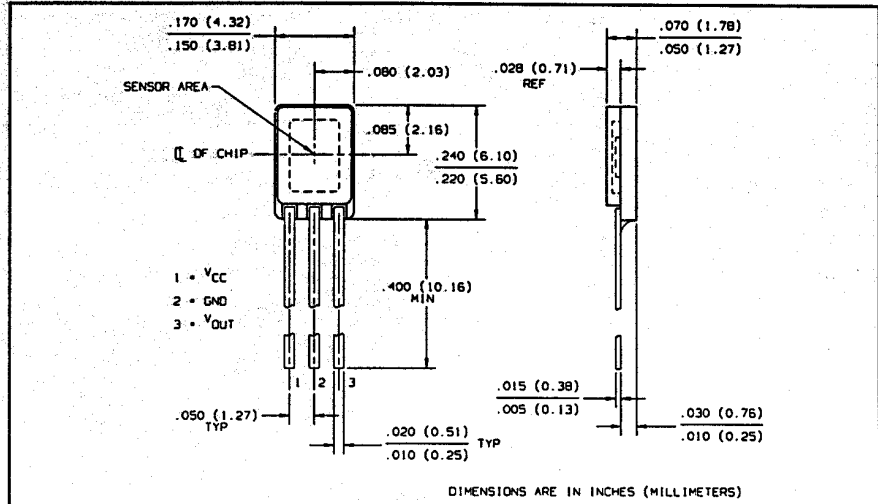
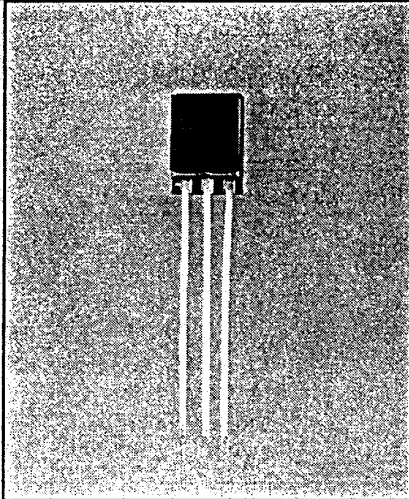


High Reliability Halloglic[®] Hall Effect Sensor Types OMH3040B, OMH3040S



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

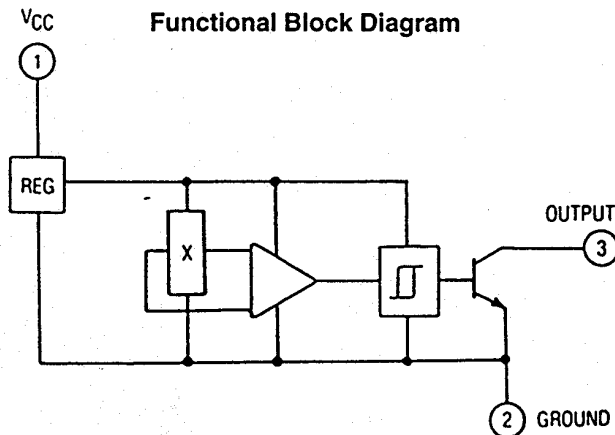
The chip contains a monolithic integrated circuit which incorporates a Hall element, a linear amplifier, and Schmitt trigger on a single silicon chip. Included on-chip is a bandgap voltage regulator to allow operation with a wide range of supply voltages. The device features logic level output and is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

The OMH3040B is processed to Optek's own screening procedures patterned after class B of MIL-STD-883. OMH3040S is patterned after class S. Typical screening and lot acceptance tests are provided on page 13-4.

