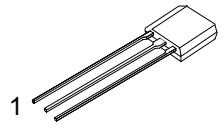
BIPOLAR LATCH TYPE HALL-EFFECT FOR HIGH-TEMPERARURE OPERATION



SIP-3

*Pb-free plating product number: U18L

■ DESCRIPTION

U18 is a semiconductor integrated circuit utilizing the Hall effect. It has been so designed as to operate in the alternating magnetic field especially at low supply voltage and operation over extended temperature ranges to +125℃.This Hall IC is suitable for application to various kinds of sensors, contact less switches, and the like.

■ FEATURES

* Wide supply voltage range of 2.5V to 20V
* Wide temperature operation range of -20℃~+125℃
* Alternating magnetic field operation
* TTL and MOS IC are directly drivable by the output
* The life is semipermanent because it employs contact less parts
* SIP-3 package

■ APPLICATION

* Speed sensor
* Position sensor
* Rotation sensor
* Contact-less sensor
* Motor control
* Built-in protection diode

■ ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
U18-G03-D-K	U18L-G03-D-K	SIP-3	I	G	O	Bulk

Note: Pin Assignment: I:V_{CC} O:V_{OUT} G:GND

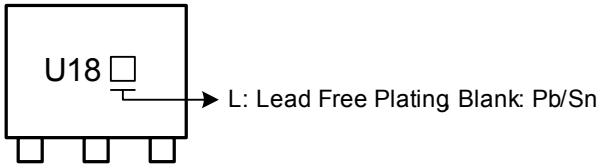
U18L-G03-D-K

(1)Packing Type
(2)Pin Assignment
(3)Package Type
(4)Lead Plating

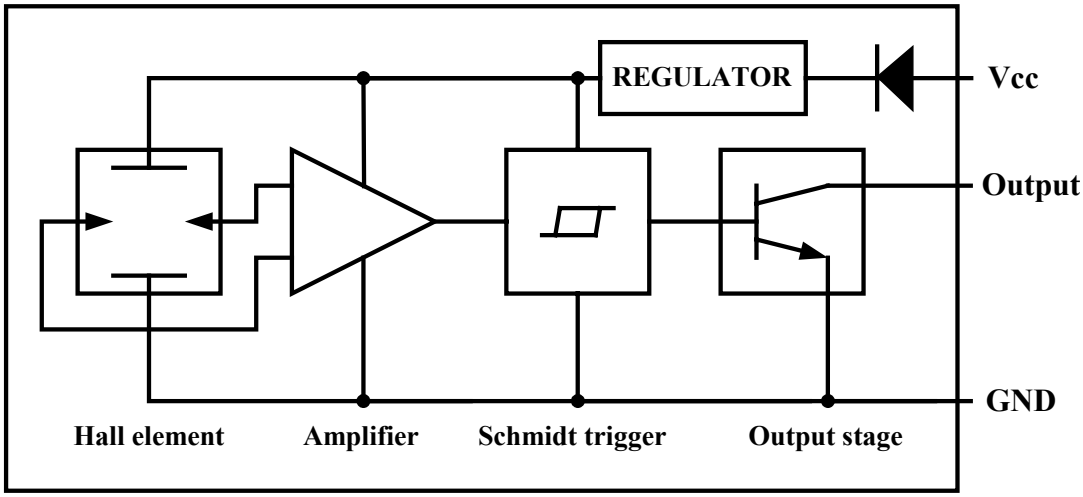
(1) K: Bulk
(2) refer to Pin Assignment
(3) G03: SIP-3
(4) L: Lead Free Plating, Blank: Pb/Sn

■ MARKING INFORMATION

SIP-3



■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	2.5V ~ 20V	V
Supply Current	I_{CC}	10	mA
Circuit Current	I_{OUT}	20	mA
Power Dissipation	P_D	400	mW
Operating Temperature	T_{OPR}	-20~+125	℃
Storage Temperature	T_{STG}	-40~+150	℃

Note 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. The device is guaranteed to meet performance specification within 0℃~+70℃ operating temperature range and assured by design from -20℃~+125℃.

