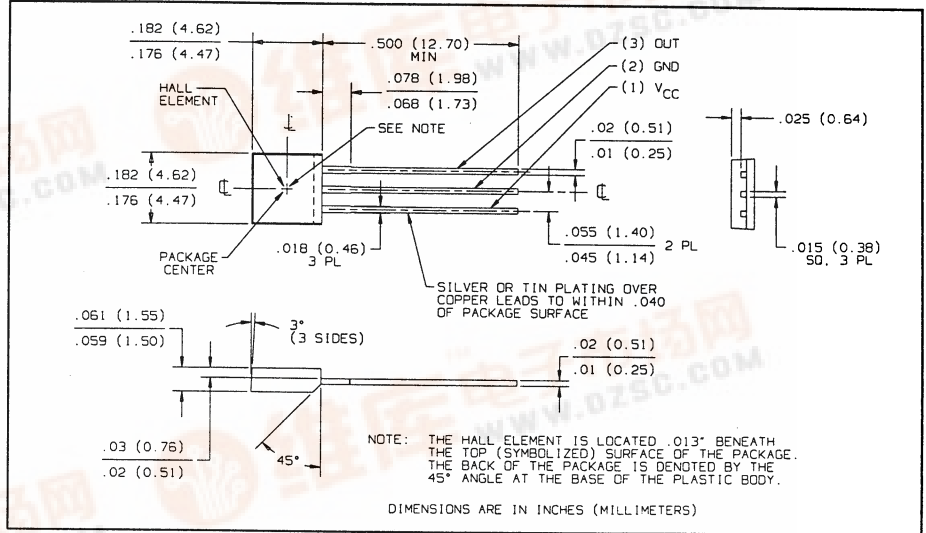
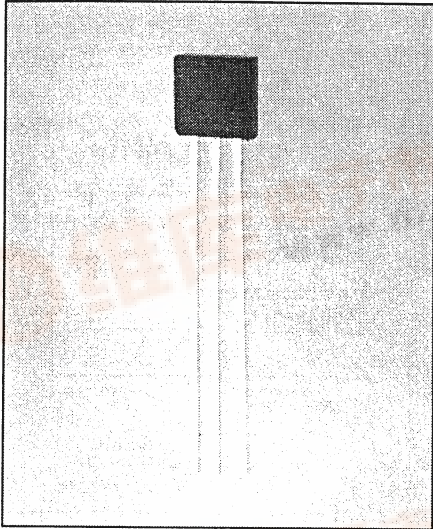




Product Bulletin OHN3040U
May 1996

Hallogic® Hall Effect Sensors

Types OHN3040U, OHS3040U



Features

- Operates over a broad range of supply voltages
- Excellent temperature stability to operate in harsh environments
- Drive capability up to 7 TTL loads
- Hall element, linear amplifier, and Schmitt trigger on a single Hallogic® silicon chip

Description

The OHN3040U and OHS3040U each contain a monolithic integrated circuit which incorporates a Hall element, a linear amplifier, and Schmitt trigger on a single silicon chip. Included on-chip is a bandgap voltage regulator to allow operation with a wide range of supply voltages. The devices feature logic level output and provides up to 21 mA of sink current. This allows direct driving of more than 7 TTL loads or any standard logic family using power supplies ranging from 4.5 to 24 volts. Output amplitude is constant at switching frequencies from DC to over 200 kHz.

Stability of the magnetic operate and release points is excellent over this entire temperature range. The release point over the temperature range will always be greater than zero.

Package size has been kept to minimum, providing an advantage in applications where space is limited.

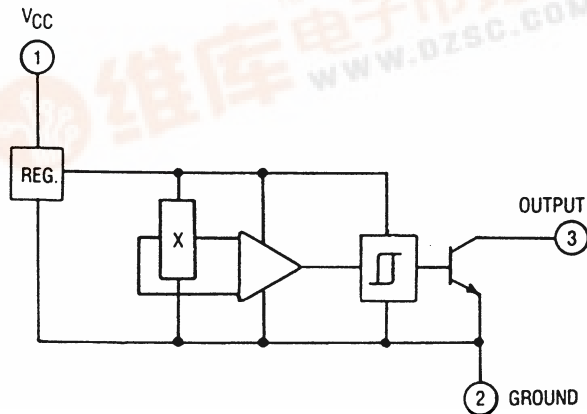
Absolute Maximum Ratings (TA = 25°C unless otherwise noted)

Supply Voltage, VCC	25 V
Storage Temperature Range, TS	-65°C to +150°C
Operating Temperature Range, TA	OHN3040U -20°C to +85°C
	OHS3040U -40°C to +125°C
Lead Soldering Temperature [1/8 inch (3.2 mm) from case for 5 sec. with soldering iron]	260°C(1)
Output ON Current, ISINK	25 mA
Output OFF Voltage, VOUT	25 V
Magnetic Flux Density, B	Unlimited

Note:

(1) Heat sink leads during hand soldering.

Functional Block Diagram



Types OHN3040U, OHS3040U

Electrical Characteristics ($V_{CC} = 4.5 \text{ V to } 24 \text{ V}$, $T_A = 25^\circ \text{ C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
BOP	Magnetic Operate Point ⁽²⁾		150	200	Gauss	
B _{RP}	Magnetic Release Point	50	115		Gauss	
B _H	Magnetic Hysteresis	20	35		Gauss	
I _{CC}	Supply Current		4	7	mA	$V_{CC} = 24 \text{ V}$, Output Off
V _{OL}	Output Saturation Voltage		100	400	mV	$V_{CC} = 4.5 \text{ V}$, $I_{OL} = 20 \text{ mA}$, $B \geq 200 \text{ Gauss}$
I _{OH}	Output Leakage Current		0.1	10.0	μA	$V_{CC} = 24 \text{ V}$, $V_{OUT} = 24 \text{ V}$, $B \leq 50 \text{ Gauss}$
t _r	Output Rise Time		0.21	1.00	μs	$R_L = 820 \Omega$, $C_L = 20 \text{ pF}$
t _f	Output Fall Time		0.25	1.00	μs	

(2) South pole facing symbolized surface.

Typical Performance Curves