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

Supply Voltage, V _{CC}	25 V
Storage Temperature Range, T _S	-65° C to +150° C
Operating Temperature Range, T _A	-55° C to +125° 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



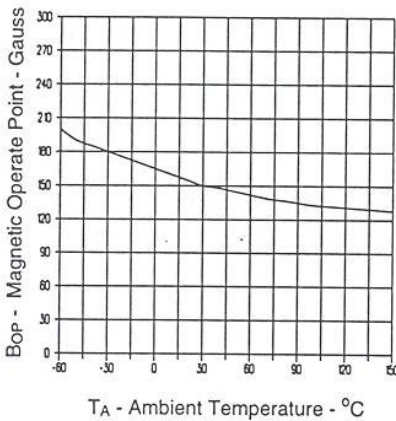
Types OMH3040B, OMH3040S

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

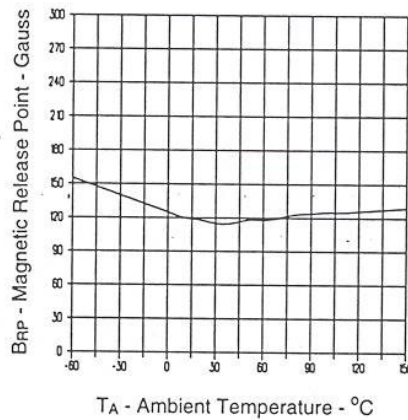
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
BOP	Magnetic Operate Point	70	150	200	Gauss	
BRP	Magnetic Release Point	50	115	180	Gauss	
BH	Magnetic Hysteresis	10	35	60	Gauss	
ICC	Supply Current		5.0	9.0	mA	$V_{CC} = 24\text{ V}$, Output On
VOL	Output Saturation Voltage		125	300	mV	$V_{CC} = 4.5\text{ V}$, $I_{OL} = 15\text{ mA}$
IOH	Output Leakage Current		0.1	10	μA	$V_{CC} = 24\text{ V}$, $V_{OUT} = 24\text{ V}$
t_r	Output Rise Time		0.13	1.00	μs	$R_L = 820\ \Omega$, $C_L = 20\ \text{pF}$
t_f	Output Fall Time		0.19	1.00	μs	$R_L = 820\ \Omega$, $C_L = 20\ \text{pF}$

Typical Performance Curves

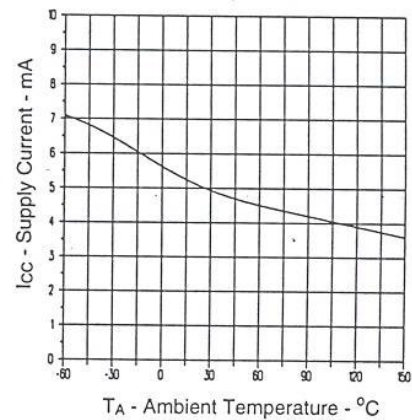
Magnetic Operate Point vs. Ambient Temperature



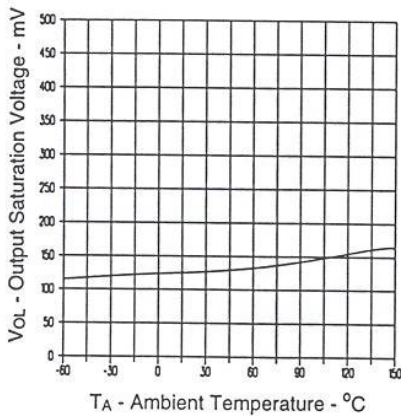
Magnetic Release Point vs. Ambient Temperature



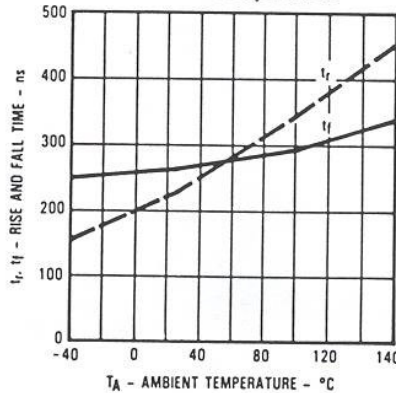
Supply Current vs. Ambient Temperature



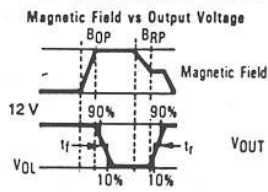
Output Saturation Voltage vs. Ambient Temperature



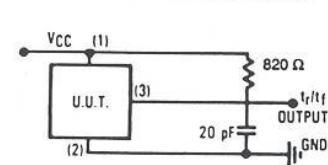
Rise and Fall Time vs. Ambient Temperature



Rise and Fall Time Tests



Rise and Fall Time Test Circuit



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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