



U18

LINEAR INTEGRATED CIRCUIT

BIPOLAR LATCH TYPE HALL-EFFECT FOR HIGH-TEMPERARURE OPERATION

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

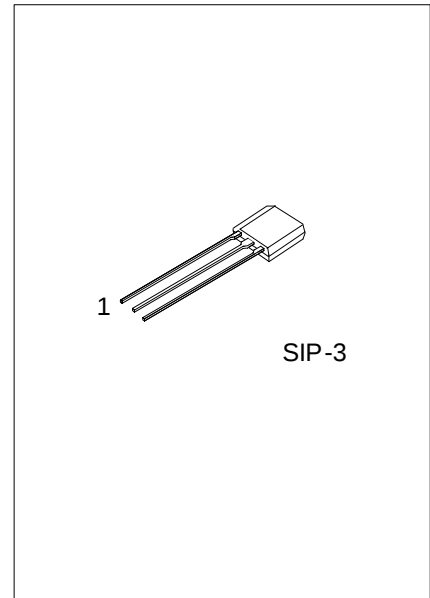
- * Speed sensor
- * Position sensor
- * Rotation sensor
- * Contact-less sensor
- * Motor control
- * Built-in protection diode

ORDERING INFORMATION

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

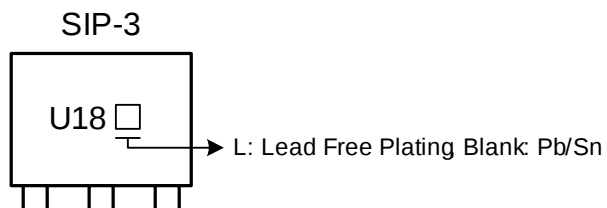
Note: Pin Assignment: I:V_{CC} O:V_{OUT} G:GND

U18L-G03-K (1)Packing Type (2)Package Type (3)Lead Plating	(1) K: Bulk (2) G03: SIP-3 (3) L: Lead Free Plating, Blank: Pb/Sn
--	--

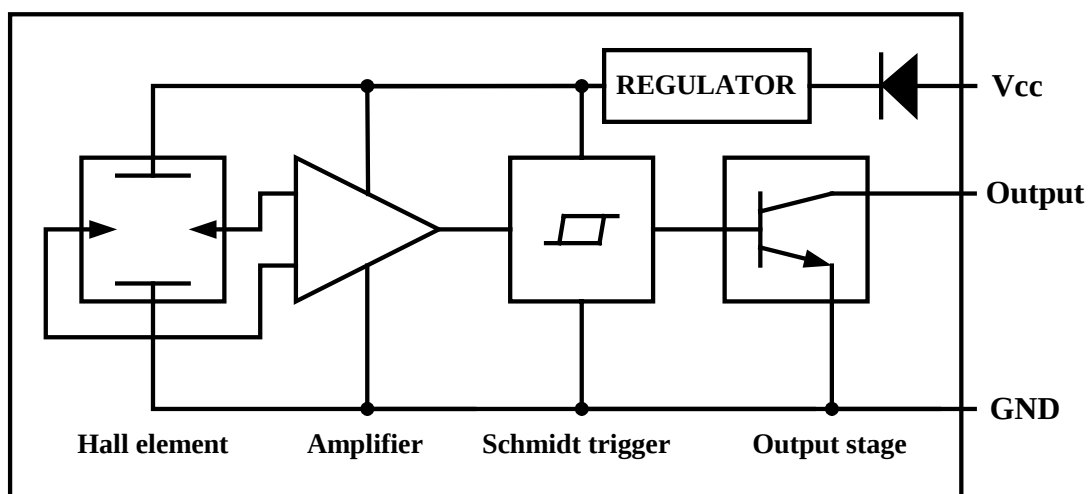


*Pb-free plating product number: U18L

MARKING INFORMATION



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	-I _{OS}	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

