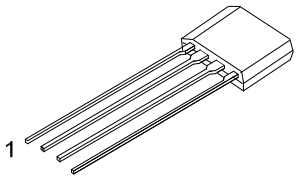
HIGH SENSITIVITY HALL EFFECT SENSOR IC WITH FG OUTPUT



SIP-4

Lead-free: H1277L
Halogen-free: H1277G

■ DESCRIPTION

The UTC **H1277** is a semiconducting integrated Hall Effect Sensor IC.

It is just like all the hall sensitive Hall Effect Sensors designed to work in the situations which the accurate track is extremely small and the changes in magnetic flux density-changes are generally too small to be operated.

Besides those features shared in all Hall Effect Sensors, **H1277** can apply to various kinds of applications, such as contact-less switches, motion detectors, gear tooth sensors, proximity detectors, and electric communication of DC brushless motors, etc.

■ FEATURES

* Hall Sensor On-Chip
* Output Zener Diodes to Clamp the Peak Output Voltage
* Frequency Generation Output
* High Output Sinking Capability (nearly to 400mA)
* High Sensitivity Hall Effect Sensor IC: ±65G

■ ORDERING INFORMATION

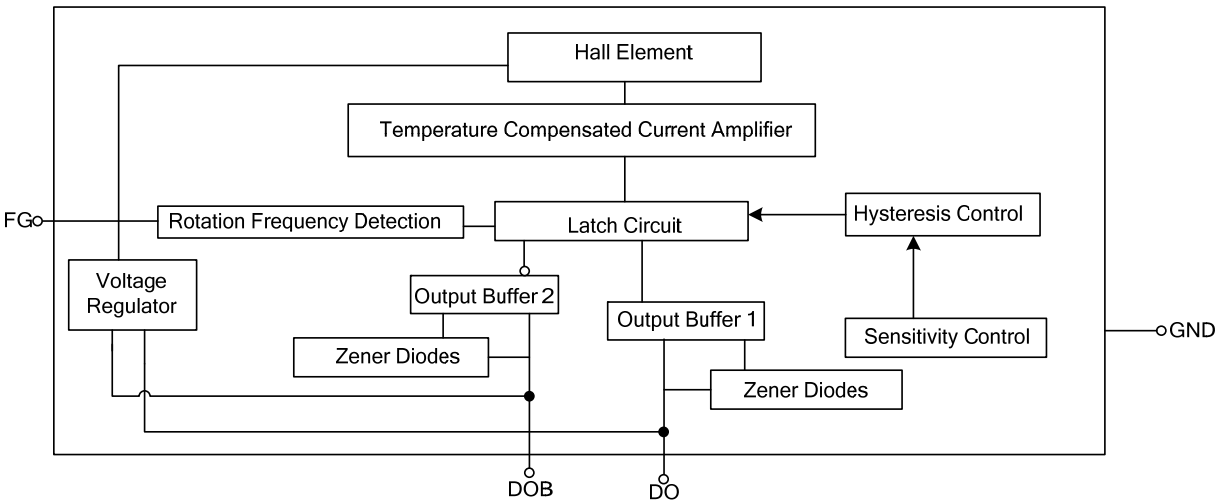
Ordering Number			Package	Packing
Normal	Lead Free Plating	Halogen Free		
H1277-G04-K	H1277L-G04-K	H1277G-G04-K	SIP-4	Bulk

H1277L-G04-K (1)Packing Type (2)Package Type (3)Lead Plating	(1) B: Bulk (2) G04: SIP-4 (3) G: Halogen Free, K: Lead Free, Blank: Pb/Sn

