



H1277

LINEAR INTEGRATED CIRCUIT

HIGH SENSITIVITY HALL EFFECT SENSOR IC WITH FG OUTPUT

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: $\pm 65G$

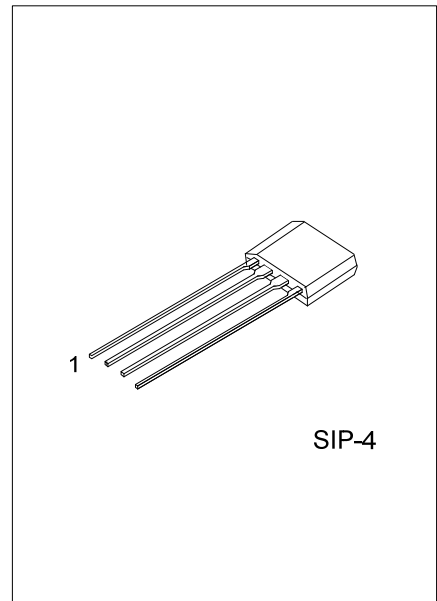
ORDERING INFORMATION

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

<p>H1277L-G04-K</p>	<p>(1) B: Bulk (2) G04: SIP-4 (3) G: Halogen Free, K: Lead Free, Blank: Pb/Sn</p>
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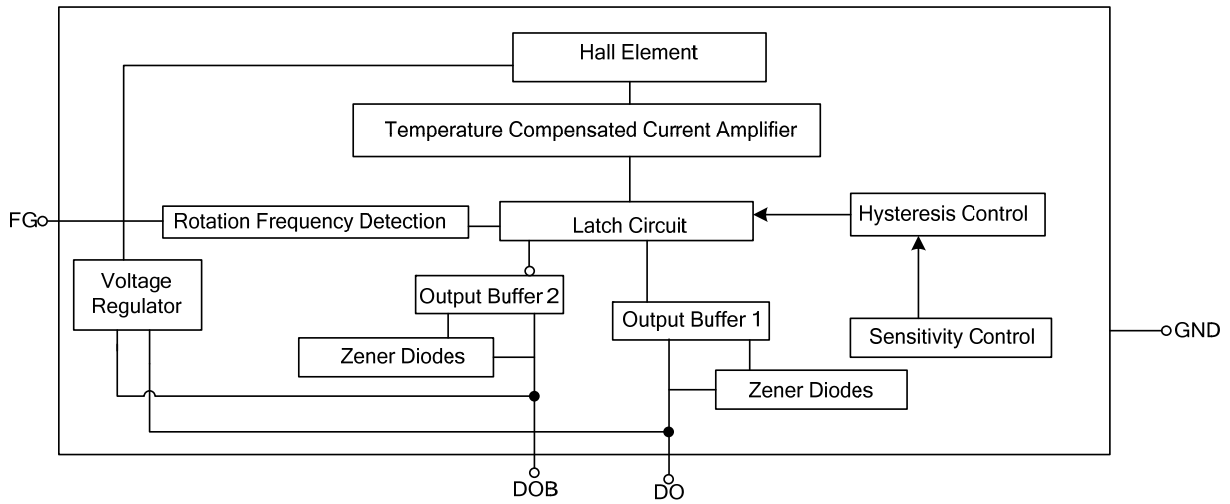
PIN DESCRIPTION

