■ General Description

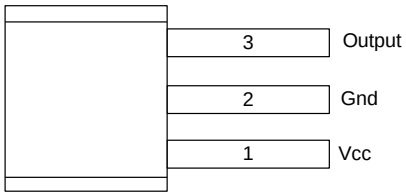
The OCH143 is an integrated Hall effect latched sensor designed for electronic commutation of brush-less DC motor applications. The device includes an on-chip Hall voltage generator for magnetic sensing, a comparator that amplifiers the Hall voltage, and a Schmitt trigger to provide switching hysteresis for noise rejection, and open-collector output. An internal bandgap regulator is used to provide temperature compensated supply voltage for internal circuits and allows a wide operating supply range.

■ Features

- Wide operating voltage range 3.8V~30V
- Maximum output sink current 25mA
- Open-Collector Output
- Reverse polarity protection
- Package: SIP3

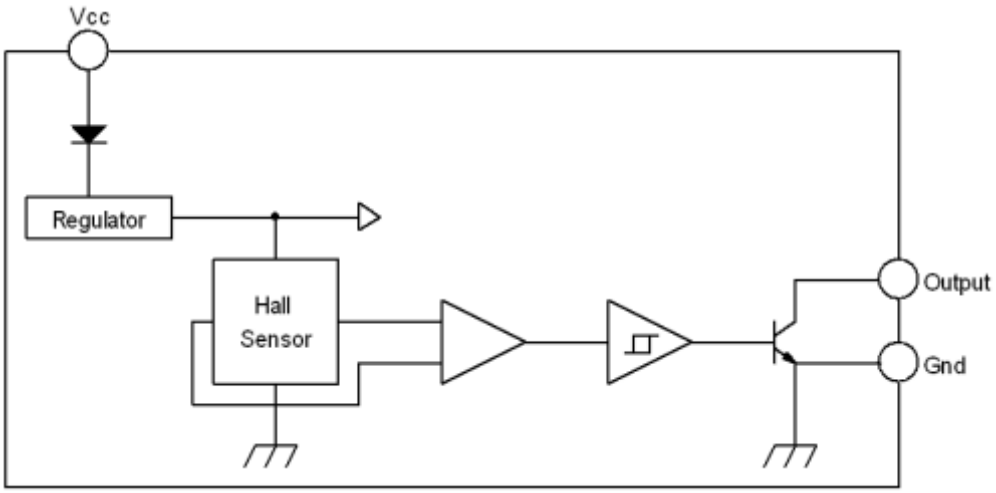
■ Pin Configuration

(Top View)



Name	No.	I/O	Description
	SIP3		
Vcc	1	P	IC Power Supply
Gnd	2	P	IC Ground
Output	3	O	It is low state during the S magnetic field

■ Block Diagram



■ Absolute Maximum Ratings

VCC Pin Voltage		30V
Output OFF Voltage,Vce		30V
Output ON Current(Io) (Continuous Current)		25mA
Power Dissipation	Ta=25°C	400mW
	Ta=100°C	177mW
Operating Temperature Range		-40°C ~+125°C
Storage Temperature Range		-65°C ~+150°C
Junction Temperature		+150°C
Lead Temperature(Soldering,10 sec)		+260°C

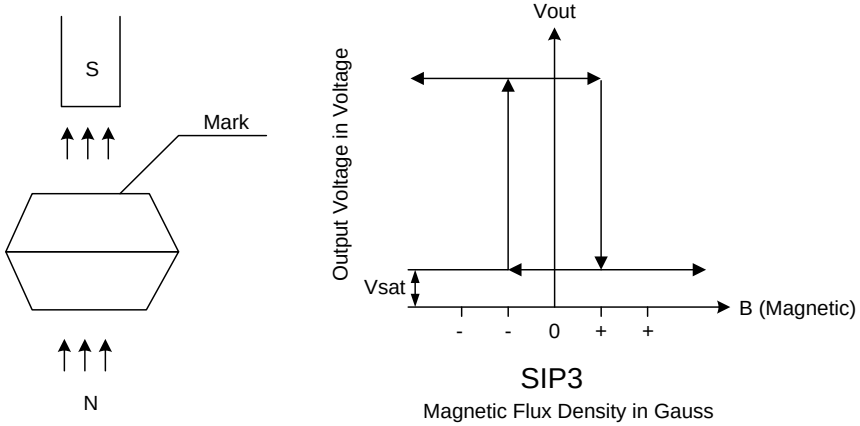
■ DC Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Operating Voltage	VCC	No use pin is open(Fig1)	3.8	-	30.0	V
Supply current	Icc	No use pin is open VCC:3.8V~30V(Fig1)	-	3.4	10	mA
Output Saturation Voltage	V_{SAT}	VCC=12V,Io=20mA(Fig1)	-	150	200	mV
Output Rise time	(t_r)	RL=500Ω CL=20pF(Fig1)	0.1	-	0.6	μS
Output Fall time	(t_f)	RL=500Ω CL=20pF(Fig1)	20	-	150	nS

