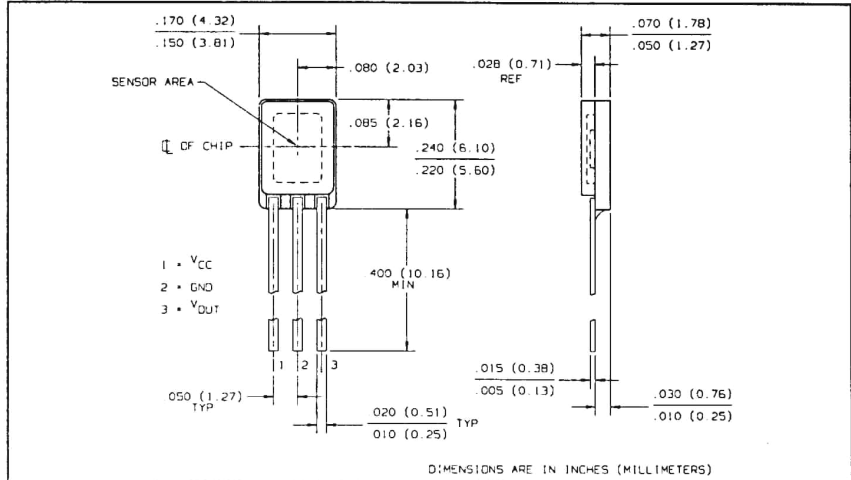
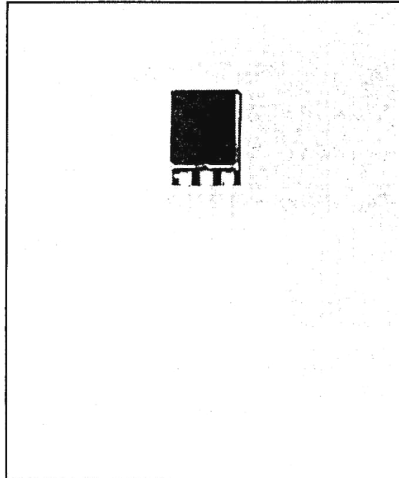


High Reliability Halloglic[®] Hall Effect Sensor Types OMH3075B, OMH3075S (Bi-Polar Latching)



Features

- Lead finish is hot solder dip
- Hermetic ceramic package
- Operates over a broad range of supply voltages
- Excellent temperature stability to operate in harsh environments
- Hall element, linear amplifier, and Schmitt trigger on a single Halloglic[®] silicon chip
- Processing patterned after class B or class S of MIL-STD-883
- Suitable for military and space applications

Description

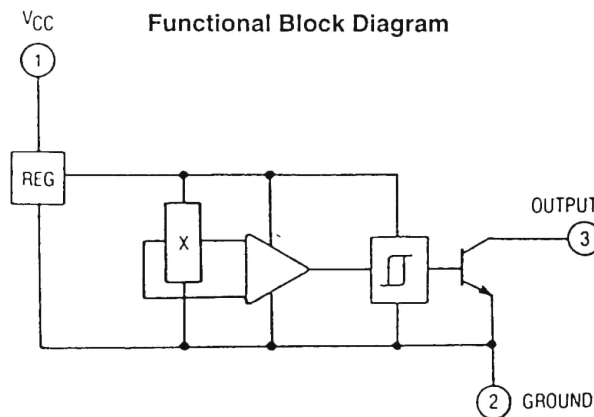
The chip contains a monolithic integrated circuit which incorporates a Hall element, a linear amplifier, and Schmitt trigger on a single silicon chip. Included on-chip is a bandgap voltage regulator to allow operation with a wide range of supply voltages. The device features logic level output and is capable of 25 mA of sink current. Output amplitude is constant at switching frequencies from DC to over 100 kHz.

The OMH3075B is processed to Optek's own screening procedures patterned after class B of MIL-STD-883. OMH3075S is patterned after class S. Typical screening and lot acceptance tests are provided on page 13-4.

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Supply Voltage, V_{CC}	25 V
Storage Temperature Range, T_S	-65°C to $+150^\circ\text{C}$
Operating Temperature Range, T_A	-55°C to $+125^\circ\text{C}$
Lead Soldering Temperature [1/8 inch (3.2 mm) from case for 5 sec. with soldering iron]	260°C
Output ON Current, I_{SINK}	25 mA
Output OFF Voltage, V_{OUT}	25 V
Magnetic Flux Density, B	Unlimited