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

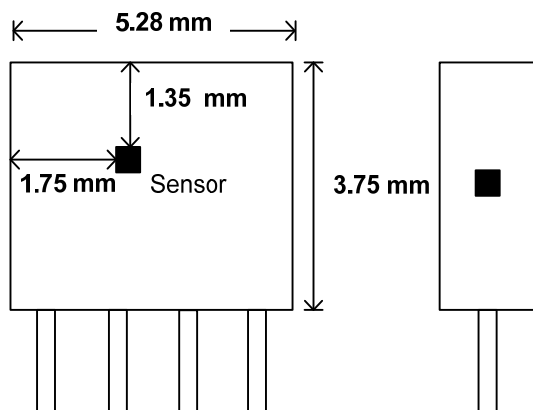


Lead-free: H1277L
Halogen-free: H1277G

■ 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

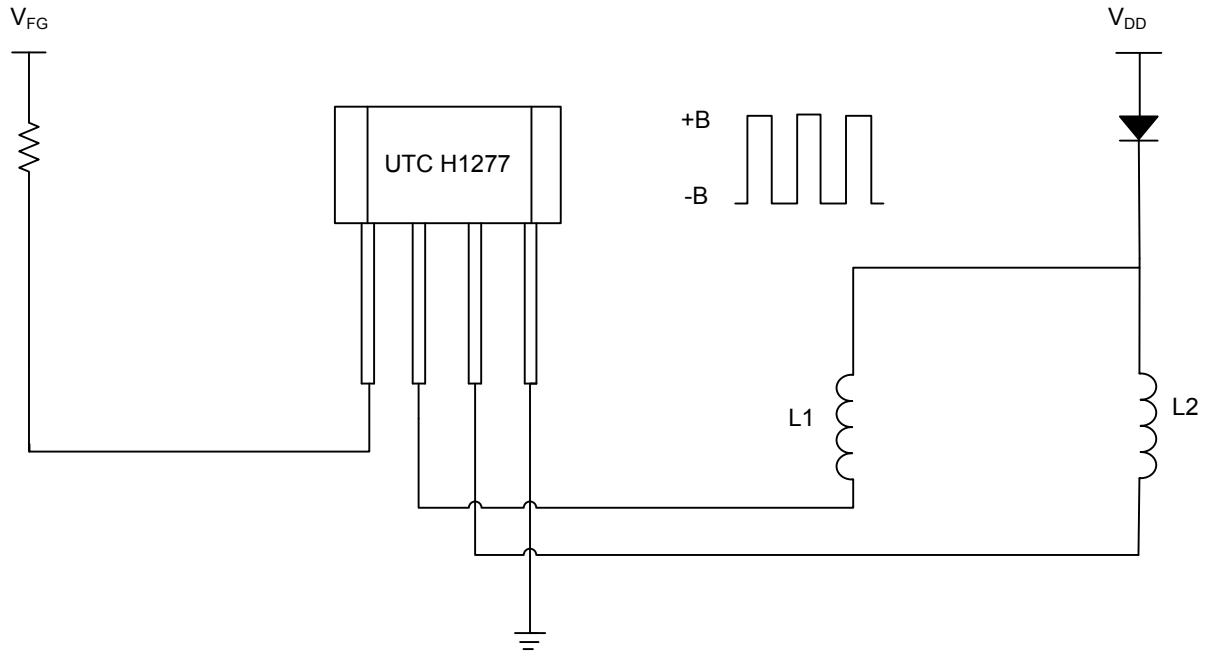
ELECTRICAL CHARACTERISTICS (T_a = 25°C, V_{CC} = 12V, unless otherwise specified)

PARAMETER	SYMBOL	TEST 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

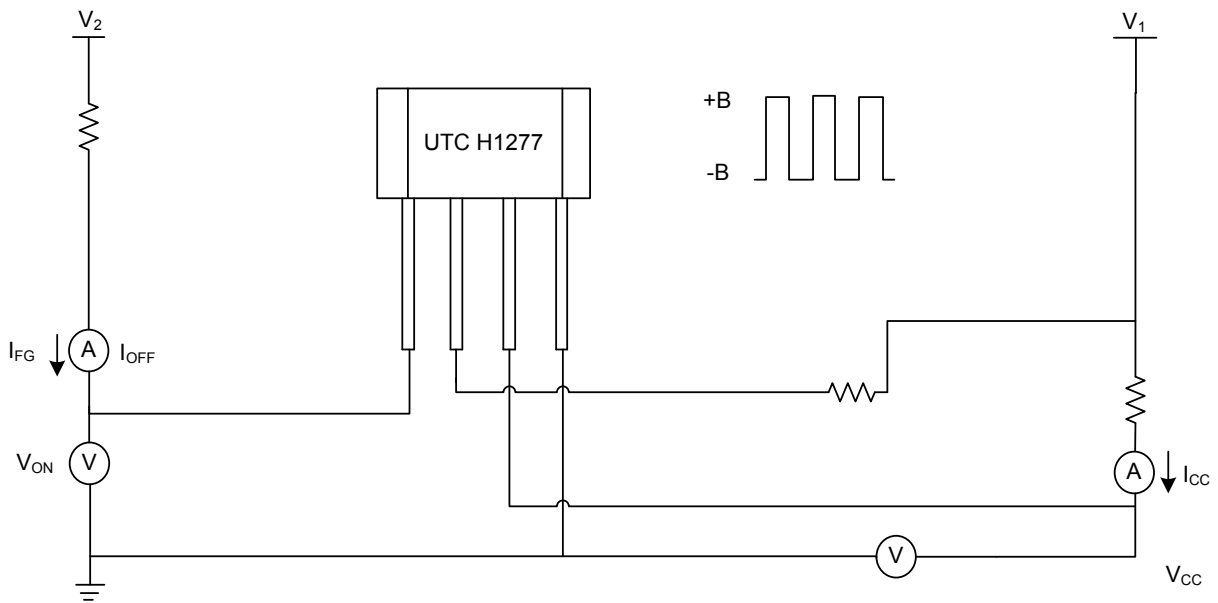
MAGNETIC CHARACTERISTICS (T_a = 25°C, V_{CC} = 12V unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Magnetic Operate Points	B _{op}		10		65	Gauss
Magnetic Release Points	B _{rp}		-65		-10	Gauss