■ Magnetic Characteristics

OCH143-A	Ta=+25°C				
Parameter	**Symbol**	**Min.**	**Typ.**	**Max.**	**Unit**
Operate point	Bop	+5	-	+80	G
Release Point	Brp	-80	-	-5	G
Hysteresis	Bhys	30		120	G

■ Operating Characteristics



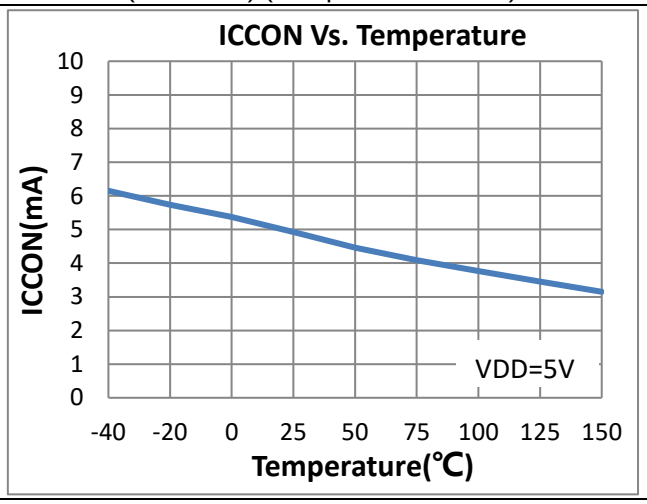
SIP3

Magnetic Flux Density in Gauss

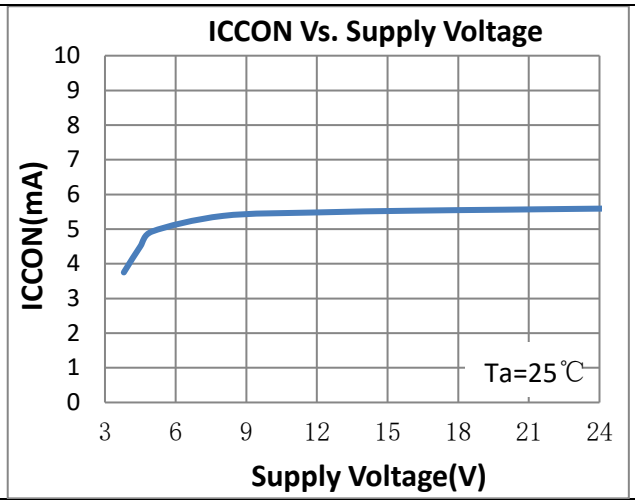
■ Typical Characteristics—OCH143

(Unless otherwise noted, typical values are at T_A=25℃, V_{DD}=5.0V)