Functional Block Diagram



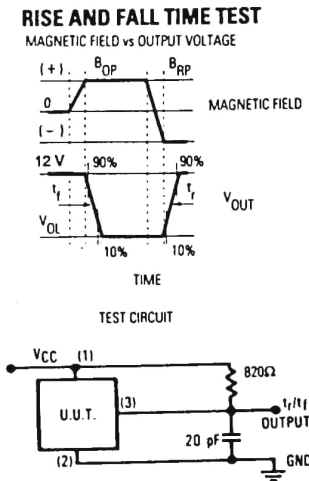
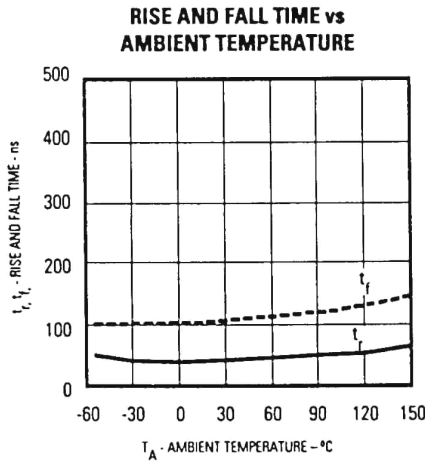
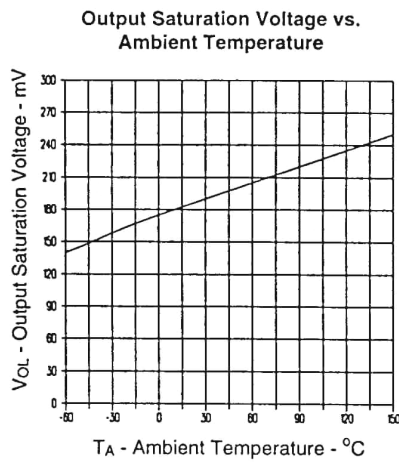
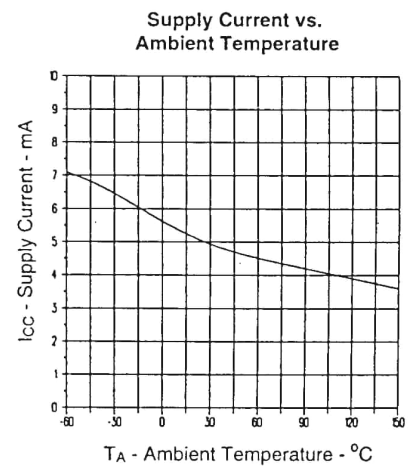
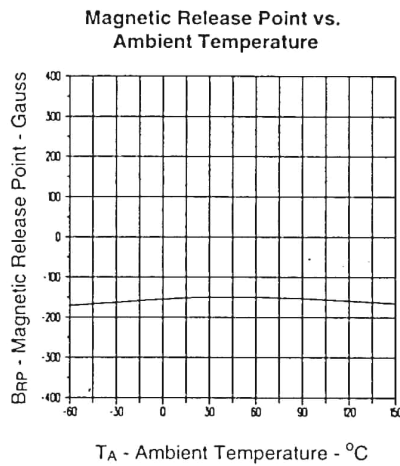
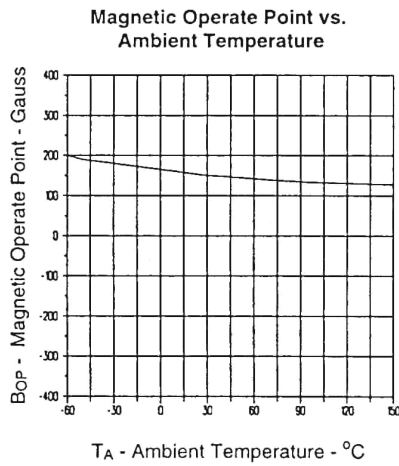
These devices turn on (logic level "0") in the presence of a magnetic south pole and turn off (logic level "1") when subjected to a magnetic north pole. Both magnetic poles are necessary for operation so they are referred to as Bipolar or Latching. This feature makes these sensors ideal for application in brushless DC motors and for use with multiple pole magnets.

Types OMH3075B, OMH3075S

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

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
B _{OP}	Magnetic Operate Point	50	150	250	Gauss	
B _{RP}	Magnetic Release Point	-250	-150	-50	Gauss	
B _H	Magnetic Hysteresis	100	300	500	Gauss	
I _{CC}	Supply Current		5.0	9.0	mA	$V_{CC} = 24\text{ V}$, Output On
V _{OL}	Output Saturation Voltage		190	400	mV	$V_{CC} = 4.5\text{ V}$, I _{OL} = 15 mA
I _{OH}	Output Leakage Current		0.1	10	μA	$V_{CC} = 24\text{ V}$, V _{OUT} = 24 V
t _r	Output Rise Time		0.13	1.00	μs	R _L = 820 Ω, C _L = 20 pF
t _f	Output Fall Time		0.19	1.00	μs	R _L = 820 Ω, C _L = 20 pF

Typical Performance Curves



HI-REL HALL EFFECT SENSORS

Optek reserves the right to make changes at any time in order to improve design and to supply the best product possible.

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