APPLICATION CIRCUIT

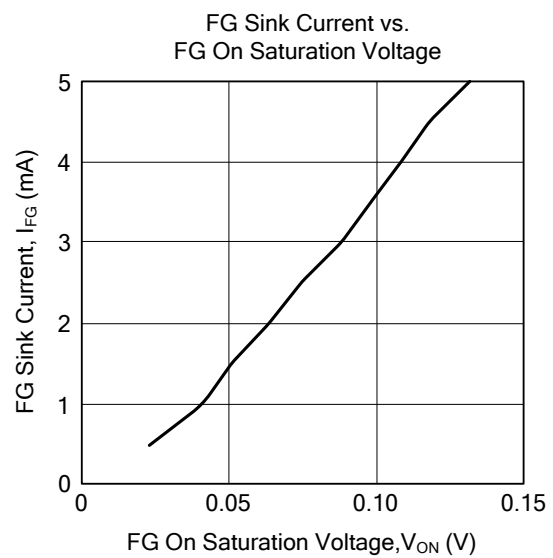
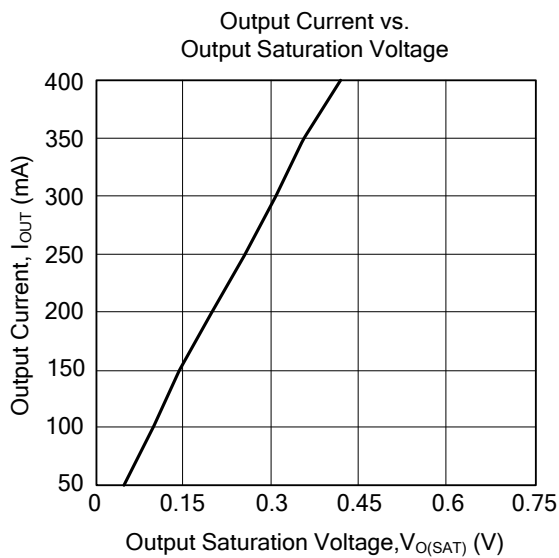
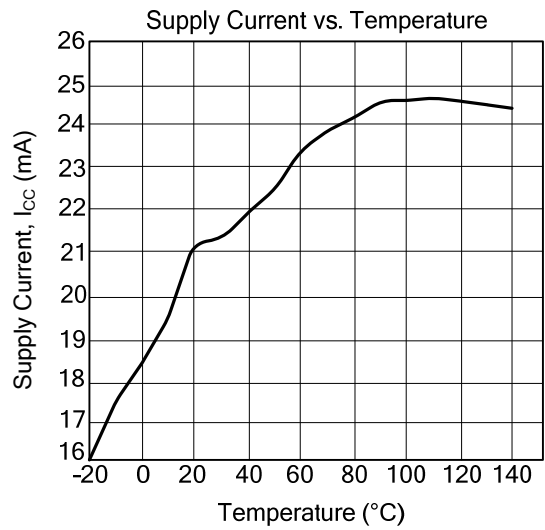
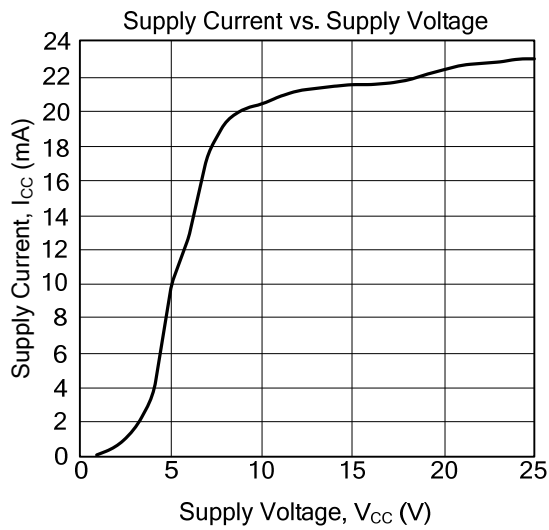


TEST CIRCUIT



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 ($T_a = 25^\circ\text{C}$, $V_{CC} = 12\text{V}$ unless otherwise noted)



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