



## SK8552

## LINEAR INTEGRATED CIRCUIT

### LOW VOLTAGE OPERATION HALL IC

#### DESCRIPTION

SK8552 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°C. This Hall IC is suitable for application to various kinds of sensors, contact-less switches, and the like.

#### FEATURES

- \* Wide supply voltage range of 3V to 20V
- \* Wide temperature operation range of -20°C~+125°C
- \* TTL and MOS IC are directly drivable by the output
- \* The life is semipermanent because it employs contactless parts
- \* Equipped with an output pull-up resistor ( typical 20kΩ)

#### APPLICATION

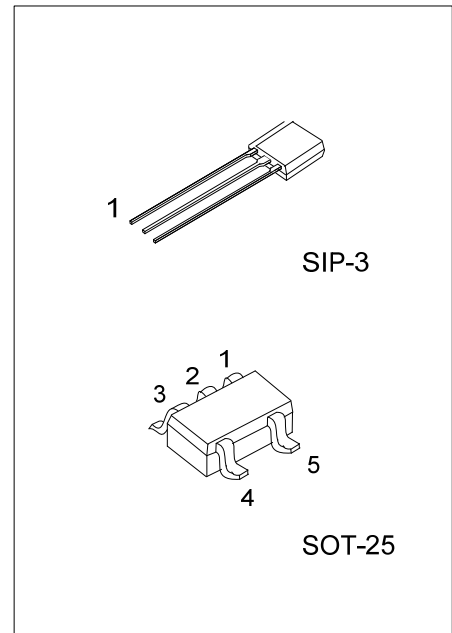
- \* Position sensor
- \* Contact-less sensor
- \* Detection of cover (open/close)

#### ORDERING INFORMATION

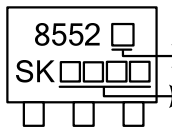
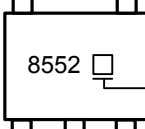
Ordering Number		Package	Pin Assignment					Packing
Lead Free	Halogen Free		1	2	3	4	5	
SK8552L-AF5-R	SK8552G-AF5-R	SOT-25	G	G	O	I	N	Tape Reel
SK8552L-G03-B	SK8552G-G03-B	SIP-3	I	G	O	-	-	Tape Box
SK8552L-G03-K	SK8552G-G03-K	SIP-3	I	G	O	-	-	Bulk

Note: Pin Assignment: I: V<sub>CC</sub> O:V<sub>OUT</sub> G:GND N: No Connection

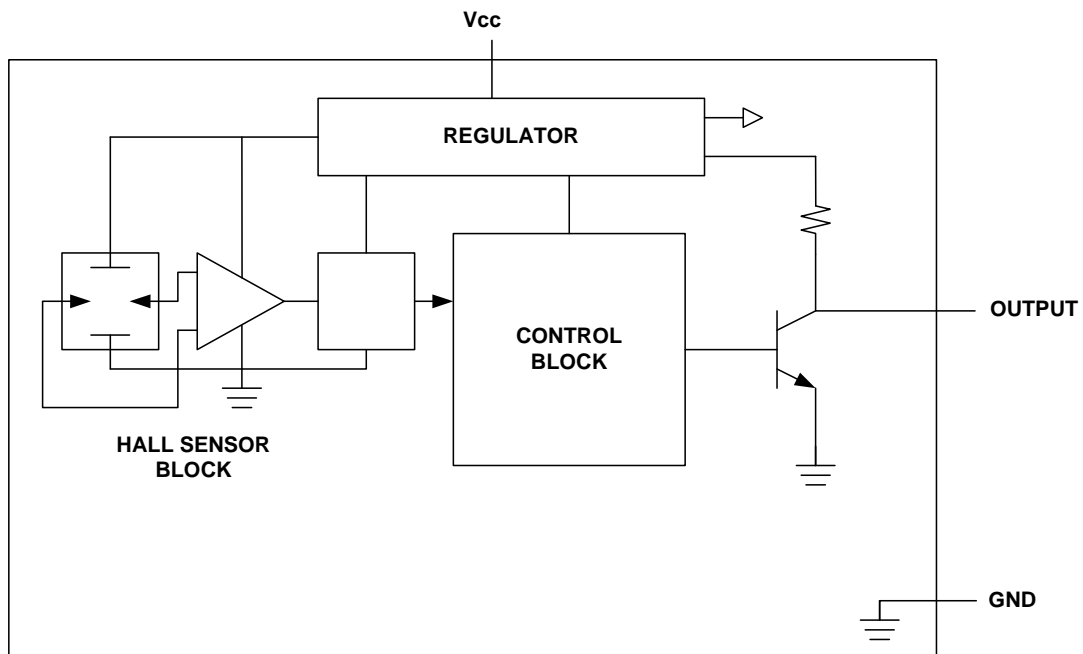
<p>SK8552L-AF5-R</p>	<p>(1) B: Tape Box, K: Bulk, R: Tape Reel</p> <p>(2) AF5: SOT-25, G03: SIP-3</p> <p>(3) G: Halogen Free, L: Lead Free</p>
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## MARKING

