



UH378

LINEAR INTEGRATED CIRCUIT

COMPLEMENTARY OUTPUTS HALL EFFECT LATCH IC

DESCRIPTION

The UTC **UH378** is a Latch-Type Hall Effect sensor with built-in complementary output drivers. It's composed of internal temperature compensation circuit and built-in protection diode to prevent reverse power fault. It is aimed for brush-less DC Fan.

The outputs of the **UH378** operate as the Hysteresis Characteristics. The Outputs alternately switch between ON and OFF when either the magnetic flux density is larger than threshold B_{OP} or the magnetic flux density is lower than B_{RP} .

FEATURES

- * Widen Power Supply range from 3V ~ 20V.
- * On-chip Hall sensor with excellent hysteresis.
- * Build-in reverse protection diode.
- * TTL and MOS IC are directly drivable by the output
- * The life is semi permanent because it employs contact-less parts

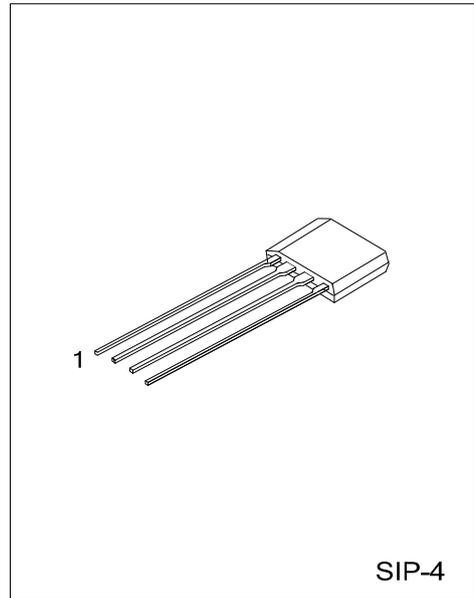
ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
UH378L-G04-K	UH378G-G04-K	SIP-4	Bulk

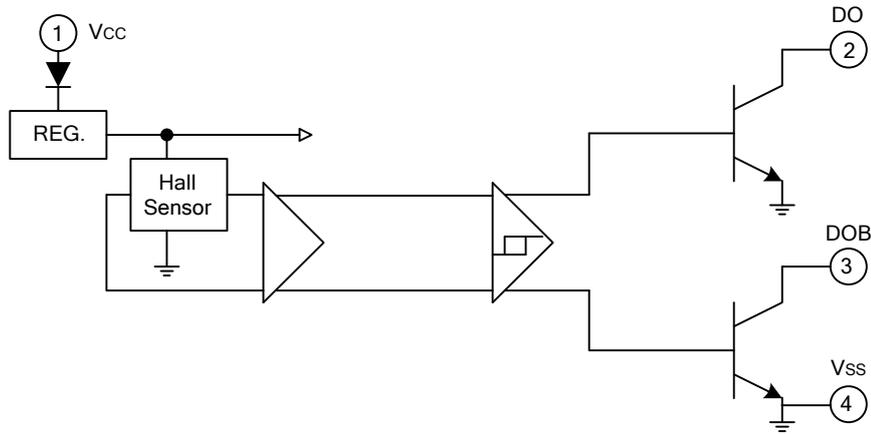
<p>UH378L-G04-K</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Lead Free</p>	<p>(1) K: Bulk</p> <p>(2) G04: SIP-4</p> <p>(3) G: Halogen Free, L: Lead Free</p>
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PIN DESCRIPTION

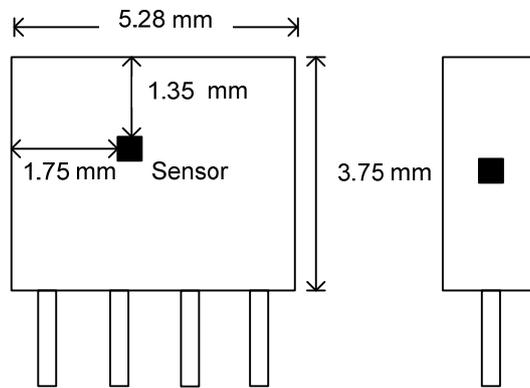
PIN NO.	PIN NAME	P/I/O	DESCRIPTION
1	V_{CC}	P	Positive Power Supply
2	DO	O	Output Pin
3	DOB	O	Output Pin
4	V_{SS}	P	Ground



