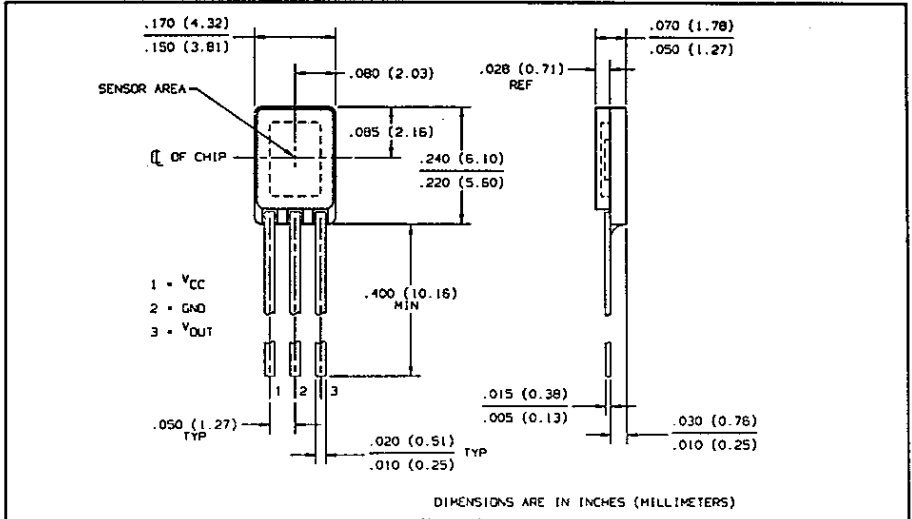
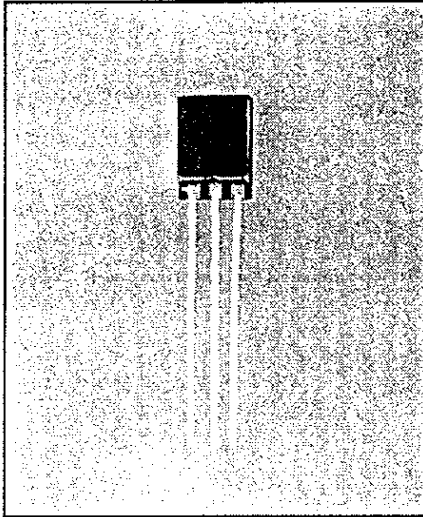


High Reliability Halloglic[®] Hall Effect Sensor Types OMH090B, OMH090S



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

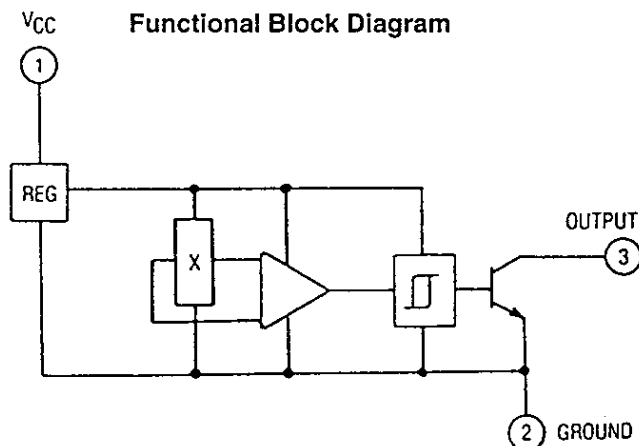
Description

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 OMH090B is processed to Optek's own screening procedures patterned after class B of MIL-STD-883. OMH090S 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



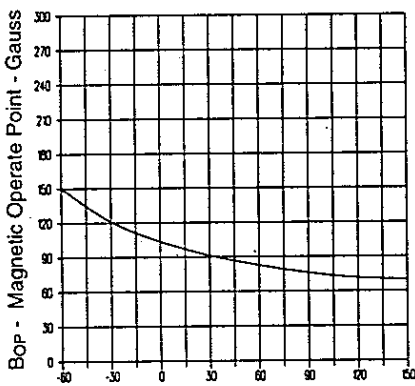
Types OMH090B, OMH090S

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
BOP	Magnetic Operate Point	50	90	180	Gauss	
BRP	Magnetic Release Point	30	60	160	Gauss	
B _H	Magnetic Hysteresis	5	30	70	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 mA
I _{OH}	Output Leakage Current		0.50	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

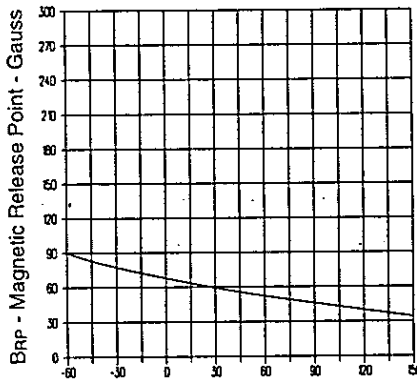
Typical Performance Curves

Magnetic Operate Point vs. Ambient Temperature



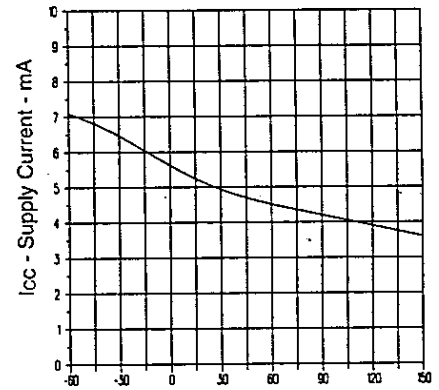
TA - Ambient Temperature - °C

Magnetic Release Point vs. Ambient Temperature



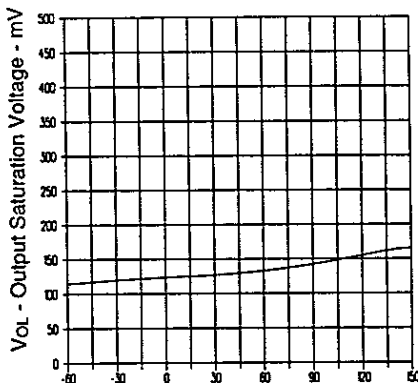
TA - Ambient Temperature - °C

Supply Current vs. Ambient Temperature



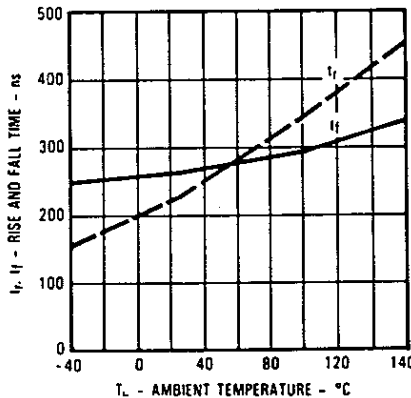
TA - Ambient Temperature - °C

Output Saturation Voltage vs. Ambient Temperature



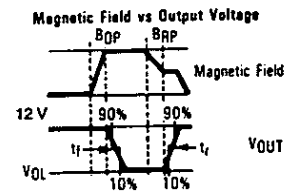
TA - Ambient Temperature - °C

Rise and Fall Time vs. Ambient Temperature

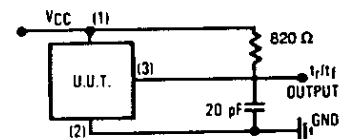


TA - AMBIENT TEMPERATURE - °C

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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