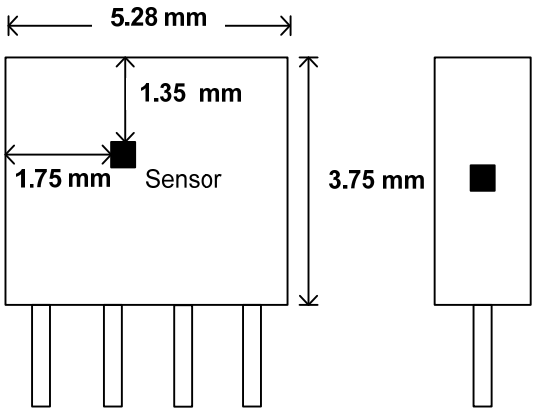
■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	FG	Open collector pin: for rotation frequency detection
2	DO	Coil output or power input
3	DOB	Coil output or Power input
4	GND	IC ground

■ BLOCK DIAGRAM



■ SENSOR LOCATIONS



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

PARAMETER	SYMBOL	RATINGS	UNITS
Supply Voltage (DO/DOB Voltage)	V_{CC}	25	V
FG Pin Off Voltage	V_{OFF}	25	V
FG Sink Current	I_{FG}	10	mA
Output Current	I_{OUT}	500	mA
Power Dissipation	P_D	500	mW
Junction Temperature	T_J	-20 ~ +150	°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.

■ RECOMMENDED OPERATING CONDITIONS (T_a=25°C,unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNITS
Supply voltage (DO/DOB Voltage)	V_{CC}	3.7~20	V
Maximum FG Pin Off Voltage	V_{OFF}	20	V
Maximum Output Sink Current	I_{OUT}	400	mA
Maximum FG Sink Current	I_{FG}	5	mA
Junction Temperature	T_J	-20~ +125	°C
Operating Temperature	T_{OPR}	-20 ~ +70	°C

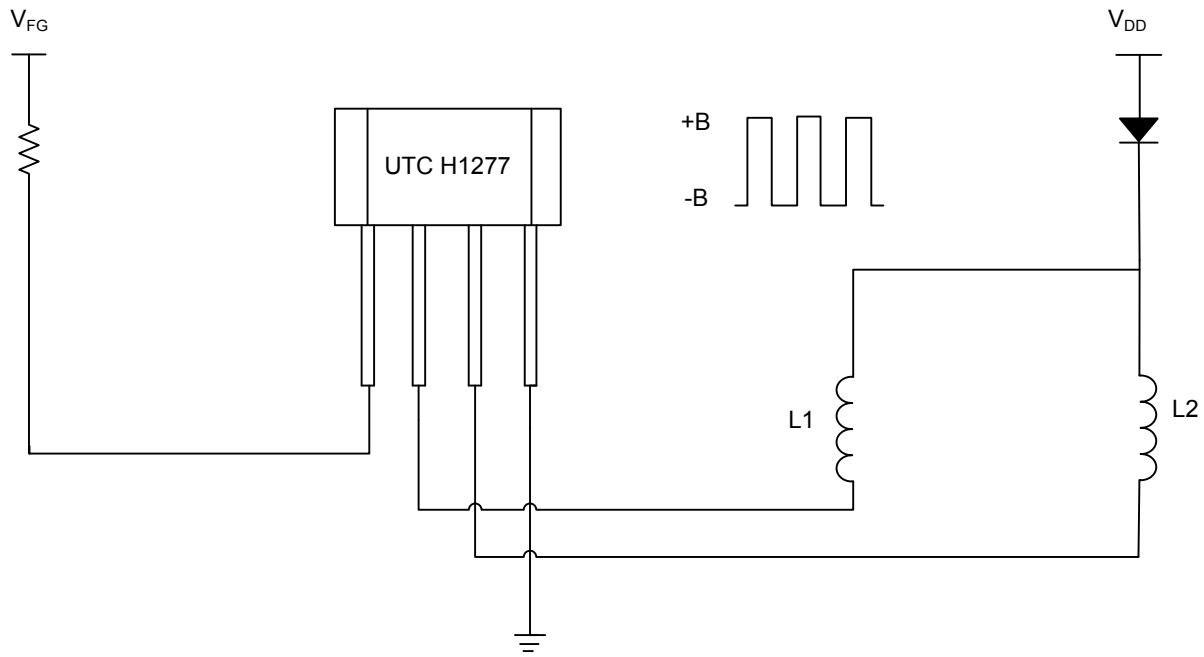
■ ELECTRICAL CHARACTERISTICS (T_a = 25°C,V_{CC} =12V, unless otherwise specified)

