



## SK1826

## LINEAR INTEGRATED CIRCUIT

### BIPOLAR LATCH TYPE HALL EFFECT FOR HIGH-TEMPERATURE OPERATION

#### DESCRIPTION

The UTC **SK1826** is a semiconductor integrated circuit utilizing the Hall effect. It designed to operate in the alternating magnetic field especially at low supply voltage and operation over extended temperature ranges to +125°C.

This Hall IC is suitable for application to various kinds of sensors, contact-less switches, such as Speed sensor, Position sensor, Rotation sensor, Contact-less sensor, and Motor control.

#### FEATURES

- \* Wide Supply Voltage Range of 3.6V to 24V
- \* Wide Temperature Operation Range of -30°C ~+125°C
- \* Alternating Magnetic Field Operation
- \* TTL and MOS IC are Directly Drivable by the Output
- \* The life is Semi Permanent because it Employs Contact-Less Parts

#### ORDERING INFORMATION

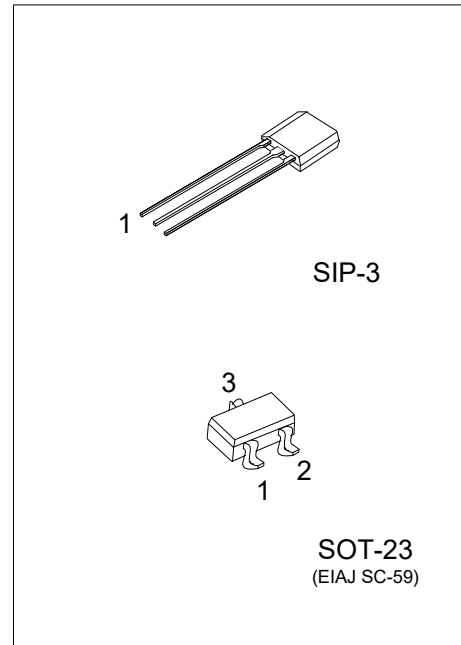
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
SK1826L-AE3-R	SK1826G-AE3-R	SOT-23	I	O	G	Tape Reel
SK1826L-G03-B	SK1826G-G03-B	SIP-3	I	G	O	Tape Box
SK1826L-G03-K	SK1826G-G03-K	SIP-3	I	G	O	Bulk

Note: Pin Assignment: I: V<sub>CC</sub> O: V<sub>OUT</sub> G: GND

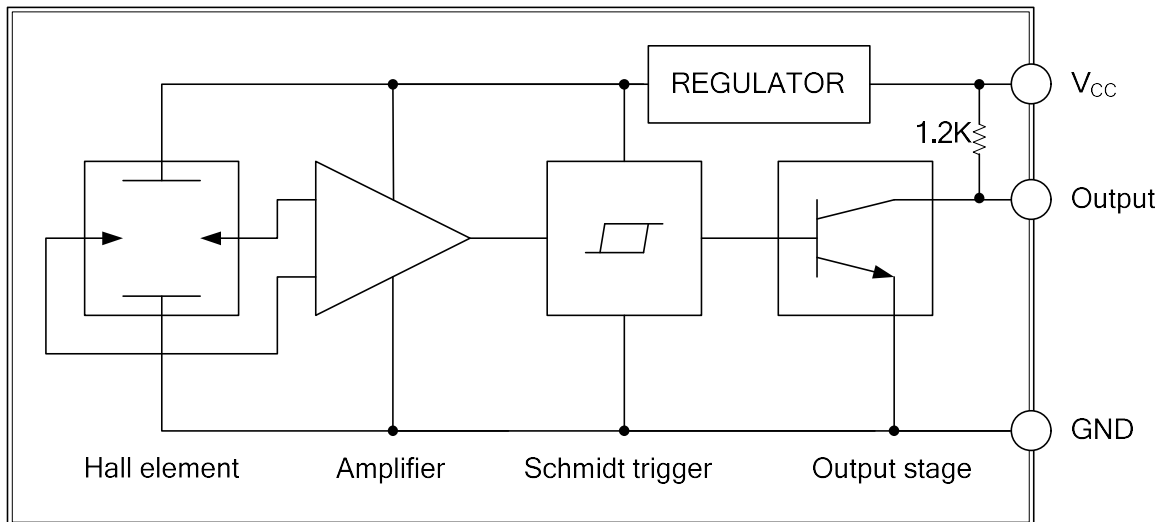
<p>SK1826G-AE3-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Green Package</p>	<p>(1) R: Tape Reel, B: Tape Box, K: Bulk</p> <p>(2) AE3: SOT-23, G03: SIP-3</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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#### MARKING

SIP-3	SOT-23
<p>1826</p> <p>L: Lead Free</p> <p>G: Halogen Free</p> <p>Date Code</p>	<p>1826</p> <p>L: Lead Free</p> <p>G: Halogen Free</p>



## ■ BLOCK DIAGRAM



**■ ABSOLUTE MAXIMUM RATINGS** ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V_{CC}$	3.6 ~ 24	V
Power Dissipation	SIP-3	400	mW
	SOT-23	200	mW
Operating Temperature	$T_{OPR}$	-30 ~ +125	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-40 ~ +150	$^\circ\text{C}$

Note: 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.