■ ELECTRICAL CHARACTERISTICS (Ta=25℃)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Low-Level Output Voltage	V_{OL}	V_{CC}=16V,I_{OUT}=12mA,B=30mT			0.7	V
		V_{CC}=3.6V,I_{OUT}=12mA,B=30mT			0.7	V
Output Leakage Current	$I_{O(LEAK)}$	V_{CC}=16V,B=-30mT		1	10	μA
Output Short Circuit Current	-Ios	V_{CC}=16V,V_{OUT}=0V,B=-30mT		0.8		mA
Supply Current	I_{CC}	V_{CC}=16V			6	mA
		V_{CC}=3.6V			5.5	mA
MAGNETIC CHARACTERISTICS						
Operate Point	B_{OP}	At Ta = +25℃			5	mT
Release Point	B_{RP}	At Ta = +25℃			-5	**mT**
Hysteresis	B_{HYS}	At Ta = +25℃			5.5	mT

Note 1.B_{OP} = operate point (output turns ON); B_{RP} = release point (output turns OFF); B_{HYS} = hysteresis (B_{OP} –B_{RP}).As used here, negative flux densities are defined as less than zero (algebraic convention). Typical values are at Ta = +25℃ and V_{CC} = 12V.

2.1mT=10 gauss

■ PACKAGE INFORMATION

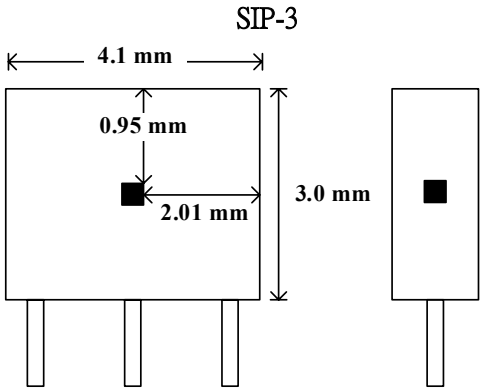


Fig. 1 SENSOR LOCATIONS

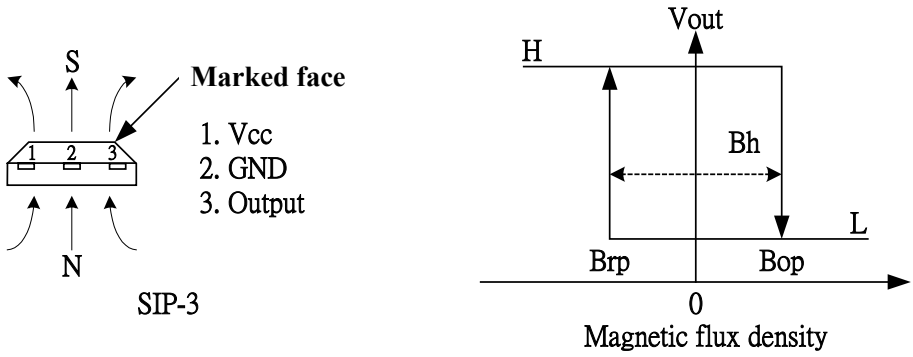
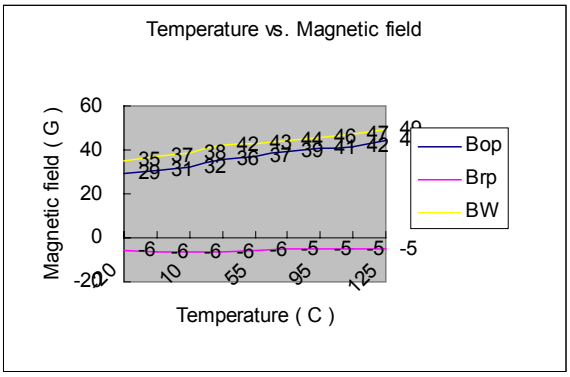
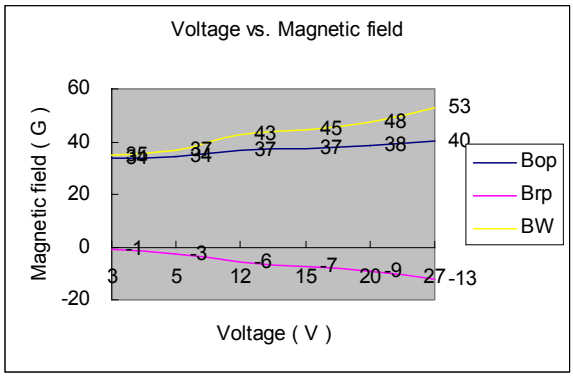
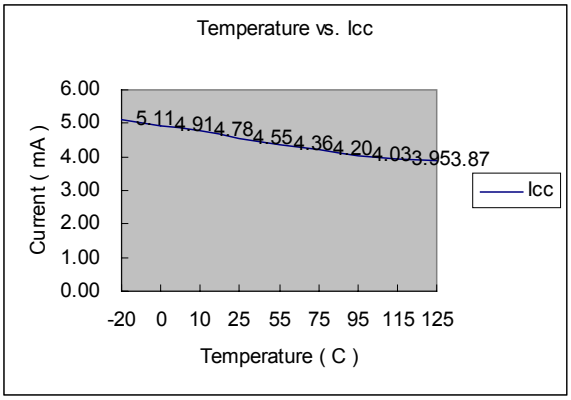


