



UH378

LINEAR INTEGRATED CIRCUIT

COMPLEMENTARY OUTPUTS HALL EFFECT LATCH IC

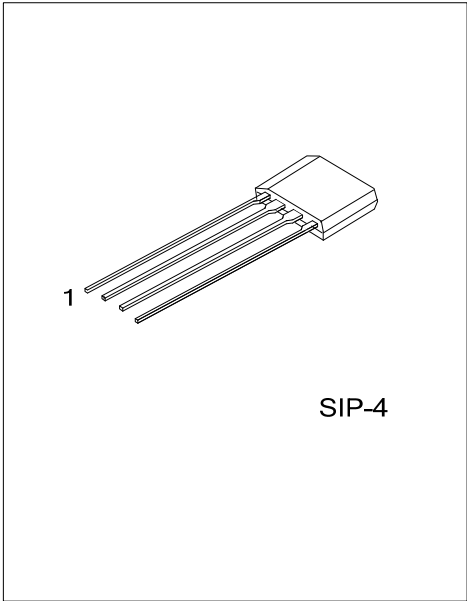
DESCRIPTION

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

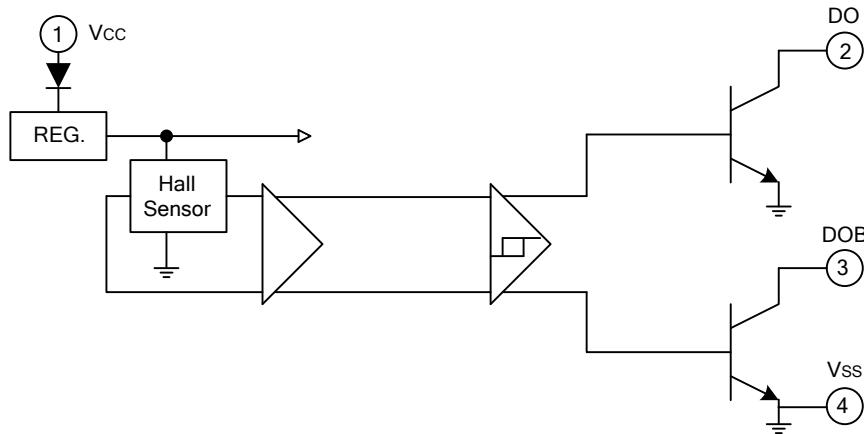
Ordering Number		Package	Packing
Lead Free	Halogen Free		
UH378L-x-G04-K	UH378G-x-G04-K	SIP-4	Bulk

UH378L-x-G04-K 	(1) Packing Type (2) Package Type (3) Magnetic characteristics (4) Lead Free	(1) K: Bulk (2) G04: SIP-4 (3) x: refer to Magnetic characteristics (4) G: Halogen Free, L: Lead Free
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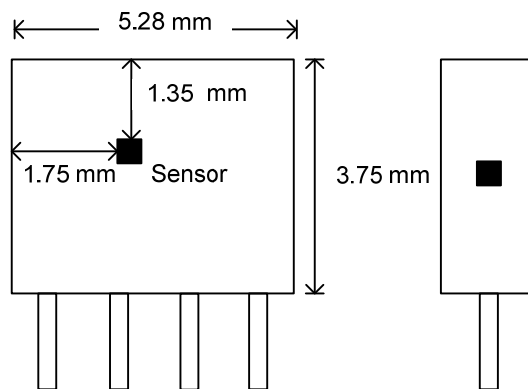
PIN DESCRIPTION

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** ($T_A = 25^\circ\text{C}$, unless otherwise specified)

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	$^\circ\text{C}$
Operating Temperature	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.

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Low-Level Output Voltage	V_{OL}	$V_{CC} = 14\text{V}, I_{OUT}=5\text{mA}$		0.5	0.7	V
		$V_{CC} = 3.6\text{V}, I_{OUT}=5\text{mA}$		0.4	0.7	
Output Leakage Current	I_{CEX}	$V_{CC} = 14\text{V}$		1	10	μA
Supply Current	I_{CC}	$V_{CC} = 14\text{V}$		4.7	10	mA
		$V_{CC} = 3.6\text{V}$		4.6	10	
Output Switching Time	t_R	$V_{CC} = 14\text{V}, R_L=10\text{K}\Omega, C_L=10\text{pF}$			5	us
	t_F	$V_{CC} = 14\text{V}, R_L=10\text{K}\Omega, C_L=10\text{pF}$			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

