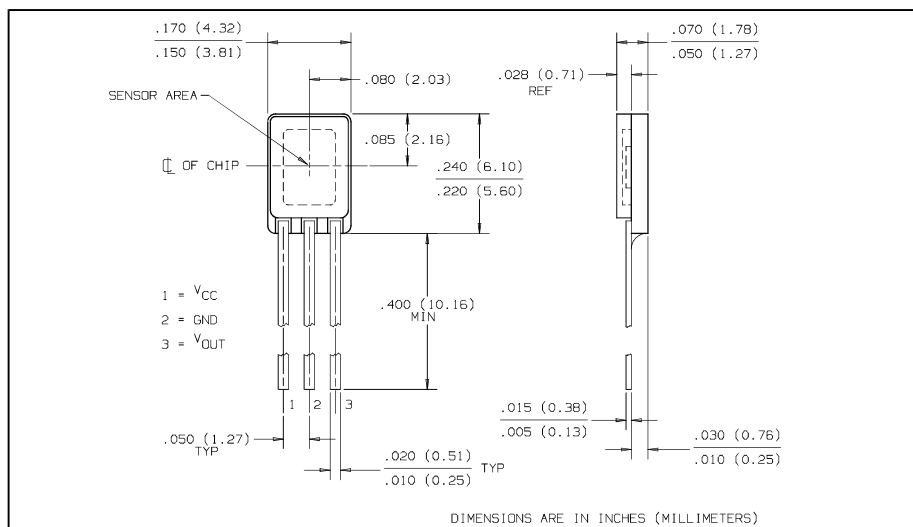
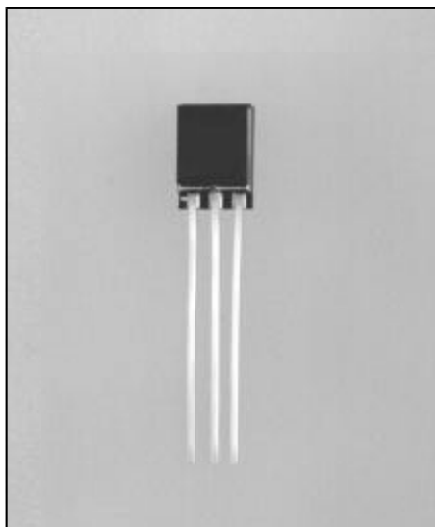


# High Reliability Halloglic<sup>®</sup> Hall Effect Sensor Types OMH360B, OMH360S



## 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<sup>®</sup> silicon chip
- Processing patterned after class B or class S of MIL-STD-883
- Suitable for military and space applications

## Description

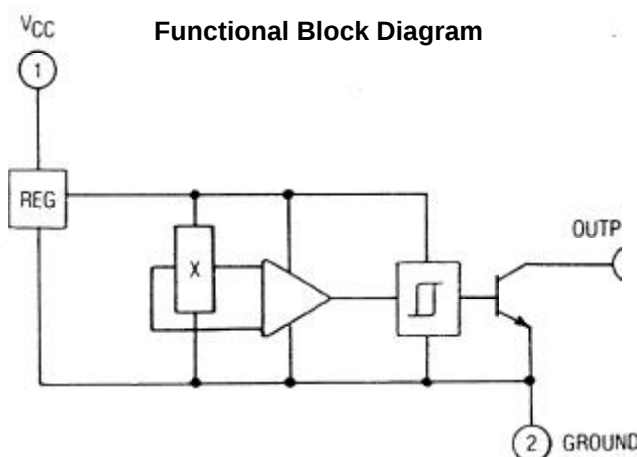
The chip contains a monolithic integrated circuit which incorporates a Hall element, a linear amplifier, and Schmitt trigger on a single silicon chip. Included on-chip is a bandgap voltage regulator to allow operation with a wide range of supply voltages. The device features logic level output and is capable of 25 mA of sink current. Output amplitude is constant at switching frequencies from DC to over 200 kHz.

The OMH360B is processed to Optek's own screening procedures patterned after class B of MIL-STD-883. OMH360S is patterned after class S. Typical screening and lot acceptance 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, $T_S$                                                       | $-65^\circ\text{C}$ to $+150^\circ\text{C}$ |
| Operating Temperature Range, $T_A$                                                     | $-55^\circ\text{C}$ to $+125^\circ\text{C}$ |
| Lead Soldering Temperature [1/8 inch (3.2mm) from case for 5 sec. with soldering iron] | $260^\circ\text{C}$                         |
| Output ON Current, $I_{SINK}$                                                          | 25 mA                                       |
| Output OFF Voltage, $V_{OUT}$                                                          | 25 V                                        |
| Magnetic Flux Density, B                                                               | Unlimited                                   |