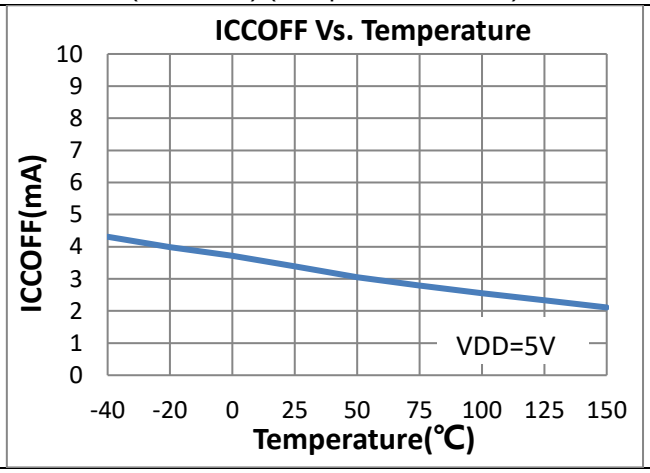
Supply Current I_{ON} vs. Temperature
(V_{DD}=5.0V) (Temp=-40℃~150℃)



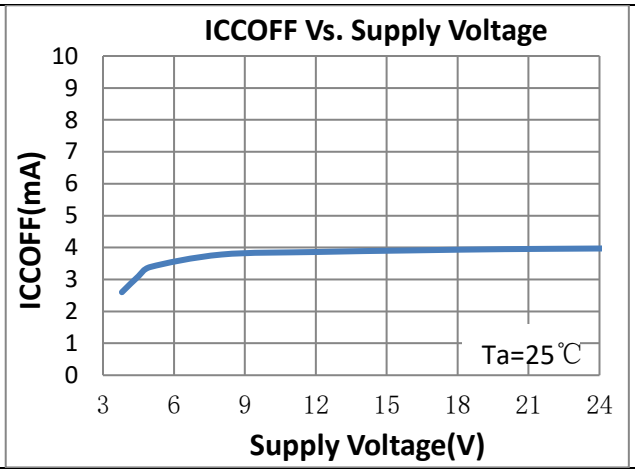
Supply Current I_{ON} vs. Supply Voltage



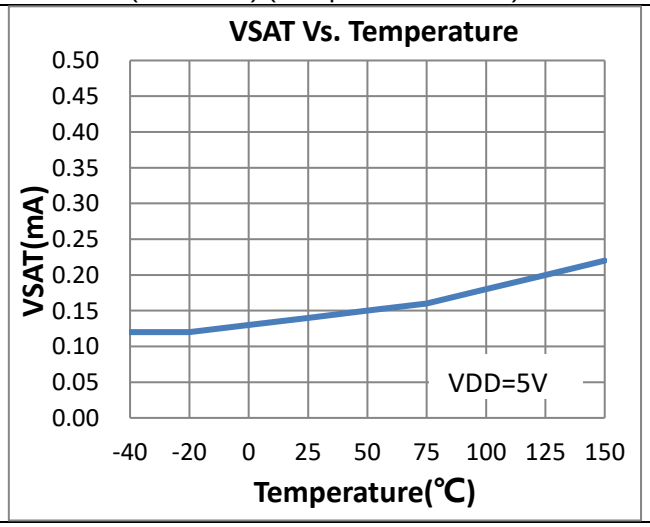
Supply Current I_{OFF} vs. Temperature
(V_{DD}=5.0V) (Temp=-40℃~150℃)



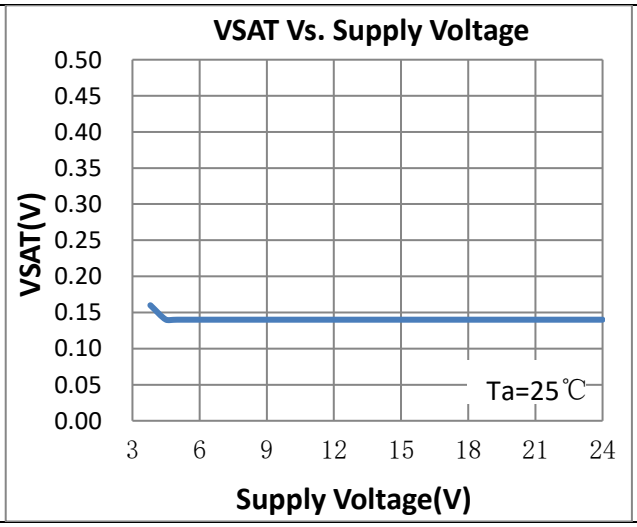
Supply Current I_{OFF} vs. Supply Voltage