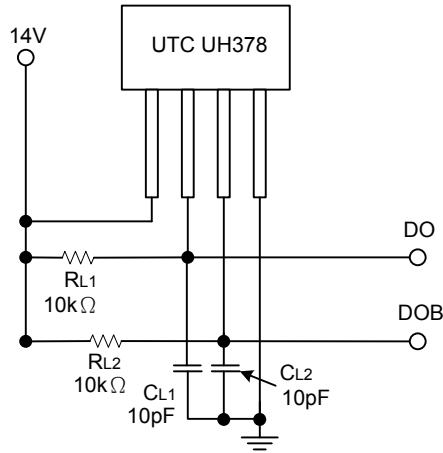
B grade

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

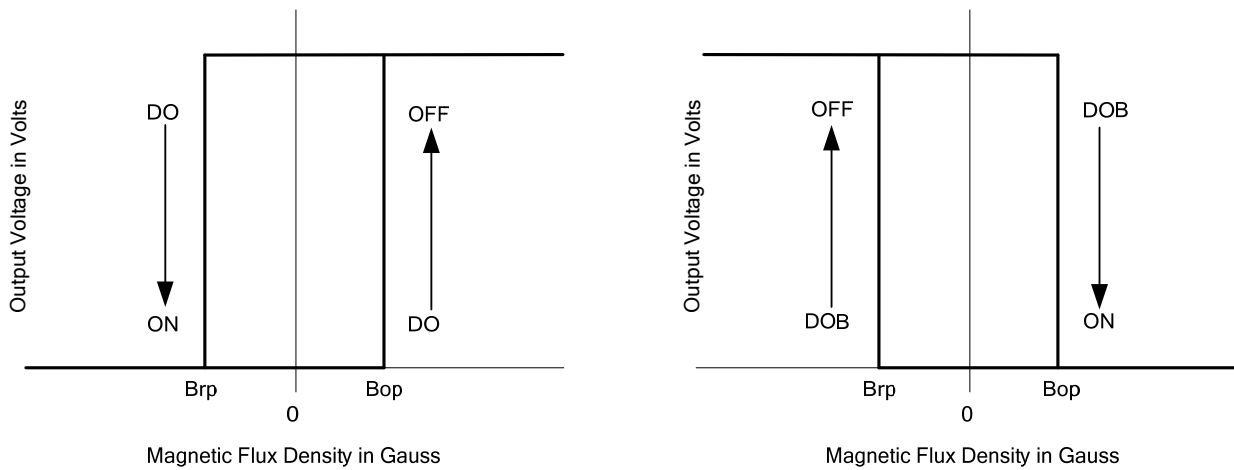
C grade

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

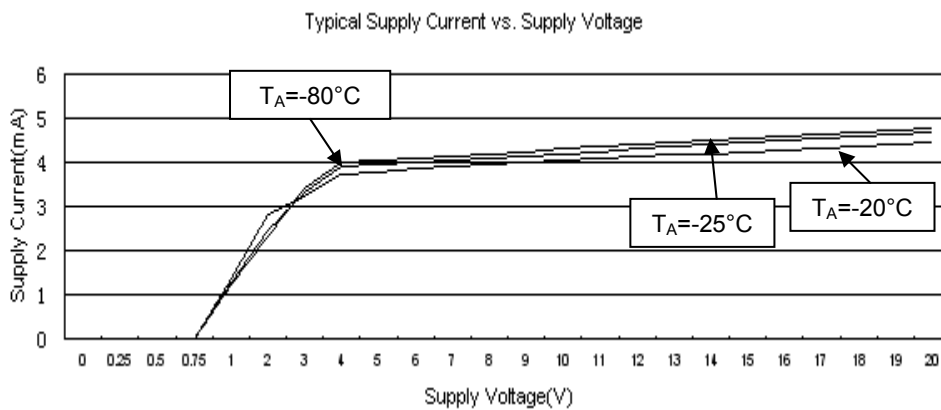
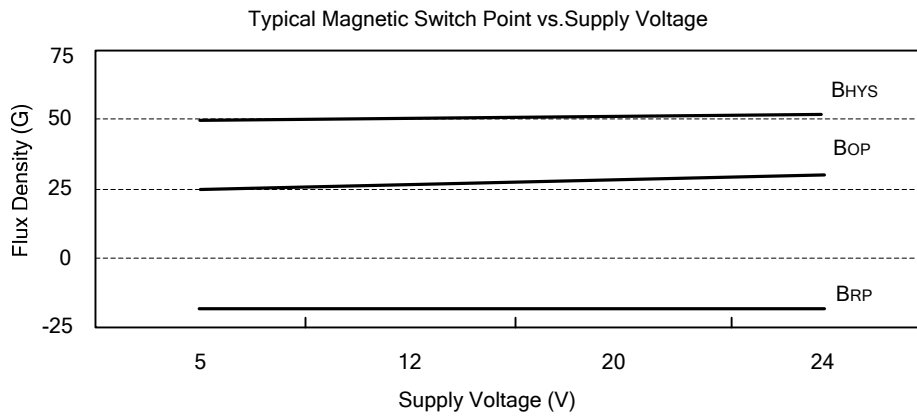
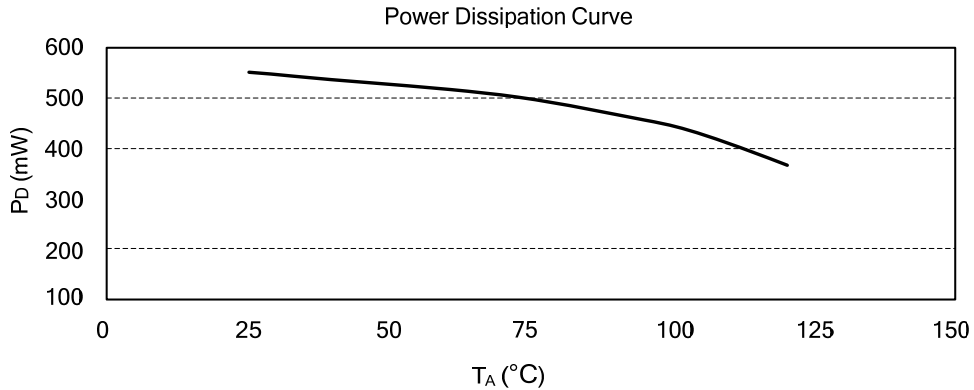


■ CHYSTERESIS CHARACTERISTICS



■ PERFORMANCE CHARACTERISTICS

$T_A(^{\circ}C)$	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



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