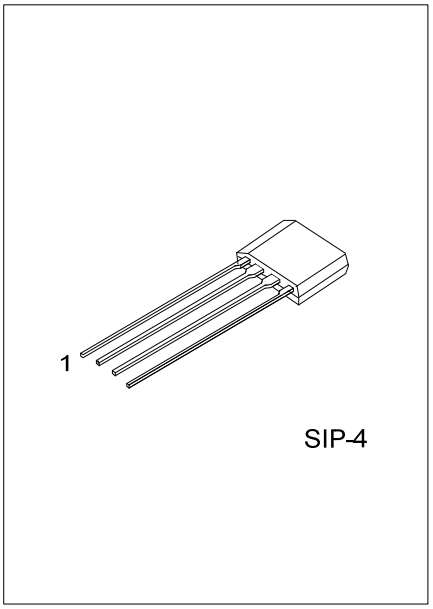
UH276

LINEAR INTEGRATED CIRCUIT

COMPLEMENTARY OUTPUTS HALL EFFECT LATCH IC



■ DESCRIPTION

The UTC **UH276** is a Latch-Type Hall Effect sensor with built-in complementary output drivers. It's designed with internal temperature compensation circuit and built-in protection diode prevent reverse power fault. The application is aimed for brush-less DC Fan

The **UH276** Outputs operate as the Hysteresis Characteristics. The Outputs alternately ON and OFF when either the magnetic flux density larger than threshold B_{OP} or the magnetic flux density lower than B_{RP}.

■ FEATURES

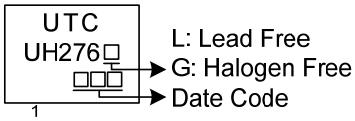
* Widen Power Supply range from **3**V ~ 20V.
* On-chip Hall sensor with excellent hysteresis.
* Open Collector outputs had the sinking capability up to 400mA.
* Output Clamping Diodes reduce the peak output voltages during switching.
* Build-in reverse protection diode.

■ ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
UH276L-G04-K	UH276G-G04-K	SIP-4	Bulk

UH276G-G04-K (1)Packing Type (2)Package Type (3)Green Package	 (1) K: Bulk (2) G04: SIP-4 (3) G: Halogen Free and Lead Free, L: Lead Free

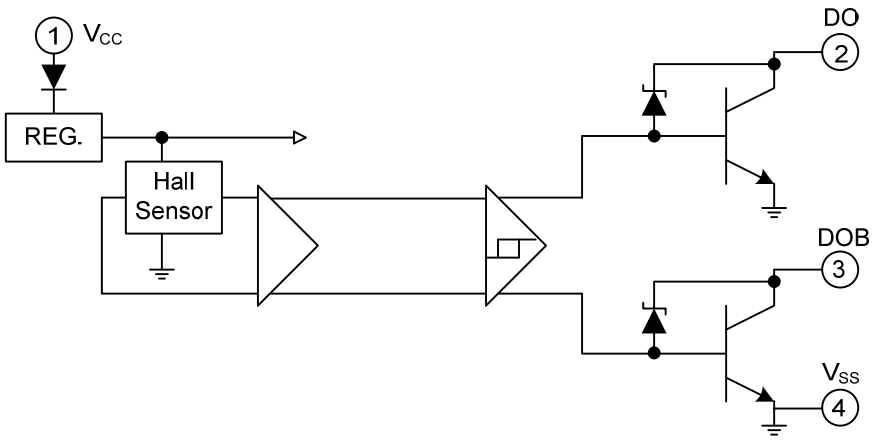
■ MARKING



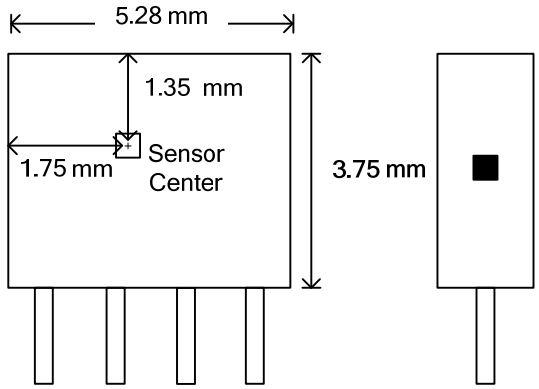
■ PIN DESCRIPTION

PIN NO.	PIN NAME	P/I/O	DESCRIPTION
1	V_{CC}	P	Positive Power Supply
2	DO	O	Output Pin
3	DOB	O	Output Pin
4	V_{SS}	P	Ground

■ BLOCK DIAGRAM



■ SENSOR LOCATIONS



■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		V_{CC}	20	V
Reverse V_{CC} Polarity Voltage		V_{RCC}	-25	V
Output OFF Voltage (Note 2)		V_{CE}	27	V
Magnetic flux density		B	Unlimited	
Output ON Current	Continuous	I_C	0.4	A
	Hold		0.5	A
	Peak (Start Up)		0.7	A
Power Dissipation		P_D	500	mW
Junction Temperature		T_J	+150	°C
Operating Temperature		T_{OPR}	-20 ~ +85	°C
Storage Temperature		T_{STG}	-65 ~ +150	°C

Notes: 1. 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.
2. Output Zener protection voltage.