Saturation Voltage V_{SAT} vs. Temperature
(V_{DD}=5.0V) (Temp=-40℃~150℃)



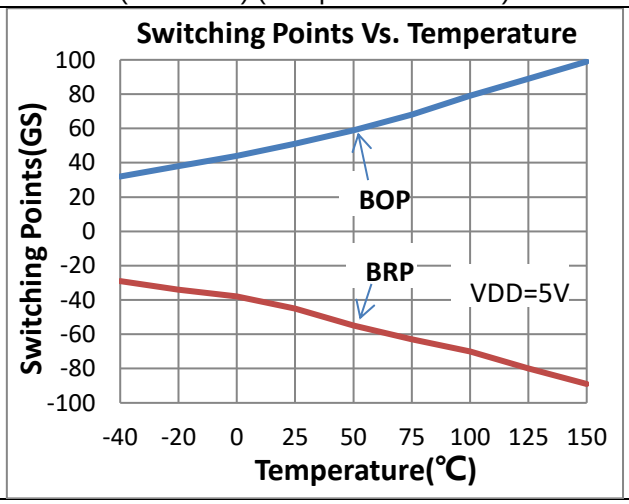
Saturation Voltage V_{SAT} vs. Supply Voltage



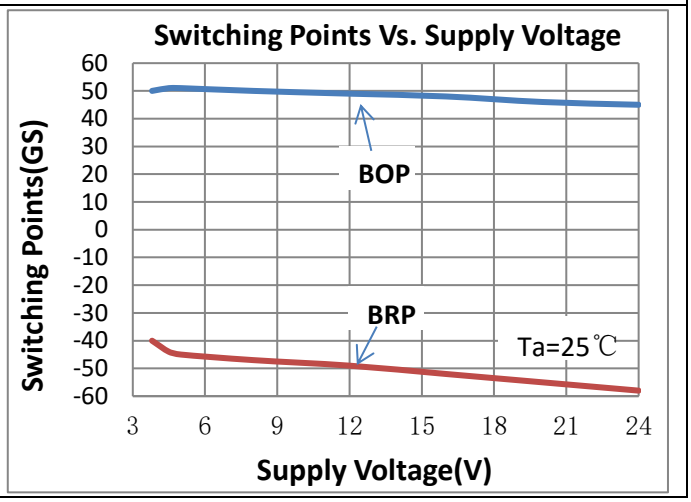
■ Typical Characteristics—OCH143

(Unless otherwise noted, typical values are at T_A=25℃, V_{DD}=5.0V)

Switching Points vs. Temperature
(V_{DD}=5.0V) (Temp=-40℃~150℃)



Switching Points vs. Supply Voltage



■ Test Circuits

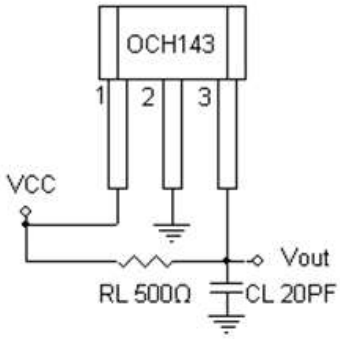
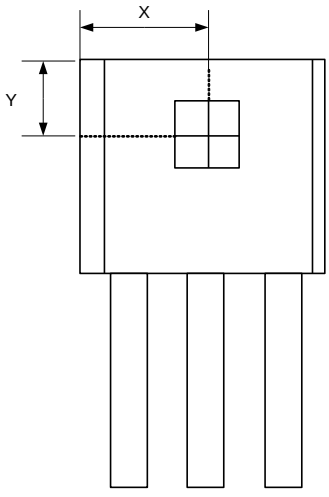


Fig1

■ Hall Sensor Location

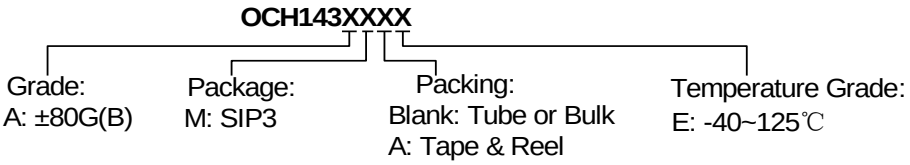
The Fig2 is hall sensor location, where marks the IC number.