■ BLOCK DIAGRAM



■ SENSOR LOCATIONS



■ ABSOLUTE MAXIMUM RATING (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V _{CC}	20	V
Reverse V _{CC} Polarity Voltage	V _{RCC}	-25	V
Circuit Current	I _O	20	mA
Magnetic flux density	B	Unlimited	
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

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.

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Low-Level Output Voltage	V _{OL}	V _{CC} = 14V, I _{OUT} =5mA	-	0.5	0.7	V
		V _{CC} = 3.6V, I _{OUT} =5mA		0.4	0.7	
Output Leakage Current	I _{CEX}	V _{CC} =14V	-	1	10	uA
Supply Current	I _{CC}	V _{CC} =14V	-	4.7	5	mA
		V _{CC} =3.6V		4.6	5	
Output Switching Time	t _R	V _{CC} =14V, R _L =10KΩ, C _L =10pF	-	-	5	us
	t _F	V _{CC} =14V, R _L =10KΩ, C _L =10pF			2	

■ MAGNETIC CHARACTERISTICS

A grade

PARAMETR	SYMBOL	MIN	TYP	MAX	UNIT
Operate Point	B _{OP}	5		50	G
Release Point	B _{RP}	-50		-5	G
Hysteresis	B _{HYS}	20		100	G

