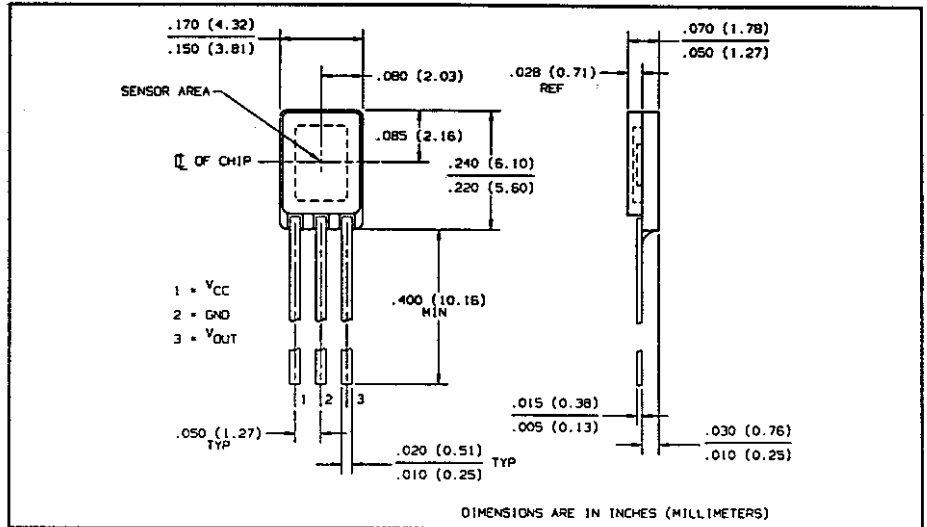
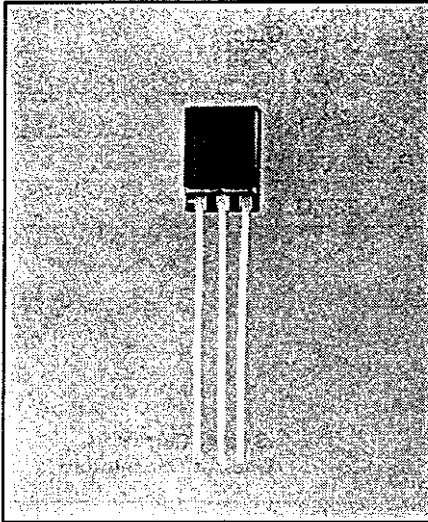


High Reliability Hallogic[®] Hall Effect Sensor Types OMH3020B, OMH3020S



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 Hallogic[®] silicon chip
- Processing patterned after class B or class S of MIL-STD-883
- Suitable for military and space applications

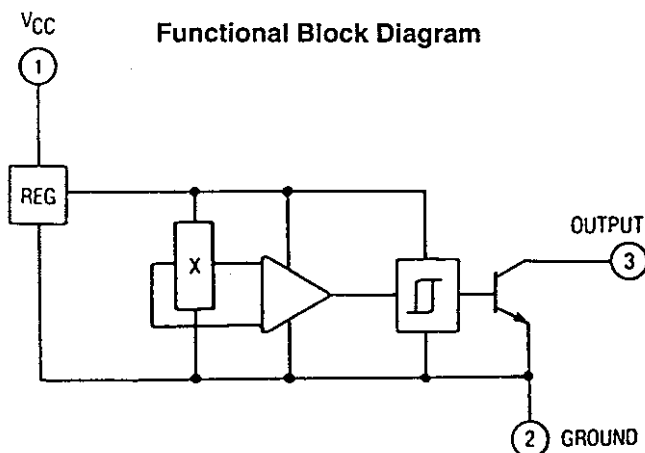
Description

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 OMH3020B is processed to Optek's own screening procedures patterned after class B of MIL-STD-883. OMH3020S 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