		Unit
X	2.00	mm
Y	1.35	mm

Fig2 OCH143 Hall Sensor Location

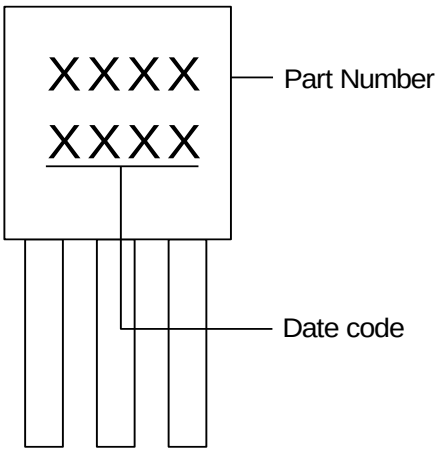
■ Ordering Information



Part Number	Package Type	Package Qty	Brp (Gauss)	Bop (Gauss)	Temperature	Eco Plan	Lead
OCH143AME	SIP-3L	Bulk 1000pcs/bag	-80 ~ -5	5 ~ 80	-40～125℃	ROHS	Cu

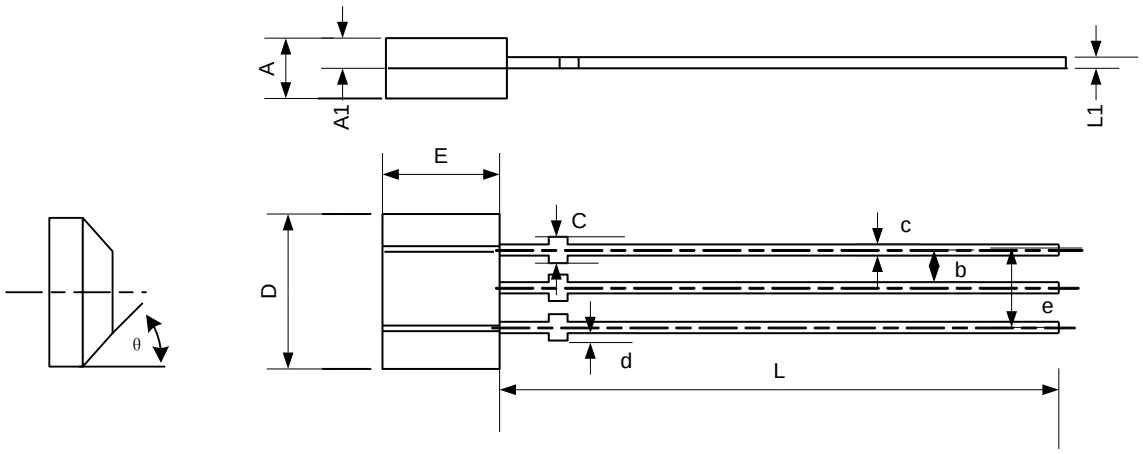
■ Marking Information

1) SIP3



■ Package Information

1) SIP3



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.245	1.753	0.049	0.069
A1	0.750REF		0.030REF	
b	1.270REF		0.050REF	
C	0.406	0.508	0.016	0.020
c	0.330	0.432	0.013	0.017
D	3.960REF		0.156REF	
d		0.100		0.004
E	2.870	3.124	0.113	0.123
e	2.540REF		0.100REF	
L	13.60	15.60	0.535	0.614
L1	0.350	0.410	0.014	0.016
θ		45°		45°

■ Packing Information

1) SIP-3L

Package	Packing Option	Immediate Quantity	Inside Container	Inside Quantity	Intermediate Quantity	Outer Quantity
SIP-3L	Bulk	1000PCS	BOX	1000PCS (1 bag)	21000PCS (21 bags)	84000PCS (4 Intermediate boxes)

BagSize(±3mm)	InsideSize(±3mm)	IntermediateSize (±3mm)	OuterSize(±3mm)
L200mm*W160mm	L176mm*W70mm*H30mm	L540mm*W188mm*H98mm	L580mm*W410mm*H225mm

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