## Functional Block Diagram

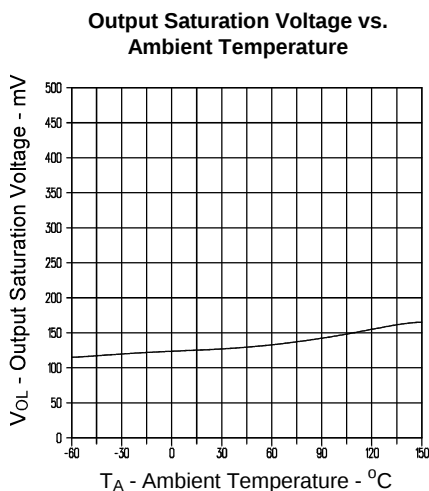
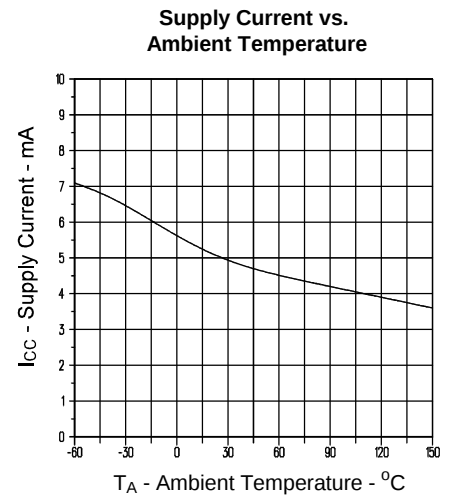
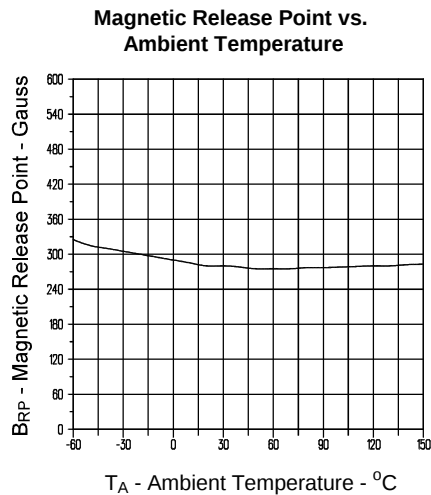
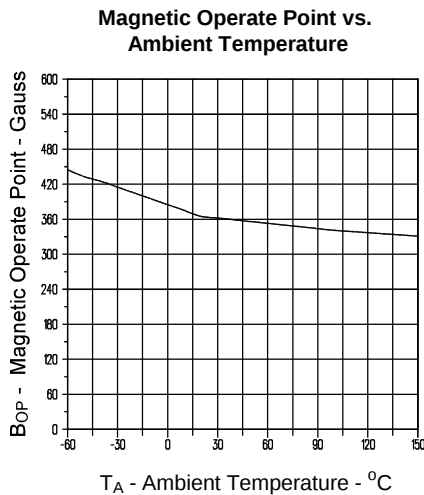


# Types OMH360B, OMH360S

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

| SYMBOL   | PARAMETER                 | MIN | TYP  | MAX  | UNITS         | TEST CONDITIONS                                   |
|----------|---------------------------|-----|------|------|---------------|---------------------------------------------------|
| $B_{OP}$ | Magnetic Operate Point    | 235 | 360  | 465  | Gauss         |                                                   |
| $B_{RP}$ | Magnetic Release Point    | 170 | 280  | 360  | Gauss         |                                                   |
| $B_H$    | Magnetic Hysteresis       | 30  | 80   | 150  | Gauss         |                                                   |
| $I_{CC}$ | Supply Current            |     | 5.0  | 9.0  | mA            | $V_{CC} = 24\text{ V}$ , Output On                |
| $V_{OL}$ | Output Saturation Voltage |     | 125  | 300  | mV            | $V_{CC} = 4.5\text{ V}$ , $I_{OL} = 15\text{ mA}$ |
| $I_{OH}$ | Output Leakage Current    |     | 0.1  | 10.0 | $\mu\text{A}$ | $V_{CC} = 24\text{ V}$ , $V_{OUT} = 24\text{ V}$  |
| $t_r$    | Output Rise Time          |     | 0.13 | 1.00 | $\mu\text{s}$ | $R_L = 820\ \Omega$ , $C_L = 20\text{ pF}$        |
| $t_f$    | Output Fall Time          |     | 0.19 | 1.00 | $\mu\text{s}$ | $R_L = 820\ \Omega$ , $C_L = 20\text{ pF}$        |

## Typical Performance Curves



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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