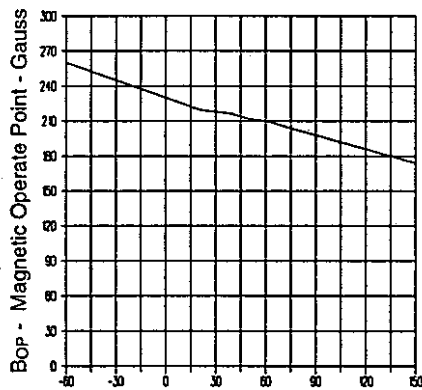
Types OMH3020B, OMH3020S

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	70	220	350	Gauss	
B _{RP}	Magnetic Release Point	50	165	330	Gauss	
B _H	Magnetic Hysteresis	15	55	200	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	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	$R_L = 820\ \Omega$, $C_L = 20\text{ pF}$

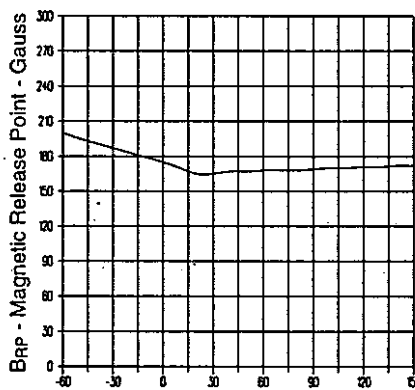
Typical Performance Curves

Magnetic Operate Point vs. Ambient Temperature



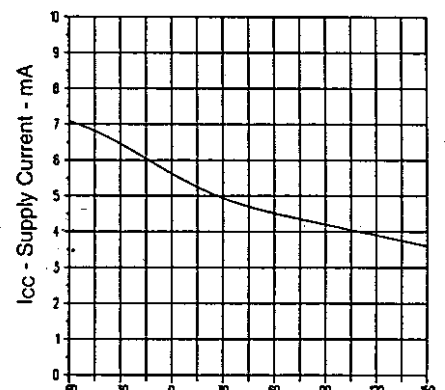
T_A - Ambient Temperature - $^\circ\text{C}$

Magnetic Release Point vs. Ambient Temperature



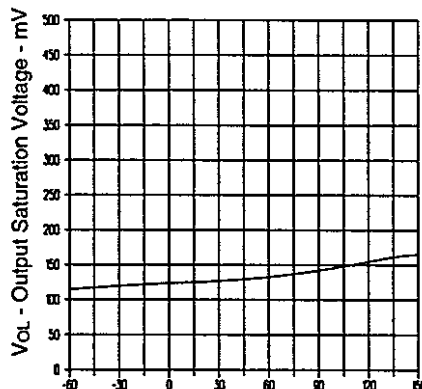
T_A - Ambient Temperature - $^\circ\text{C}$

Supply Current vs. Ambient Temperature



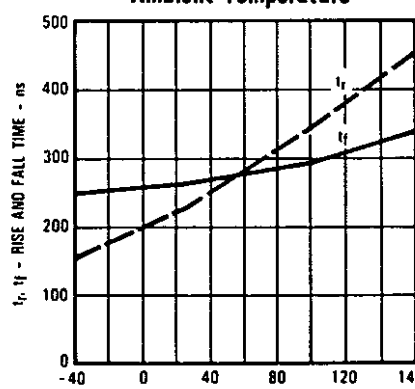
T_A - Ambient Temperature - $^\circ\text{C}$

Output Saturation Voltage vs. Ambient Temperature



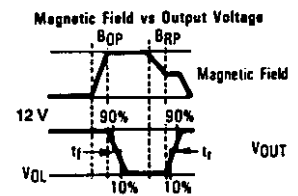
T_A - Ambient Temperature - $^\circ\text{C}$

Rise and Fall Time vs. Ambient Temperature

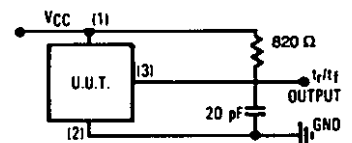


T_A - AMBIENT TEMPERATURE - $^\circ\text{C}$

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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