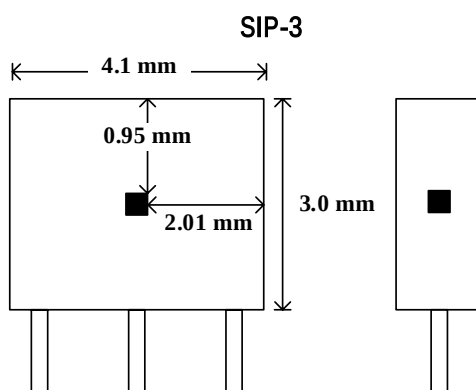


Fig. 1 SENSOR LOCATIONS

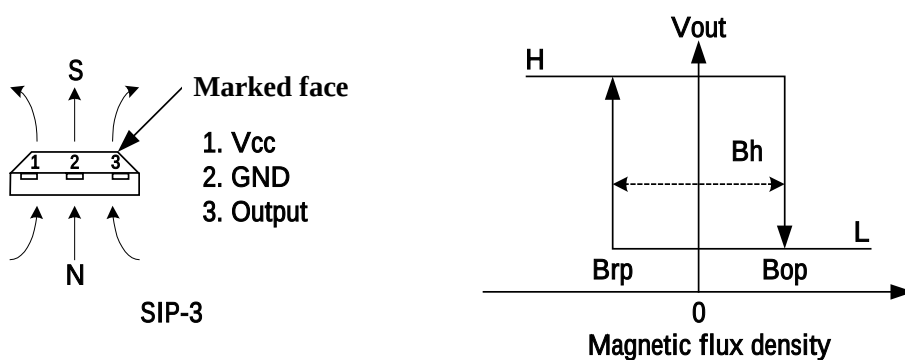
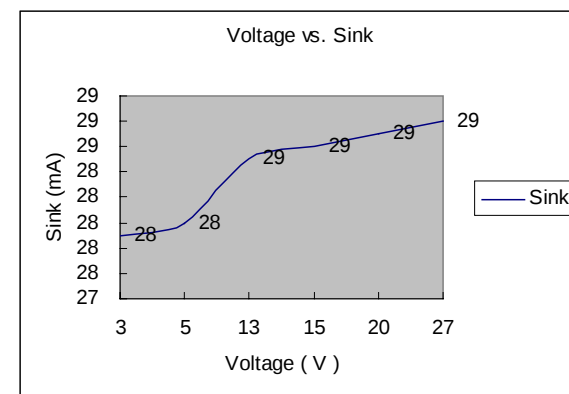
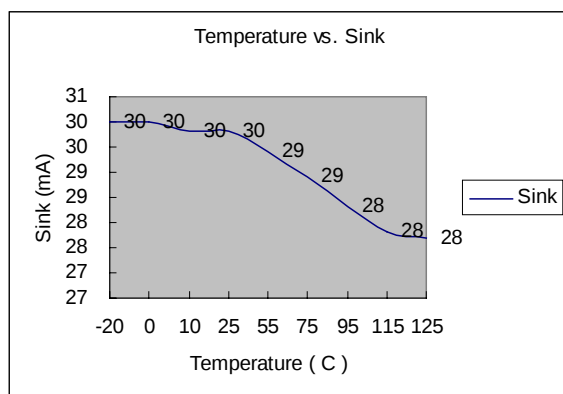
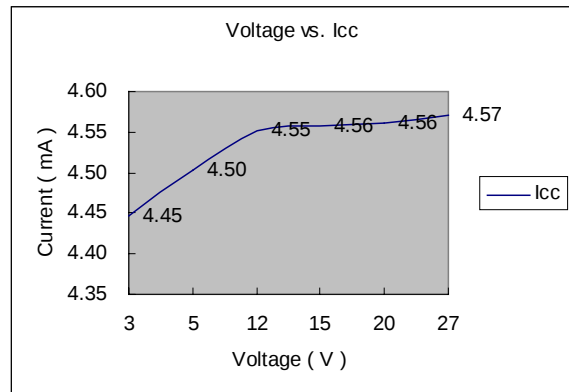
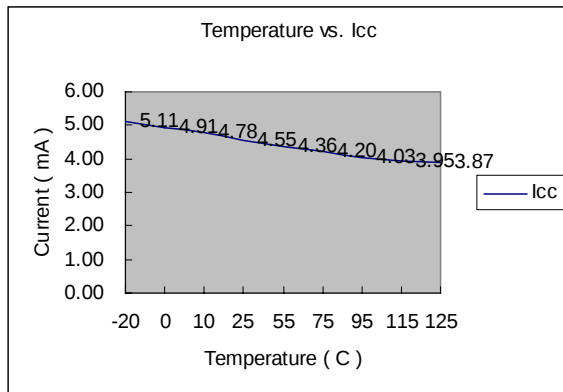
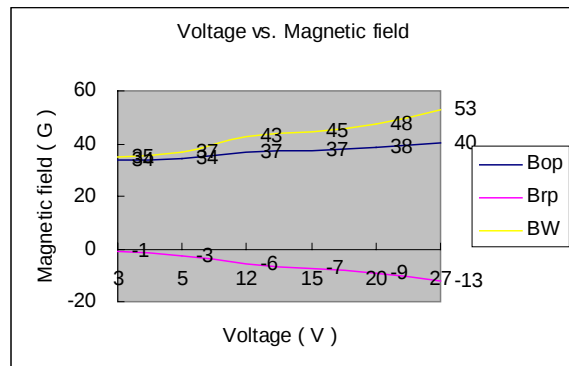
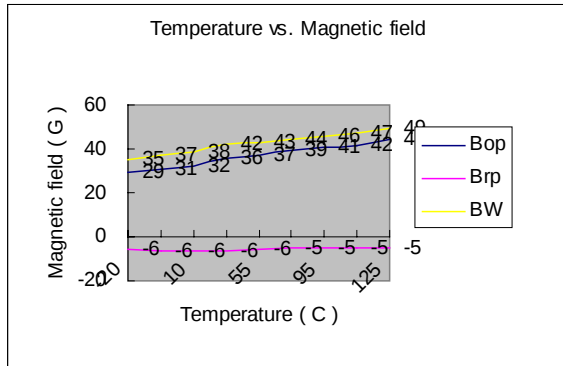