■ ELECTRICAL CHARACTERISTICS (T_A =25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Low Supply Voltage	V_{CE}	V_{CC}=3.5V, I_L=100mA			0.6	V
Supply Voltage	V_{CC}		3		20	V
Output Saturation Voltage	$V_{CE(SAT)}$	V_{CC}=14V, I_L=400mA		0.6	0.9	V
Output Leakage Current	I_{CEX}	V_{CE}=14V, V_{CC}=14V		<0.1	10	μA
Supply Current	I_{CC}	V_{CC}=20V, Output Open		15	25	mA
Output Rise Time	t_R	V_{CC}=14V, R_L=820Ω, C_L=20pF		0.3	3	μS
Output Falling Time	t_F	V_{CC}=14V, R_L=820Ω, C_L=20pF		0.04	1	μS
Switch Time Differential	Δt	V_{CC}=14V, R_L=820Ω, C_L=20pF		0.3	3	μS

■ MAGNETIC CHARACTERISTICS

A grade

PARAMETR	SYMBOL	MIN	TYP	MAX	UNIT
Operate Point	B_{OP}	10		50	G
Release Point	B_{RP}	-50		-10	G
Hysteresis	B_{HYS}	20		100	G

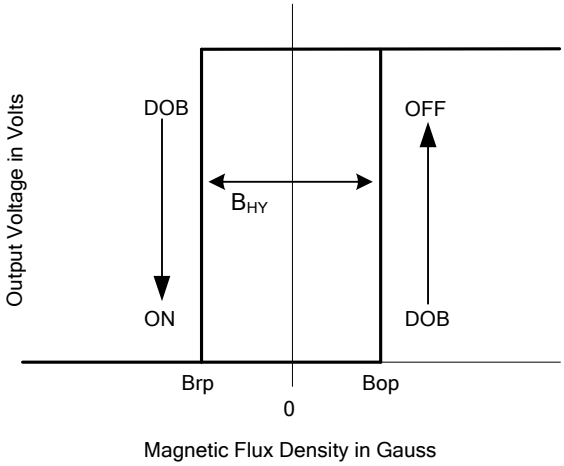
B grade

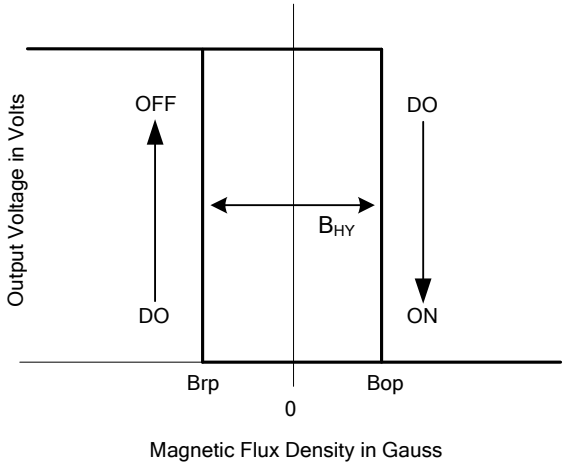
PARAMETR	SYMBOL	MIN	TYP	MAX	UNIT
Operate Point	B_{OP}	5		70	G
Release Point	B_{RP}	-70		-5	G
Hysteresis	B_{HYS}	20		140	G

C grade

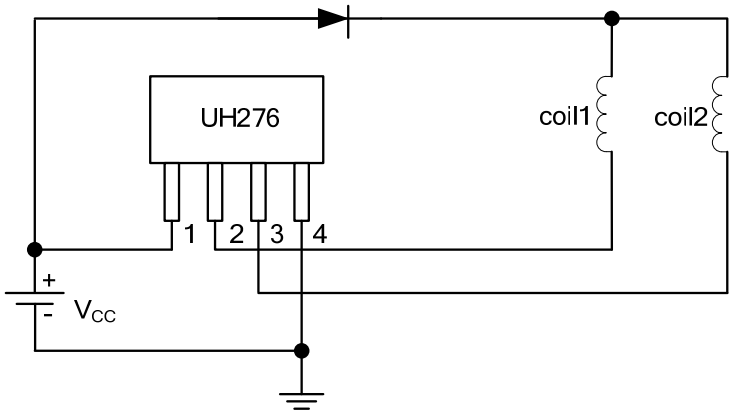
PARAMETR	SYMBOL	MIN	TYP	MAX	UNIT
Operate Point	B_{OP}			100	G
Release Point	B_{RP}	-100			G
Hysteresis	B_{HYS}	20		200	G

■ CHYSTERESIS CHARACTERISTICS





■ TYPICAL APPLICATION CIRCUIT



■ TEST CIRCUIT