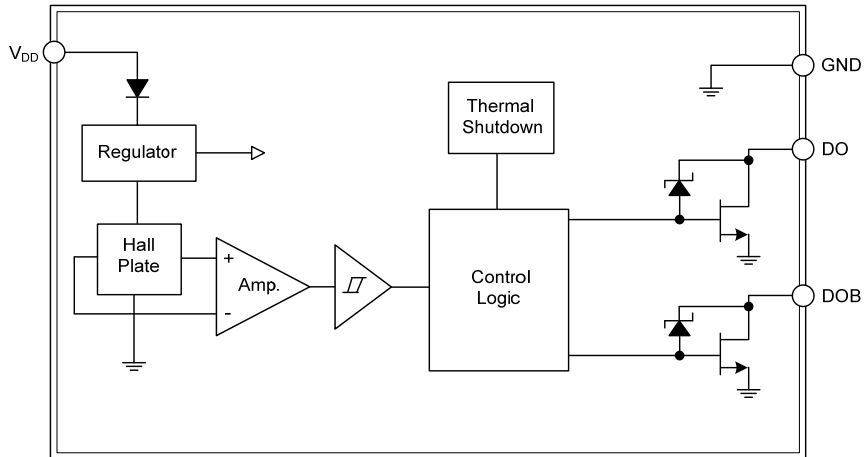
MARKING



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	V _{DD}	Supply Voltage
2	DO	Output 1
3	DOB	Output 2
4	GND	Ground.

■ BLOCK DIAGRAM



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

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	20	V
Reverse VCC Polarity Voltage	V_{RCC}	-20	V
Magnetic Flux Density	B	Unlimited	Gauss
Output Current	Continuous	600	mA
	Hold	900	mA
	Peak (start up)	1200	mA
Operating Ambient Temperature	T_A	-40 ~ +85	$^{\circ}\text{C}$
Storage Temperature Range	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 DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	250	$^{\circ}\text{C}/\text{W}$

■ ELECTRICAL CHARACTERISTICS ($V_{DD}=12\text{V}$, $T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V_{DD}	Operating	3.5		20	V
Supply Current	I_{DD}	Operating		3.5	5	mA
Output Leakage Current	I_{OFF}	$V_{OUT}=12\text{V}$		< 0.1	10	μA
Output On Resistance	$R_{DS(ON)}$	$I_{OUT}=300\text{mA}$		0.8		Ω
Output Clamping Voltage	V_Z	DO, DOB		32		V
Thermal Shutdown Temp	T_{SD}		150			$^{\circ}\text{C}$
Thermal Shutdown Hysteresis	T_{SH}			30		$^{\circ}\text{C}$

■ MAGNETIC PARAMETER

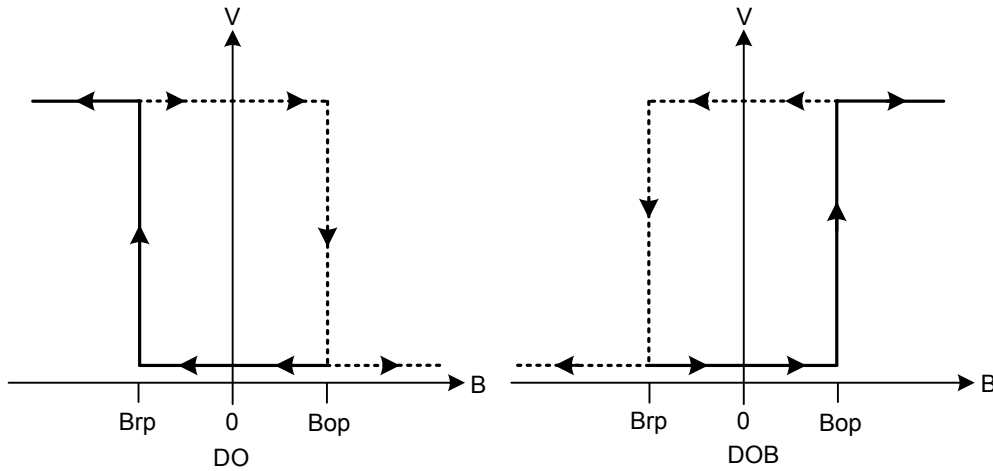
PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Operate Point	B_{OP}	5	25	50	Gauss
Release Point	B_{RP}	-50	-25	-5	Gauss
Hysteresis	B_{HYS}		50		Gauss

■ OUTPUT vs. MAGNETIC POLE

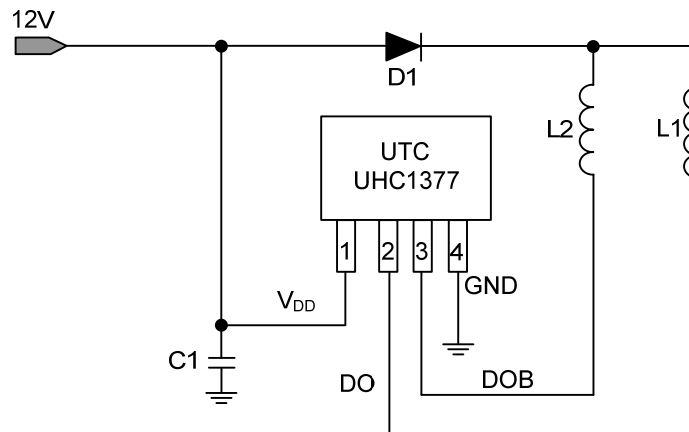
PARAMETER	TEST CONDITIONS	DO	DOB
North pole	$B < B_{RP}$	H	L
South pole	$B < B_{OP}$	L	H

Note: The magnetic pole is applied facing the branded side of the package

■ TEST CIRCUIT



■ TYPICAL APPLICATION CIRCUIT



12V brush-less DC fan

- Notes: 1. C1 (Optional) is for power stabilization, Recommended E-Cap 1 μ F/50V
- 2. D1 (Optional) is a reverse protect diode.

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