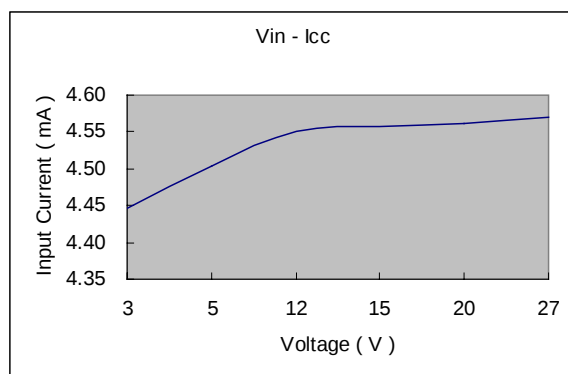
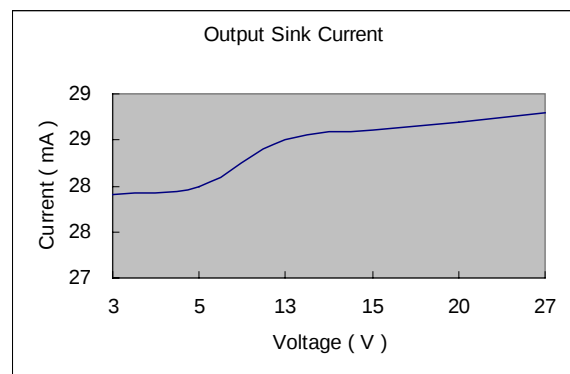
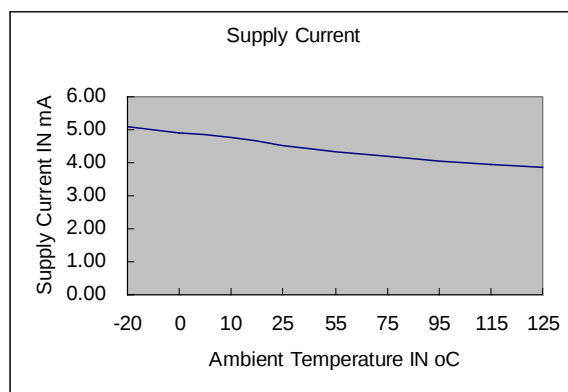
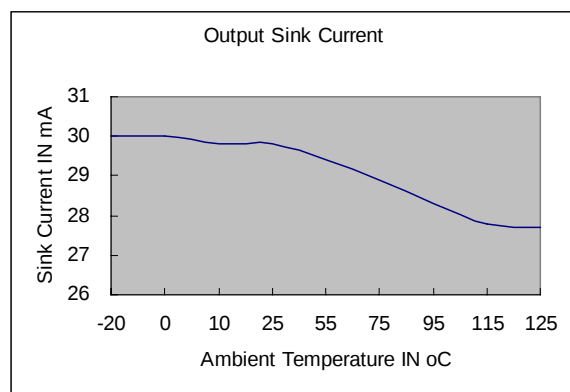
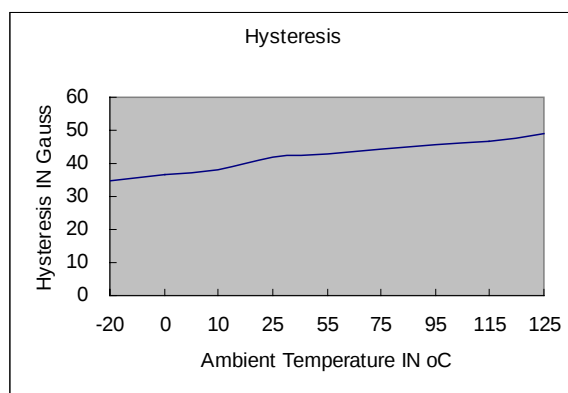
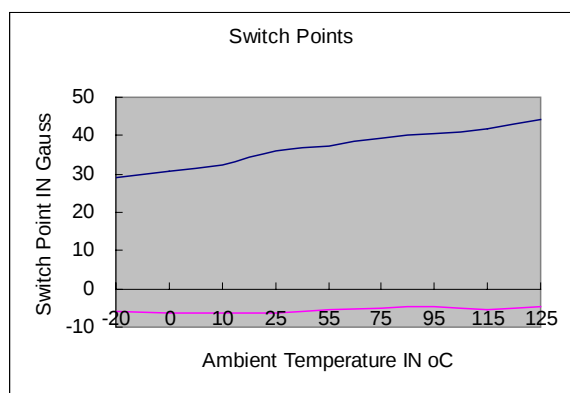


Fig. 2 APPLYING DIRECTION OF MAGNETIC FLUX

■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.