**■ ELECTRICAL CHARACTERISTICS** ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Low-Level Output Voltage	$V_{OL}$	$V_{CC} = 16\text{V}$ , $B=30\text{ mT}$		0.2	0.7	V
		$V_{CC} = 3.6\text{V}$ , $B=30\text{ mT}$		0.3	0.7	V
Supply Current	$I_{CC}$	$V_{CC} = 16\text{V}$		3.5	6	mA
		$V_{CC} = 3.6\text{V}$		5.5	10	mA
Output Switching Time	$t_R$	$V_{CC} = 16\text{V}$ , $C_L = 10\text{pF}$			5	$\mu\text{S}$
	$t_F$	$V_{CC} = 16\text{V}$ , $C_L = 10\text{pF}$			1	$\mu\text{S}$

**MAGNETIC CHARACTERISTICS**

Operate Point	$B_{OP}$	At $T_A=25^\circ\text{C}$			5	mT
Release Point	$B_{RP}$	At $T_A=25^\circ\text{C}$			-5	mT
Hysteresis	$B_{HYS}$	At $T_A=25^\circ\text{C}$		5.5	10	mT

Notes: 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  $T_A=25^\circ\text{C}$  and  $V_{CC} = 12\text{V}$ .

2. 1mT=10 gauss

## ■ PACKAGE INFORMATION

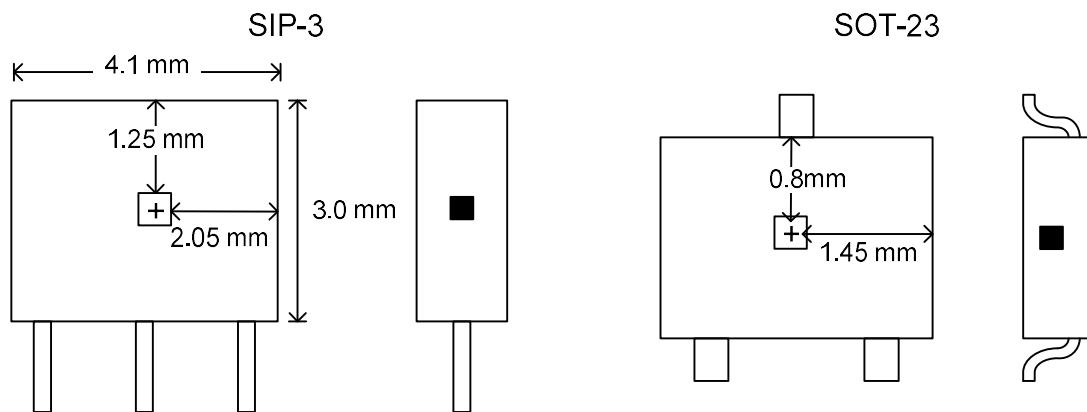


Fig. 1 SENSOR LOCATIONS

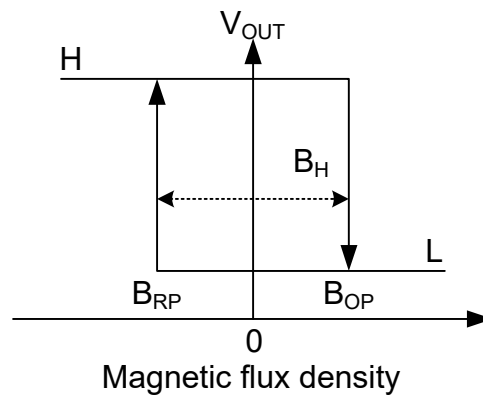
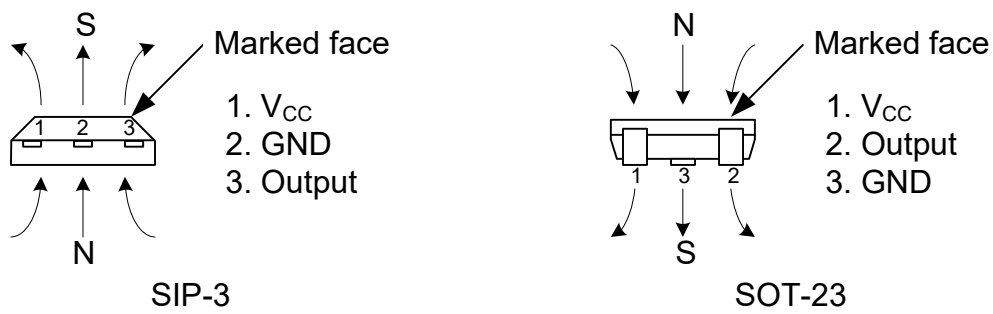
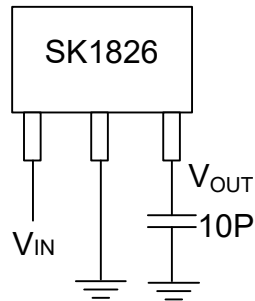


Fig. 2 APPLYING DIRECTION OF MAGNETIC FLUX

### ■ TEST CIRCUIT



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