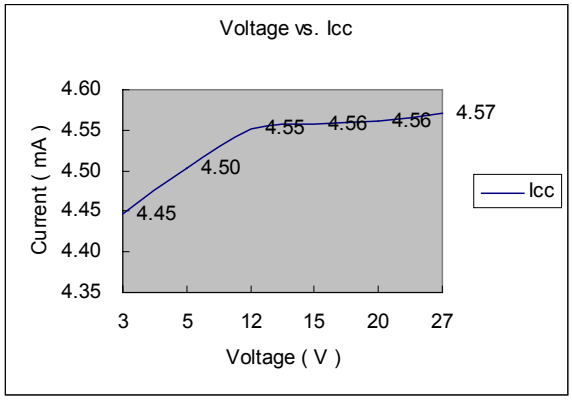
Fig. 2 APPLYING DIRECTION OF MAGNETIC FLUX

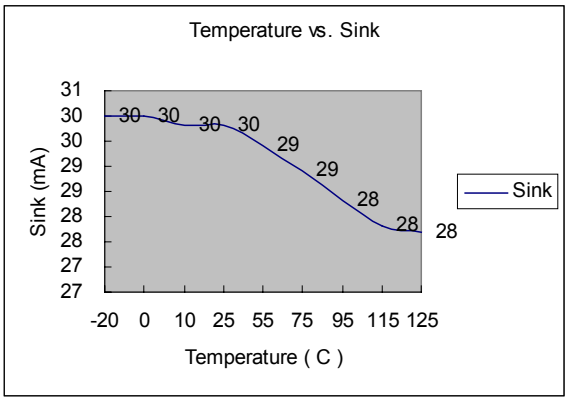
■ TYPICAL CHARACTERISTICS

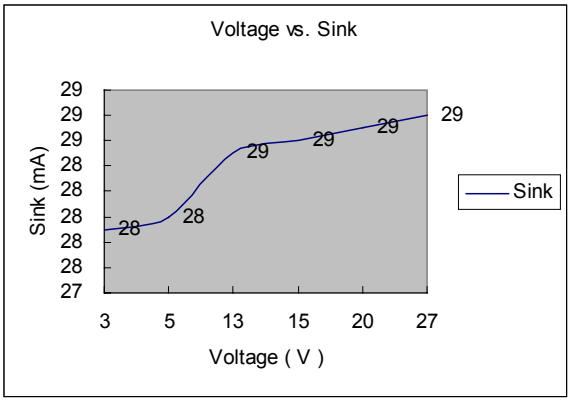












■ TYPICAL CHARACTERISTICS(Cont.)