PARAMETER	SYMBOL	TESE CONDITIONS	MIN	TYP	MAX	UNITS
Output Saturation Voltage	$V_{O(SAT)}$	I_{OUT} = 400mA		700	900	mV
Supply Current	I_{CC}			11	25	mA
FG OFF Leakage Current	I_{OFF}				1	μA
FG ON Saturation Voltage	V_{ON}	I_{FG} = 5mA		0.2	0.4	V
Clamp Output Voltage	V_{CLAMP}			33		V
Output Rise Time	t_R	R_L = 200Ω, C_L = 10pF		0.4		μS
Output Fall Time	t_F			0.1		μS
Propagation Delay Time	t_D			2		μS

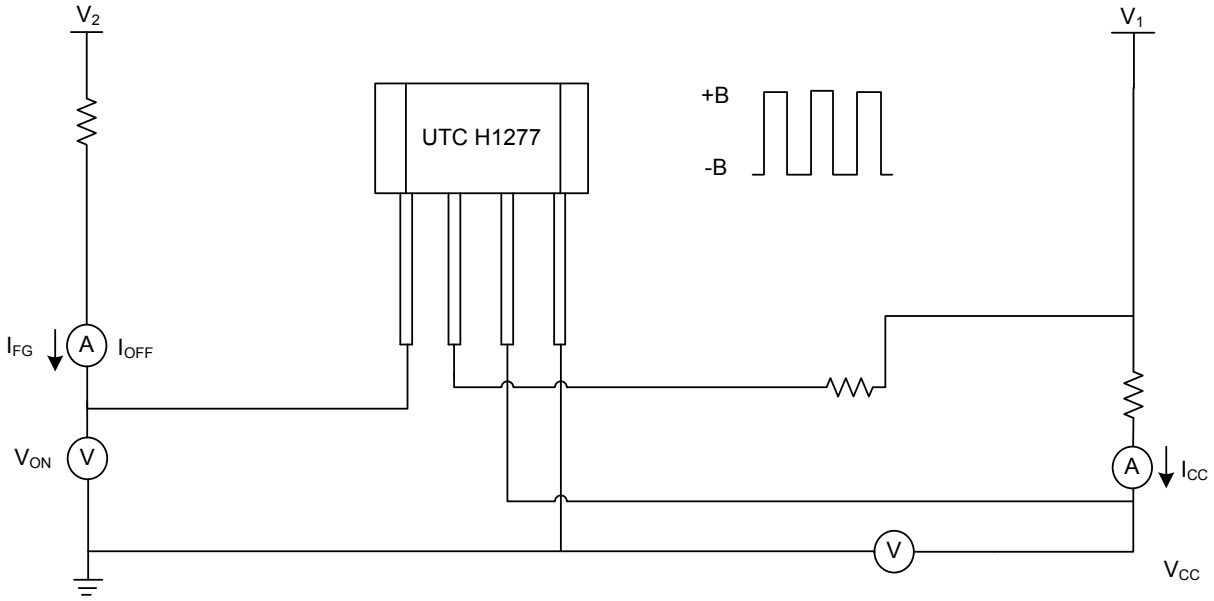
■ MAGNETIC CHARACTERISTICS (T_a = 25°C,V_{CC} =12V unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Magnetic Operate Points	Bop		10		65	Gauss
Magnetic Release Points	Brp		-65		-10	Gauss

■ APPLICATION CIRCUIT



■ TEST CIRCUIT



Measure V_{CC},I_{CC} when DO is off. Measure V_{ON},I_{FG} when FG is on. Measure I_{OFF} when FG is off.

■ TYPICAL APPLICATION CIRCUITS (T_a = 25°C,V_{CC} =12V unless otherwise noted)