SIP-3	SOT-25
 <p>8552 SK □ □ □ □</p> <p>L: Lead Free G: Halogen Free Date Code</p>	 <p>8552 □</p> <p>G: Halogen Free L: Lead Free</p>

## BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ )

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V_{CC}$	3~20	V
Supply Current	$I_{CC}$	10	mA
Output Current	$I_{OUT}$	10	mA
Power Dissipation	SIP-3	$P_D$	400
	SOT-25		200
Junction Temperature	$T_J$	+125	$^\circ\text{C}$
Operating Temperature	$T_{OPR}$	-20~ +125	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55~+150	$^\circ\text{C}$

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.

■ ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Output voltage SH	$V_{OHS}$	$V_{CC} = 3V, I_{OUT} = -10\mu A, B = 100G$		2.8	3	V
Output voltage NH	$V_{OHN}$	$V_{CC} = 3V, I_{OUT} = -10\mu A, B = -100G$		2.8	3	V
Output voltage SL	$V_{OLS}$	$V_{CC} = 3V, I_{OUT} = 1mA, B = 5G$			0.7	V
Output voltage NL	$V_{OLN}$	$V_{CC} = 3V, I_{OUT} = 1mA, B = -5G$			0.7	V
Output current 1	$I_{OHS}$	$V_{CC} = 3V, V_{OUT} = 3V, B = 100G$		10		mA
Output current 2	$I_{OHN}$	$V_{CC} = 3V, V_{OUT} = 3V, B = -100G$		10		mA
Supply current	$I_{CC}$	$V_{CC} = 3V, B = 5G$		5		mA
Output switching time	$T_R$			5		$\mu S$
	$T_F$			1		$\mu S$
<b>MAGNETIC CHARACTERISTICS (over operating supply voltage range)</b>						
Operating magnetic flux density	BHLS	$V_{CC} = 3V$	20			G
Operating magnetic flux density	BHLN	$V_{CC} = 3V$	-20			G
Operating magnetic flux density	BLHS	$V_{CC} = 3V$			100	G
Operating magnetic flux density	BLHN	$V_{CC} = 3V$			-100	G

