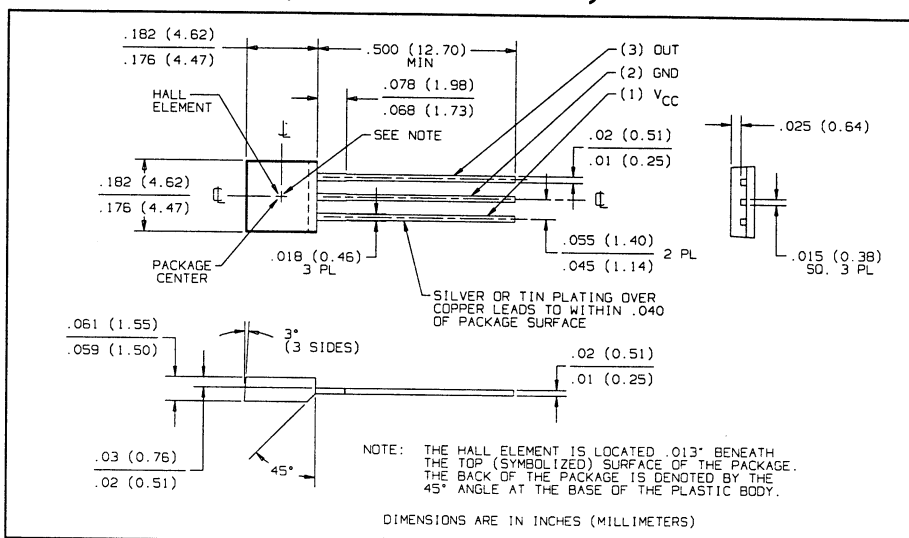
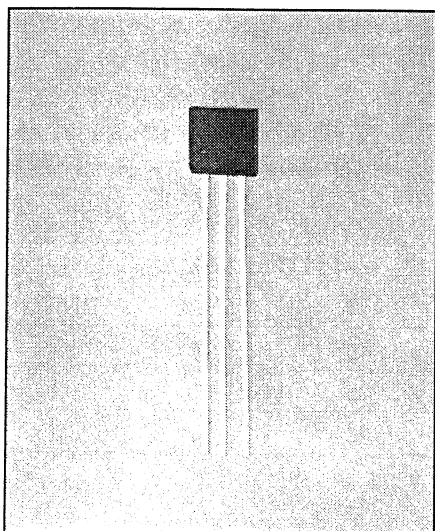


Ratiometric Linear Hall Effect Sensor

Types OHN3150U, OHN3151U, OHS3150U, OHS3151U



Features

- A ratiometric linear output capable of sinking and sourcing current
- 4.5 V to 6.0 V operation
- Responds equally to positive and negative magnetic field
- Excellent temperature stability to operate in harsh environments
- Robust package capable of withstanding harsh environments

Description

The ratiometric linear Hall Effect sensor each contain a monolithic integrated circuit on a single chip. The circuit incorporates a quadratic Hall sensing element which minimizes the effects of mechanical and thermal stress on the Hall element and temperature compensating circuitry to compensate for the inherent Hall element sensitivity change over temperature current.

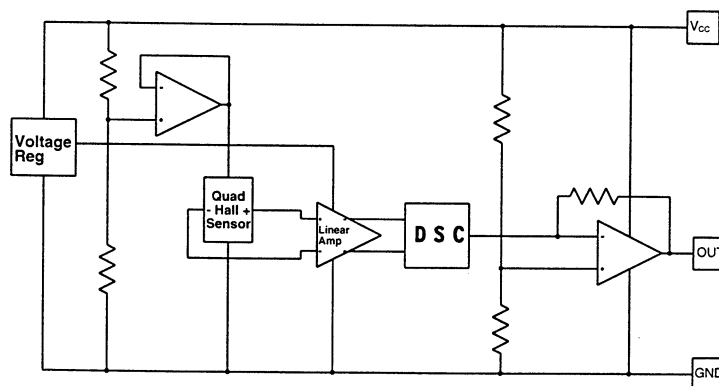
These ratiometric linear Hall Effect sensors provide an output voltage that varies in proportion to the applied magnetic field. The voltage output will increase in response to a south pole (positive) magnetic field applied perpendicular to the package symbolization face, and decrease in response to a north pole (negative) magnetic field.

These 3150U & 3151U ratiometric linear Hall Effect sensors can be used as contactless sensors for rotary and linear position sensing and for current sensing. The devices in this series are similar in performance except for their allowable quiescent voltage output change over the specified operating temperature range.

Absolute Maximum Ratings

Supply Voltage, V_{CC}	6 V
Storage Temperature Range, T_s	-65° C to +170° C
Operating Temperature Range, T_A (OHS prefix)	-40° C to +150° C
(OHN prefix)	-20° C to +85° C
Lead Soldering Temperature (1/8 inch [3.2 mm] from case for 5 sec, with soldering iron)	260° C ⁽¹⁾
Power Dissipation, P_D	100 mW
Output Current, I_o	5 mA
Magnetic Flux Density, B	Unlimited

Block Diagram



DSC = Dual to Single Converter

Electrical Characteristics (Over Operating Temperature Range, at $V_{CC} = 5\text{ V}$, unless otherwise noted)

(1) Negative current is defined as coming out of (sourcing) the output.

SYMBOL	PARAMETER	OHS3150U			OHS3151U			OHN3150U			OHN3151U			UNITS
		MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	
T _A	Operating Temperature Range	-40		150	-40		150	-20		85	-20		85	° C
Sens	Sensitivity @ T _A = 25° C over T _A	2.25 2.0	2.5	2.75 3.0	2.25 2.0	2.5	2.75 3.0	2.25 2.0	2.5	2.75 3.0	2.25 2.0	2.5	2.75 3.0	mV/G mV/G
ΔSens(ΔT)	Sens Change @ T _A > 25° C @ T _A < 25° C	-2 -10		8 0	-2 -10		8 0	-2 -10		8 0	-2 -10		8 0	% %
ΔVoQ(ΔT)	VoQ Change over T _A			±35			±50			±35			±50	G
ΔSens(ΔV)	Ratiometric Sens Change		100			100			100			100		%
ΔVoQ(ΔV)	Ratiometric VoQ Change		100			100			100			100		%
+Lin	Positive Lin ≥ 25 < 25	99 99		105 110	99 99		105 110	99 99		105 110	99 99		105 110	%
-Lin	Negative Lin ≥ 25 < 25	95 90		101 101	95 90		101 101	95 90		101 101	95 90		101 101	%
Sym	Output Symmetry	95	100	105	95	100	105	95	100	105	95	100	105	%

See characteristics definitions for test conditions and calculation formulas.