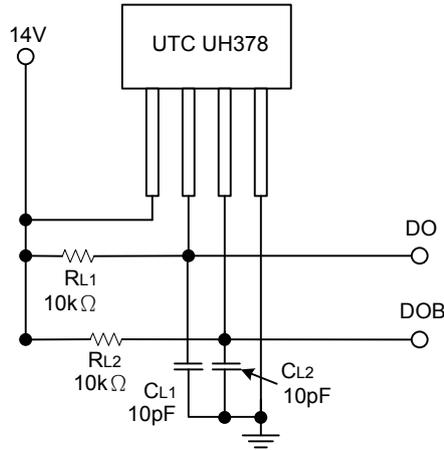
B grade

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

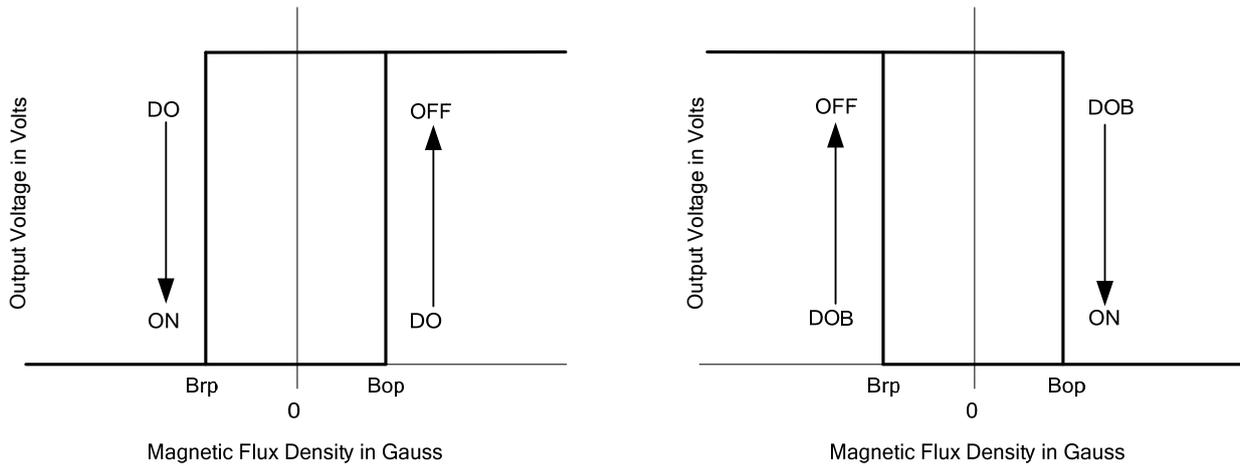
C grade

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

■ TEST CIRCUIT



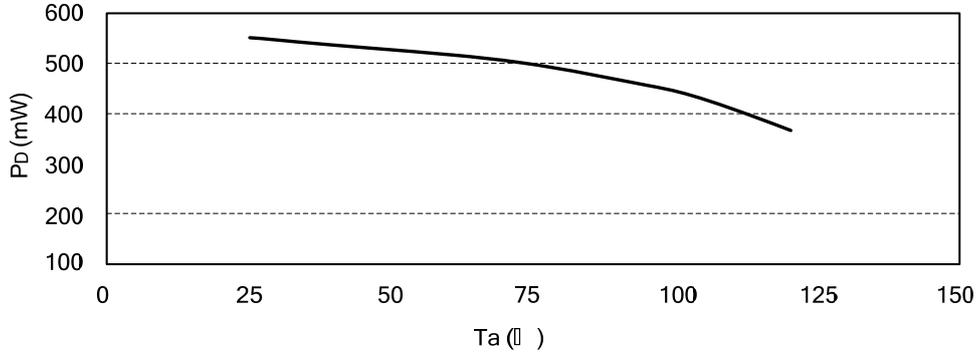
■ CHYSTERESIS CHARACTERISTICS



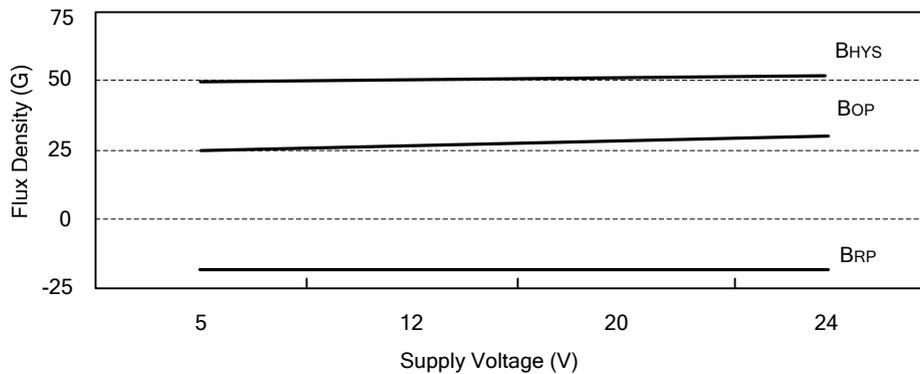
■ PERFORMANCE CHARACTERISTICS

Ta(°C)	25	50	60	70	80	85	90	95	100	105	110	115	120
P _D (mW)	550	525	515	505	485	475	465	455	445	425	405	385	365

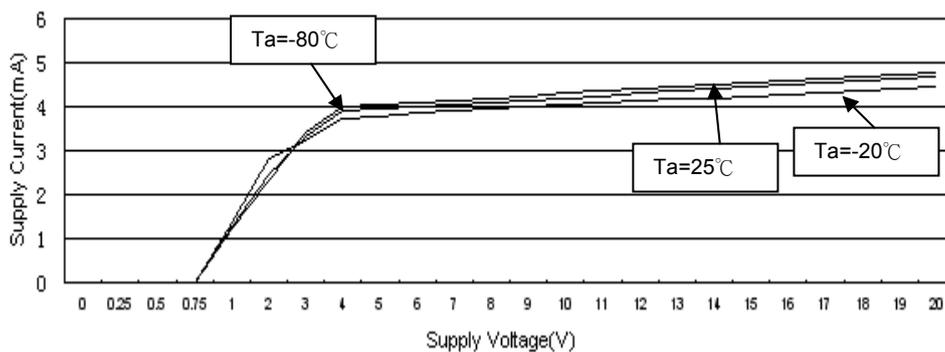
Power Dissipation Curve



Typical Magnetic Switch Point vs. Supply Voltage



Typical Supply Current vs. Supply Voltage



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