■ PACKAGE INFORMATION

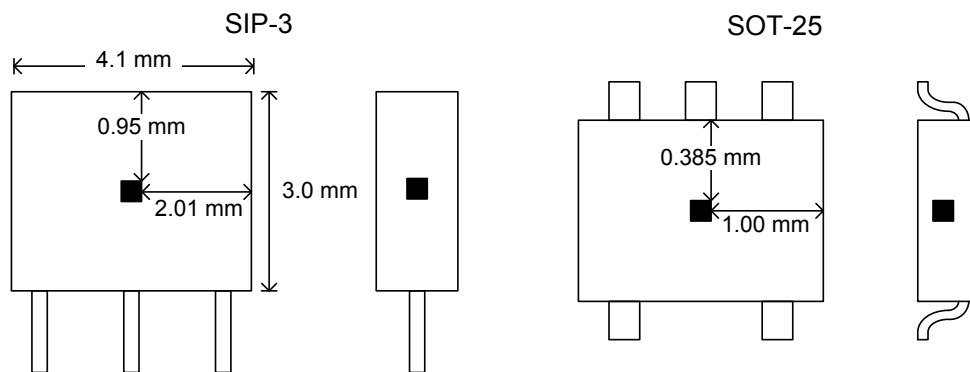


Fig. 1 SENSOR LOCATIONS

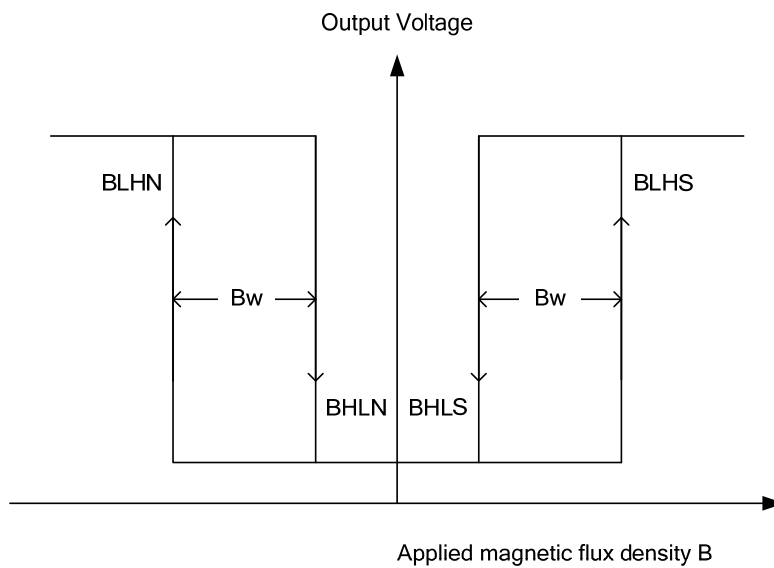
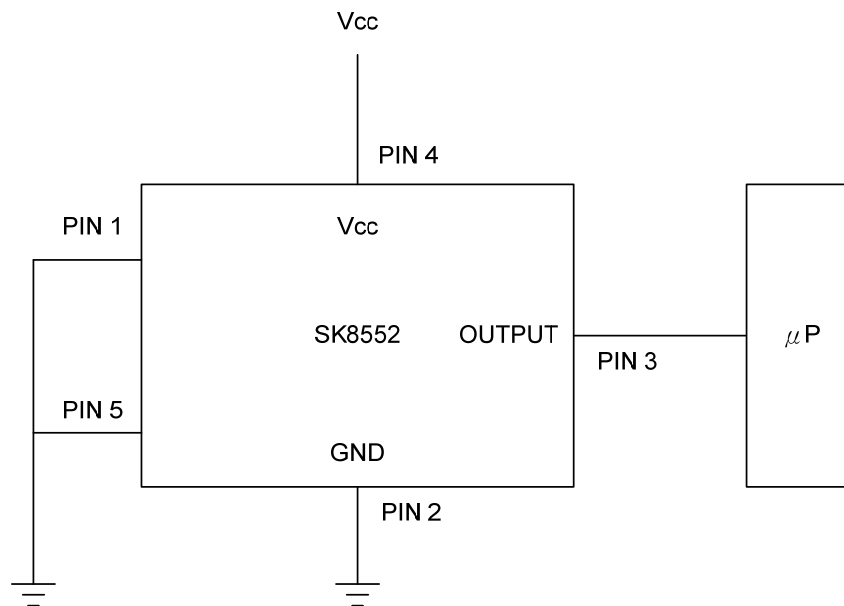


Fig. 2 OPERATING MAGNETIC FLUX DENSITY

### ■ TYPICAL APPLICATION CIRCUIT



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